

BOW & ARROW ^{ICD}

The World's Leading Archery Publication

MAY-JUNE, 1968 50 CENTS

SPECIAL: EASTON'S '68 CATALOG

FUR FOR FLETCHING?

A photograph of a soldier in a jungle environment, wearing a helmet and a vest, aiming a bow. The background shows dense tropical foliage and palm trees. The soldier is in the foreground, seen from the side, with the bow drawn and an arrow pointing towards the upper right. The scene is brightly lit, suggesting a sunny day.

**ARCHER
VERSUS THE
VIET CONG**

**LADY LION
HUNTER**

HUNT FOR MAMMOTH MOOSE

WHAT'S NEW FROM BEN PEARSON?

MERCURY BOWS WIN TROPHIES



Jim Dougherty shot twelve big game animals



Stan Warner, new NFAA Free-Style champion

OUTDOOR AND INDOOR

Within twelve months, Stan Warner became Free-Style Champion, National Hunter Round record holder... Ed Rohde emerged as National Animal Round record holder (perfect 560)... Margaret Tillberry won the International Indoor Women's Open... and Marjorie Lammers won the International Outdoor Women's Open. All were shooting Ben Pearson's Lord Mercury bows from the Sovereign professional performance line.

During the same year, Jim Dougherty, Ben Pearson Hunting Promotions Manager, shot twelve big game animals plus coyotes and other smaller game... all with the new Mercury Hunter bow. Jim says it's the hottest bow he's ever held. Other hunters, also, are making enthusiastic reports about the Mercury Hunter's performance.

It is being demonstrated rather convincingly that the patented mercury built-in capsules are the key for these archers. 800 grains of pure liquid mercury in steel capsules are built into upper and lower riser sections. Besides reducing limb recoil and shooter fatigue, they create a flow of forward power that greatly aids in a Mercury bow's cast, reducing or eliminating bow traits that usually interfere with the shooter.

The Lord Mercury tournament bows also have an optional stabilizer rod containing a third mercury capsule in the tip. New champions have proved that this little barrel of mercury reduces lefts and rights caused by bow torque, brings further stability to the bow, and adds points to the scores. **6**

PERFORMANCE GUARANTEE CONTINUES

All Ben Pearson Sovereign bows with the built-in mercury-cushioned power capsules continue to be covered by a performance-satisfaction 30 day guarantee... strongest in the archery business. **7**

THE WINNERS AT DETROIT

As you read this, more than 1400 archers are shooting it out at the \$15,000 International Indoor Archery Championship, Cobo Hall, Detroit, sponsored by Ben Pearson. Results of all events of this Open tournament will be printed in a booklet, available on request. **8**

ARCHERY EQUIPMENT CHARTS ARE BIG HELP

Large, illustrated charts, "How To Select Bow Hunting Equipment," and "How To Select Target and Field Archery Equipment," are one of Ben Pearson's most useful sales aids available to dealers. Especially helpful to beginners, the charts give valuable tips on selection of bows, arrows, leather goods, and accessories. **9**

FREE INFORMATION SERVICE CONTINUES

For details and literature on any news item above, check the box number, write your name and address on the margin, and mail in this page. Or list the item numbers in your letter or card.



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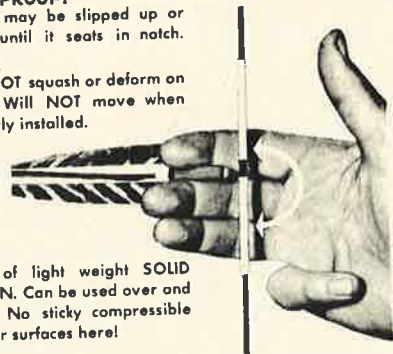
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BOW & ARROW

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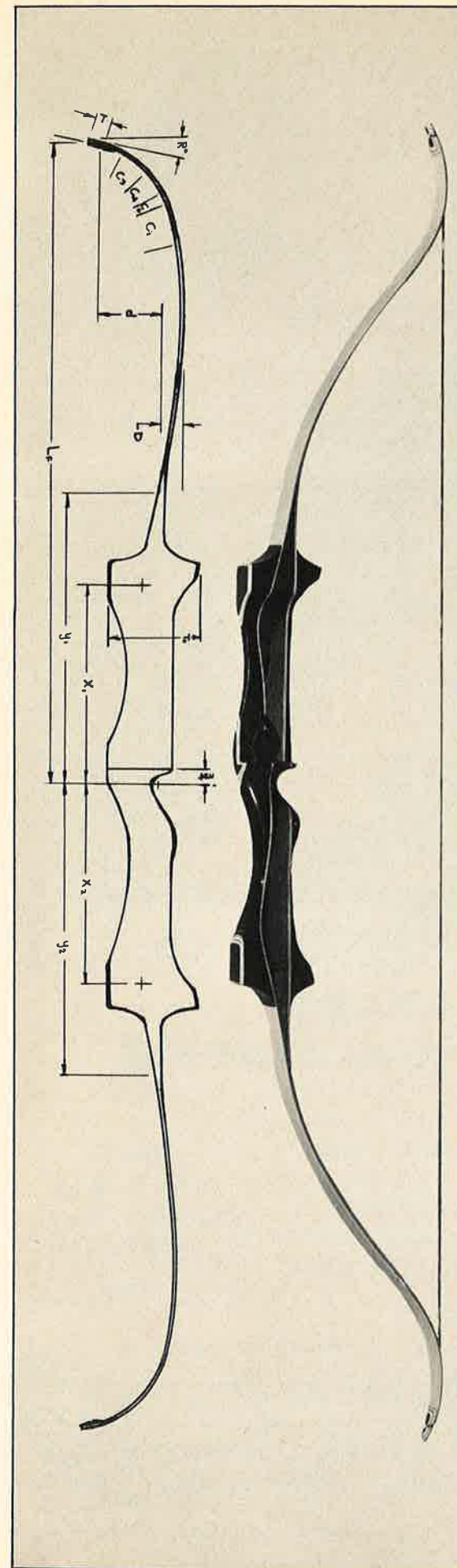
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ON THE COVER: The Navy officer discussed in the article on page 51 shows poor form in launching a burning arrow in the direction of a Viet Cong-infested hunt on a riverbank in Vietnam, but the results have been gratifying, official records show. **U.S. Navy photo.**

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BOW FOR BEAR

I have a forty-six-pound bow and use Bear Razorhead arrows. Would this do for killing black bear and other animals of this size in Colorado?

Danny Jordan,
Little Rock, Arkansas

(You would do better using a bow of fifty pounds minimum weight for bear hunting. However, a number of bear have been killed with lighter bows, particularly if the arrow weight is kept heavy such as by using Forge-wood shafts.)

FLETCHING CONCEPT

In your May/June '67 issue, Wini-fred O. Moore stated that an arrow shot upwardly does not start rotating until it starts its downward journey. You point out that the arrow does

rotate, but commensurate with its speed.

It is on the theory of rotation that we developed our *Spiral Killer* broad-head. It turns the arrow as much at the tip as the feathers do at the end, which rotates the arrow. Also these helical shaft broadhead blades rotate the shaft as it penetrates any type of game.

A standard broadhead tends to hold the arrow straight in flight, while the feathers are trying to turn, which is diametric opposition.

Earl A. Miller,
Drem, Utah

(Earl Miller is inventor of the Spiral Killer Broadhead, which is being marketed, we understand, by the Miller Ski Company of Drem, Utah.)

BE OUR GUEST

In the Nov./Dec. '66 BOW & ARROW, an article entitled, *A Simple Route To Arrow Velocities*, was presented. The article, written by Fred Isles, dealt with a machine constructed of simple materials with which the author could measure the velocities of arrows with a considerable degree of accuracy.

I am a high school junior and am planning to enter a local science fair. Would it be possible for me to use

a modified version of this machine as a part of my exhibit, which deals with measuring speeds? This version would include a pendulum similar to the one Isles used. I also would like to use his charts on page 44 and 45.

David Mehne,
Ganado, Arizona

(Please feel free to use whatever material from BOW & ARROW you find you need. We feel that the educational aspects in archery are most important to the further expansion of the sport.)

ROOM FOR CHANGE

I would like to state that the only thing that brings more pleasure to me than your magazine, while I'm up in this wasteland, is mail from members of the female gender. The only problem is that neither type of mail seems to come often enough.

Since I am an engineering student at MTU, a couple of items in your magazine caught my attention more than the others. In *Tackle Tips*, an acceleration rate of thirty-two feet per second was given. Unless all I have learned in physics has gone to waste, thirty-two feet per second is a velocity, not an acceleration. According to

Continued on page 72



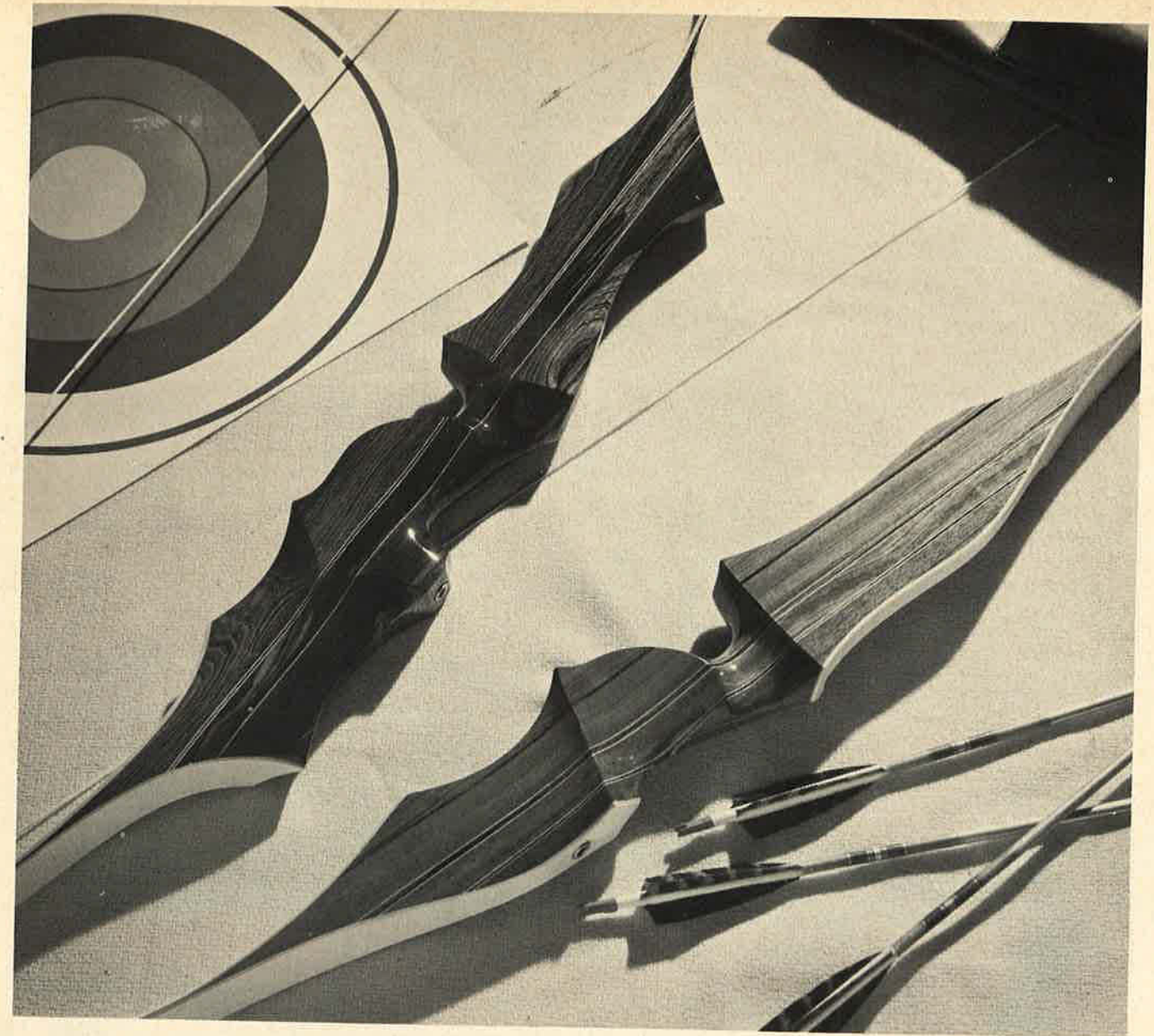
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TECH TALK

BACK BUILDER

Is there any sort of tension device which can be used to develop back and shoulder muscles before purchasing a bow? At one time, it seems to me, there was one designed specifically for archers. I believe it could be adjusted for whatever bow weight the prospective archer wished to use.

Alden Murphy,
New York, New York

(One of the best exercisers is your strung bow, pulling it slowly back to full draw, then holding it there a few seconds and letting it down again slowly. Do this a dozen or so times morning and evening. The device you refer to was discontinued some years ago by the maker.)

TECH DOPE?

I have owned five bows and recently purchased a Bear Super Kodiak in the sixty-inch length. I wonder if you have any information as to brace height, nocking point, et cetera. I would appreciate anything you could suggest that would aid me in fine-tuning my bow.

J. C. Daniel, Jr.
Ruston, Louisiana

(The Super Kodiak generally will shoot best for you with a brace height of 7½ to eight inches. The lower heights usually obtain more speed, however, and 7¼ inches sometimes is found to be best. Generally, you will do best to try various positions to see which gives most accuracy and greatest speed. This also goes for the nocking point, which is best started at about one-eighth of an inch above horizontal.)

BURN STAIN

I make my own arrows, using full feathers, then trimming them with a feather trimmer. The results are good arrows with feather size and shape to suit my fancy.

The problem with this method is that the feather trimmer leaves a burn stain. This stain wears off in

time but I would like my new arrows to look new. Is there a chemical or some other method I could try so as to eliminate this problem?

R. W. Foote,
Goldenrod, Florida

(Try cleaning the stain with rubbing alcohol and it should come right off.)

LEFT OR RIGHT?

I have been shooting a bow for about two years and am left-handed but have been shooting right-handed with a right-handed bow. For some reason, it feels more natural for me to hold the bow in my left hand.

I have been shooting barebow, but now the problem is that I would like to use a sight on my bow but how can I if my left eye is the dominant one? I'll have to use my right eye, but then the right will always be off.

Vincent Matoni,
Niagara Falls, New York

(When shooting any bow, the so-called master eye should be the one above the arrow.)

(In the case of a left-handed archer, this master eye is his left eye. For him to shoot a right-hand bow, he will

Continued on page 58



Photo taken at Dave Staples Archery Lanes, Easton, Pa.

D

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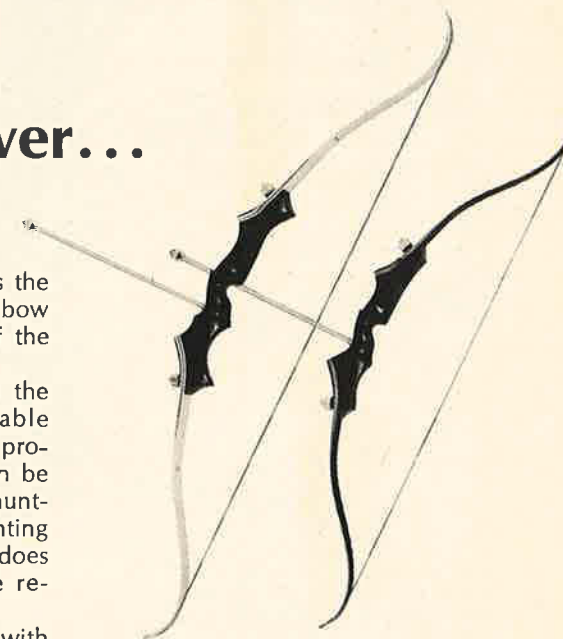
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HUNTING WITH Doug Kittredge

JUST stuck a big White Tailed Jack Rabbit a little bit ago. We were pussyfootin' a ridge alongside of snow covered Hot Creek when I spotted this big fellow just to the shady side of a piece of sage brush. He sure was keeping his eye on me, but without so much as batting an eyebrow. As I turned around slightly to get my shot away, the dry snow kept persisting in squeaking under my clumsy snowshoes until I just knew that rabbit was going to be long gone before I could nail him. But he waited that split second too long. There he lay only a few yards away in a monstrous red splash against the glittering afternoon snow. Looking down at him you wouldn't believe such a relatively small animal could contain so much blood — for here was more than you often see in killing a deer!

Such is the point — of the arrow, that is! All the ads and literature on bowhunting stress, "keep your broadheads sharp." Just about every bowhunter knows this No. 1 rule of the hunting field, with most of us following it to a degree in keeping with our understanding of how an arrow kills.

The problem is, **HOW SHARP IS SHARP???** With the exception of the use of a blunt on small game, or in the case of a spine or head shot on big game, an arrow kills solely by hemorrhage. That is, the bleeding of an animal until he collapses and dies. Unless a vital organ such as lungs, heart or liver is hit, the blood flow must be great enough to prevent the blood from coagulating and closing the wound until it heals.

The sharpness of the broadhead does not govern penetration as much as it controls the amount of cutting damage to the animal tissue through which it passes. With my snowshoe rabbit the arrow was still in the animal — about half sticking out of each side. Yet that animal was sure cut bad by the razor blade edges of my broadhead. It's the cutting edges of the broadhead that do the job; particularly the last one third of the blade.

You can get an idea of the difference between a sharp and a dull broadhead by imagining that you have a freshly sharpened wood pencil gripped with your right hand. Imagine you hold your left hand with the palm up and then abruptly stab the pencil completely through your hand. The resulting wound would indeed be painful. There would be a certain degree of blood, but it would soon coagulate and then stop. The pencil had forced a hole in your hand, not by cutting tissue, but instead by wedging and tearing the tissue apart.

Now imagine the very same experiment using a finely sharpened penknife. Sharpen the back of the blade as well as the front, both to a razor blade keenness. Then, stabbing your hand with an instrument no larger than the pencil, produces an entirely different result . . . you have CUT, not WEDGED the tissue open. Blood gushes out. The wound does not coagulate. In fact, if you don't get some medical attention soon, you'll soon be nothing but a statistic!

This is the killing power of a sharpened hunting arrow. You must have a broadhead which will cut, not wedge apart the meat and tissue. Furthermore, the cutting edge must cut easily. Animal tissue is flexible and soft. If it requires pressure for your broadhead to cut, it will spread apart and roll the meat over the cutting edge, rather than producing a cut. There is no cutting edge like a razor blade! Such an edge is the goal to try and achieve as you sharpen your bowhunting heads.

Continued on page 65

TACKLE TIPS

by Emery J. Loiselle

ONCE in a while an archer finds his favorite set of aluminum arrows has grown too short for him. Arrows which are too short generate a cramped feeling. The archer would like to stretch out a little more to get the elbow of his draw arm way back and in line with the arrow where it belongs. This also would increase his trajectory somewhat.

How this situation comes about is sometimes a mystery. Generally the reason is that the arrows were purchased too short to begin with. When the archer measured his draw or did not make a few practice draws before measuring to build up his muscles to an unrestricted draw. His assistant who marked the length may have done the job incorrectly. Determination of length may have been done with one of the dubious methods employed by some vendors without the archer actually drawing the bow. The archer may have changed his anchor to one requiring a slightly longer arrow.

Whatever the reason, you don't have to retire this set and purchase another. It is possible to add as much as five-eighths of an inch to the length with safety. Although the joint may possibly be somewhat weaker than the arrow proper, its location near the tip precludes any danger of injury should the joint fail.

It will be necessary to obtain a length, or pieces, of aluminum shafting the same size as your arrows. If you made the arrows yourself, you may have kept the extra lengths you cut off. Otherwise you certainly must have a derelict lying around — a broken arrow, or one with a bad bend or kink in it — from which you can cut the short pieces you will need.

The first step is to find the exact length arrow for you. String up your bow and keep handy an extra long arrow — perhaps a hunting arrow. After taking a few shots or practice draws to limber up, nock the long arrow (or you may use a yardstick) and make a full comfortable draw with elbow well back and in line with the arrow. Now have your companion mark the arrow just forward of the point where the arrow touches the pad on the side of the window. Lay one of your arrows beside the marked one and measure the difference. This is the length for the little sleeves you will make.

You will need an arrow holding block similar to Figure A in the photo to prevent injury to the shafts. Cut a piece of wood into a two-inch cube. Drill a hole through the center of the block using a drill which approximates the diameter of the shaft. While you're at it, you might drill another hole or two for different size shafts such as hunting arrows. This will come in handy when replacing field points with broadheads. Saw the block in two at the center of, and down the length of, the holes.

To disassemble the point from the shaft, place the arrow in the clamping block with approximately two inches of the tip protruding, then hold the block in a vise. The wood removed by the saw provides the clearance needed for clamping the arrow tightly. Heat the two-inch point end of the shaft with a match or small torch and pull the insert from the shaft with pliers while it is still hot. The insert is a small tube with target point attached. The tube is a close fit inside the shaft and acts as a strengthener for the business end of the arrow.

In order to make all spacer sleeves identical in length, drill a hole in the end of a one by one-inch strip of wood to a depth equal to the difference between the old and new arrow lengths, and of a diameter which will accept the shaft. Insert the surplus shaft stock as in Figure B of the photo

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ACCURACY FOR SALE



MATTS

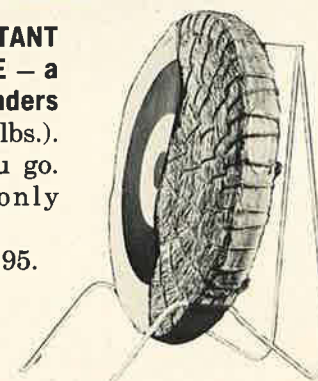
Practice will help you win tournaments... get your share of game... have more bow 'n arrow fun. Experts say top form requires shooting every day. A Saunders Matt makes most any place a good place to practice. Practice in the basement or back yard — and

if it's muddy, shoot up your driveway (into the lighted garage at night). Simulate field conditions — shoot uphill, downhill, across the creek, through trees. Be ready for that successful hunt. Accuracy for sale — a Saunders Matt!



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A Flood And A Disguised
Grizzly Spark This Episode!**

THE small red Super Cub settled to meet the on-rushing patch of gravel our pilot jokingly called an airstrip. The tires made contact long before touching solid ground, as they slashed into tall grass and weeds browned by early frosts. We ground to a bumpy halt and I stepped out, glad to be free of the cramped quarters of the Cub.

It was evident Jack Frost had been here before us, leaving a trail of color that can only be found in the Far North during the fall of the year. The aspen, willow and birch were ablaze in cloaks of gold and yellow sprinkled with flashes of red. The smaller bushes and plants such as Alpine bearberry contributed their sharp reds to the spectacle of the Alaskan tundra.

This was Ptarmigan Creek in the Alaska mountain range, deep in the interior of Alaska and the site of our next ten days of hunting. It was phase two of a twenty-day hunt Ron Miller and I had planned months ago. We were being transferred from our high mountain camp, twelve air miles away, to an area where I hoped to arrow a trophy moose, caribou or grizzly. Ron was looking for a grizzly and would use a rifle during this part of the hunt.

We had been in the brush two weeks and had successfully taken Dall sheep in the high country on the slopes of Mount Hayes, a 14,000 foot peak of solid rock, ice and snow. My ram was taken with a bow. Ron resorted to a rifle after a number of unsuccessful but magnificent and difficult attempts with his bow. He was working against time, as he had to leave Alaska shortly after our hunt.

Ptarmigan Creek always has been a productive area for bowhunters and I was looking forward to the next ten days. The current Pope and Young world record caribou was taken from this camp by Bill Brown of Seattle, Washington. Bob Lee, owner of Wing Archery Company, took two beautiful caribou bulls which measured over four hundred points each. In the same year two moose were taken that carried antlers measuring sixty and seventy inches. Ptarmigan Creek is good game country. It's a migration crossing for caribou and a rutting area for moose with some grizzlies thrown in.

The Cub returned with Ron and the balance of our equipment. By the time the camp was secure, it was nearly noon. Ron grabbed the water bucket but was

Author can still offer a weary smile as he poses with his trophy moose taken in the midst of a hectic hunt.



back in minutes looking for my ultra-light spinning rod. He had spotted some Arctic grayling lingering in the clear stream and would catch a few for our meal.

I mixed hotcake batter, made coffee, sliced bacon and peeled potatoes. On my way to dump the peelings I located some blueberries. The coffee was starting to perk when Ron returned with six eating-size grayling. In a few minutes we were enjoying a meal fit for a king: canned fruit segments chilled in a mountain stream, blueberry hotcakes, crispy fried grayling with bacon strips, hash browned potatoes and scalding coffee.

When I awoke from my apres lunch nap, it was after four. Ron was gone, and it was quiet except for a slight breeze whispering through the spruce. I gathered my gear and a handful of rubber blunts, in case I was attacked by an irate grouse or rabid rabbit, and headed upstream toward the mountains.

I had been hunting for an hour or so and climbed to the crest of a hill and sat down to look. A beautiful and serene sight unfolded before me — the rugged Alaska range loftily pushing snow capped peaks into the crisp arctic sky, while below on the slopes stood

silent belts of black spruce highlighted with a sprinkling of golden birch and aspen. In the valley, surrounding the gray glacier streams, stood groves of willows dressed in fall garb. They glowed yellow, red and orange. The late afternoon sun cast shafts of light across this panorama as it dodged between the craggy peaks, playing hide-and-seek. With only the rustle of the wind across the tundra, I was alone in paradise.

Returning to camp, my reverie was interrupted by a movement in the willows near the river. Trotting toward me was a young caribou traveling as though he had no place to go and plenty of time to get there. I spotted a fallen spruce near the river and stepped off the trail to wait. The windfall would give me cover and a better shooting position. If the caribou continued his present course he would pass within a few yards. Just when he reached a decent bow range he shifted his direction slightly and disappeared behind a high dirt bank. I left the windfall, approached the edge of the bank and discovered the animal directly below me at about ten yards. When I drew back to shoot, I realized that if I shot low, the arrow would hit the bank. If I shot as little as six inches high, the arrow would clear the caribou's back. I couldn't change position as the caribou was too close and there was no cover left.

The bow twanged, I heard a loud crack and sparks flew as the arrow ricocheted off the bank. The caribou bolted, ran back along the bank for about thirty-five yards and stopped. The second arrow caught him squarely in the neck and he dropped like a ton of bricks. In all my years of hunting I never have seen an animal drop as quickly as this one. The caribou was a two-year-old cow with small horns but very fat and, as we learned later, excellent eating.

Morning broke clear and cold with a heavy frost covering the bushes and ground. We set up the spotting scope, scanned the hills for game, and in minutes spotted three large moose, several caribou and two grizzlies digging out a ground squirrel. The animals were scattered over a large area but at least we knew game was about and reasonably abundant.

A short distance from the end of the airstrip but across a raging river was a mineral lick visited by every animal passing through the area. We checked the lick and found a fairly good caribou. The river is too deep and fast to wade, but I discovered earlier when animals are spooked off the lick they take definite travel patterns. I intended to cash in on this knowledge.

Ron, who agreed to spook the beast, waited fifteen minutes and started yelling. My hiding spot wasn't very good and I had practically no cover, but it was too late. The caribou must have thought a wild man was after him and began crossing the river. He was coming fast and, if he didn't change direction, would pass within bow range of my lair.

Years of wearing camo clothing have taught me to be careful. The animals can't see you unless you move. The caribou was close now. If he didn't veer, he would run over me. When he was a few feet away, I raised to shoot. His eyes bulged until I thought they would explode. He reared on his hind legs, in an effort to halt his forward motion and threw rocks and dirt all over me as he tried to get away. I was at full draw trying

to find a spot to hit, but all I could see was flying feet, bulging eyes and a wild caribou desperately trying to avoid contact with this strange enemy. The situation struck me as being fantastically humorous and I burst out laughing. When I released the arrow I might as well have been shooting at the moon. He composed himself in about fifty yards and stopped to look back, but I was laughing too hard to try again. He stared at me a few seconds, decided not to press his luck and trotted off. I missed getting a fine trophy, but I chuckle every time I think of him and the frantic fear in his eyes when I popped up in front of him.

We spent the remainder of the day and several days to come looking for good heads but they weren't to be had.

One afternoon I was returning to camp. Rounding one of the stream's many crooks and turns, I spotted a huge grizzly busily picking blueberries. My heart skipped a beat when I put the glasses on him and saw how big he was.

I am familiar with the killing power of the arrow, but I know it often takes a few seconds to work. I am also aware of the speed and strength of a full-grown

grizzly. The bear wasn't in a good location for a bow-hunter. He was in the middle of a huge clearing that offered little cover for a stalk and no protection in case he charged. I had no back up and suddenly lost my desire for a grizzly rug.

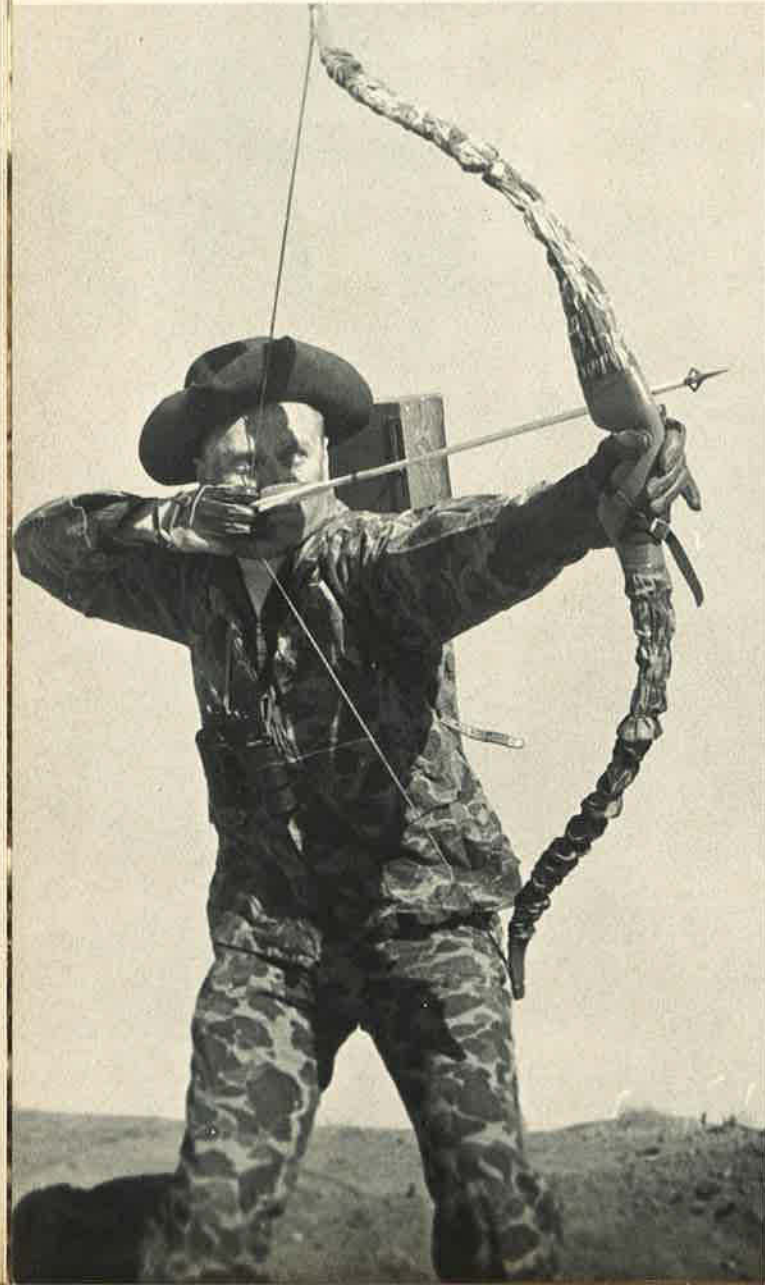
Hunting dangerous animals with a bow is acceptable provided you have proper protection and are covered in case a wounded animal gets aggressive.

One morning Ron was looking through the spotting scope and advised that three bull moose were browsing on a low ridge just above camp. I would circle the ridge and come up from behind while Ron positioned himself in the clearing at the foot of the hills.

An hour later I topped the ridge to receive a blast of wind and rain in my face. It wasn't good bowhunting weather. However, I had come this far and decided to go on. Another two hundred yards put me in position where I should be able to see the moose. They weren't in sight. I had good cover and moved along the ridge, carefully searching each ravine and clump of bushes. I was beginning to think they had gone when I heard an Army helicopter coming up the valley.

When the chopper was overhead, a large bull raised

Typical of the Alaskan terrain in which trophy animals of several species can be found is this wooded valley.



Clemmons believes in the value of camouflage for this type of hunting, but was nearly run down by a moose that failed to see him until it was almost on top of him.

from his bed in the thick brush. We spotted each other at the same instant. I froze, hoping he wouldn't run, and we stared at each other. The chopper left and the moose started nibbling at a succulent bush. When he turned to search for more snacks I drew to shoot.

The sixty-five pound Kodiak twanged and the Razorhead was on its way. At the noise of the bow the moose whirled and faced me. The arrow passed harmlessly along his side and buried itself in the moss. He bolted and disappeared over the ridge with me in hot pursuit. When I reached the edge of the slope, moose were going in all directions. They had been lying down just under the top of the ridge. I spotted my bull running across the slope at about eighty yards and quickly released an arrow which dropped far behind him.

"You gotta lead 'em," I thought as I nocked another arrow. This time I put the point on his nose, swung six feet in front of him and let fly. The arrow leaped from the bow and arched high, dropping to bury itself in the slab side of the moose. He was running in heavy brush and I couldn't determine the exact location of the hit. The arrow looked a little too high to be deadly. It seems I had hit him high in the hump, an excellent spot for a bullet not for an arrow. The bull headed toward the river and the heavy cover of the willows.

Ron said the moose passed him doing Mach 2. He marked the spot where the moose disappeared and we proceeded after the animal. When we arrived at the river, blood was apparent in large quantities on the ground and bushes.

Ron said he would go down river and locate a clearing where he could watch for the moose. I planned to follow the blood trail. I waited fifteen minutes to allow Ron time to get into position and quietly moved into the willows. In a matter of seconds I spotted a movement. The moose had been standing within a few yards of us watching his back trail. The brush was too thick for a clear shot, so I waited to see what the moose was going to do.

He was in trouble and having difficulty holding his head erect. He stood motionless for a moment and without warning, charged. I was astounded and caught flat-footed. I had close to a ton of mad moose bearing down on me and only yards away. Fire seemed to be coming out of his eyes. His horns snapped limbs as big as a wrist, as he threw his head about and raged. I didn't know if he was bluffing or had designs on my little pink body. Not being one known to stand on ceremony, I ran like hell.

He tired quickly and didn't pursue me very far. He went back to his retreat near the river. I waited a few minutes to regain my breath and recover from the surprise of his aggressive action. I realized how careless I had been.

Returning to the willows I moved more cautiously. It took several minutes to find him again. I made a circle traveling away from the place of our encounter and located him standing in a small clearing. He was too far away for a good shot. I eased up to the edge of the clearing until I had closed the gap to forty yards. When the bow twanged he turned his head toward the noise, but it was too late. The bright pink fletches glowed momentarily against his black side and disappeared into the rib cage. At first the arrow didn't seem to bother him. He took a few steps towards the river then collapsed in a thick grove of aspen.

I waited, smoked a cigarette, and approached the grove. He didn't move when I jabbed him with my bow, and I thought he was done for. I started to lay down my bow when I saw him blink. I jumped back, and the

moose tried to stand. When the arrow hit I heard a dull "thunk" and he dropped back to the ground. Later I found the arrow had completely penetrated the spinal cord.

It was all over, and I was relieved. I hate the thought of losing a wounded animal. I feel a hunter is morally obligated to follow and finish an animal no matter how dangerous it might be, or else don't draw in the first place.

The moose turned out to be a bull with fifty-seven-inch antlers, still in velvet. I have a feeling of awe and sadness when I do in a large bull. They are the most magnificent animals in North America and are so big and ugly they have a sense of stateliness about them.

There is a saying in Alaska, "When you pull the trigger on a moose the fun is over." This animal was wedged in the darnedest tangle of brush. It took the remainder of the day to butcher and pack the bull to camp. Each of us made five trips.

Later, approaching the area where I had killed the moose, Ron thought he had better check the remains pile to see if a bear had been working the area. As he neared the spot, he could see a bear had been there and had consumed most of the viscera. He noticed the moose hide had been pulled off into the brush about twenty yards away. He told me later he was standing there thinking about the bear, contemplating his next move, when he noticed the moose hide was breathing. It turned out to be a sleeping grizzly.

He couldn't determine which end was which so he fired at the center of the pile. The bear let out a loud roar and jumped to his feet. Ron shot again knocking the bear down only to have him get right back up. He was shooting a .30-06 Remington 760 which he had loaded with five rounds of ammunition. When he



chambered his fifth and last round he said he was becoming a little concerned. The brush was thick and the bear, as he found out later, was fifteen paces away. With the bear thrashing around in the thick brush, Ron was having difficulty in determining a killing spot. On the fifth shot the bear dropped for good. He was truly a fine trophy.

Several hours later I glanced at my watch. It was exactly midnight. I noticed the ground in front of the tent was white. I called to Ron to bring the flashlight. We discovered the white ground was glacier water. We were being flooded. We hurried back into the tents and gathered our more valuable belongings such as cameras, food, sleeping bags and clothing. The camp was located more or less on a point with Hayes Creek to our immediate south, Delta River to the east and Ptarmigan Creek to the north. Our only possible escape route lay to the west, toward the mountains. We headed in that direction. Soon we were cut off and surrounded by raging rivers and rising water. We had little choice but to work our way back to camp and hope the water didn't rise much higher. When we arrived I took the flashlight and waded toward the airstrip. There was a slight rise in the center of the runway none of us noticed before. We gathered our belongings and worked our way toward the island.

When we reached the island we were shaking violently from the cold. Our legs felt like stumps and it was difficult to stay on our feet. We found we had a dry spot about twenty-five yards wide, fifty yards long and shrinking. It was one memorable night we spent on that tiny desolate piece of ground. We checked the water level like every two minutes, until it started to recede. Suddenly we were very tired and crawled into our sleeping bags for some much needed rest.



Ron Miller, hunting with a rifle after failure with bow, took this grizzly on last day of hunt at fifteen paces.

Author apparently was not overly impressed with the size of this caribou, which was taken in the same area. Note the terrain, which is typical of Ptarmigan Creek area.

In the early hours of the morning I was aroused by a strange sound. Looking around, much to my surprise, I discovered we were surrounded by a large herd of caribou. Several of the animals were standing within a few feet, studying us. I tried to reach my camera case but it was several feet away. I tried to rouse Ron but he wouldn't wake up. The caribou milled around making strange grunting sounds, as though carrying on a conversation with each other. One inquisitive young bull approached my sleeping bag and sniffed curiously.

I could see nearly fifty animals and there were more in the willows. One sudden move on my part might have stampeded the entire herd and we could be trampled where we lay. There were several nice heads in the herd, but I couldn't get my bow without scaring the whole bunch. The herd grazed around us for nearly an hour and finally moved on.

I heard a plane coming up the valley and saw that it was Dick McIntyre of the Frontier Flying Service. As he approached I could see he was going to make a normal landing and I frantically waved him off. When he passed over I signaled him to land where I was standing. The next time around was better, but he was still a little short when the wheels touched down. Mud flew in all directions and the plane nosed forward but Dick kept it under control and rolled to a safe landing.

There were only one hundred and fifty paces of usable runway left. This meant he would have to take a number of flights, lightly loaded, to get us out. I marveled at the performance of the little Cub and was thankful we had the experience of the man driving it.

It took five trips to get the meat, Ron and me back to Fairbanks. We didn't salvage much in camp equipment. Most of it was gone or saturated with glacier mud. The runway at Fairbanks International looked good when it came in sight.

As I look back now I can't help but marvel at this strange and exciting hunt. We planned it at fifty below zero. In one hunt I took three animals with a bow, two of which made the Pope-Young Record Book. Ron took two rare and highly prized trophies on what was to be his last hunt in Alaska. We lost nearly everything and our lives in a last minute disaster. One thing you can say about Alaska hunting — it is never boring or uneventful. ●



The cook tent at the Ptarmigan Creek camp site looked like this shortly before rising water inundated the whole area.

FIFTEEN yards from a treed mountain lion, Betty Gulman stood her ground and got shot while waiting to shoot, but this is old hat for this Fullerton, California, housewife and new Oranco Bowmen Big Game Hunter of the Year.

This huntress has learned to wait with composure while fellow hunters record her form with a movie camera as she prepares to down her prey. In this case the target was an eight-foot, one-inch cougar she had been tracking for seven hours in the Los Padres National Forest in California's January heat.



Betty Gulman shows her elation over the Pope & Young record class rack of the caribou she shot in Alaska.

Mrs. Gulman became weary of being the camp worker, while others did hunting, so she joined in taking such game as this healthy bruin.



A HUNTING CADENZA BY A VIRTUOSO ON THE BOWSTRING

A Lion's Share For The Lady BY DONNA MEADORS

"The dogs were cold tracking and it started getting warm and rugged," she reminisces. "I was in good shape, as I had just spent seven or eight days and quite a few miles tracking javelina. I was really glad to have had that warm up, because I don't think I could have kept up with the men on this trip otherwise.

"The dogs were running. I just followed the sound of their voices over the open ridges. I was excited and knew I had to keep going no matter how tired I was."

The grit was in evidence when Betty Gulman first took up archery in 1956. Her husband, Robert, a general contractor, gave her a forty-five-pound straight-limb bow, a haystack and a pat on the back.

"I got tired, but I kept forcing. I figured this was the way to learn. Finally, I went to a sporting goods store and got a thirty-five-pound Abernathy," she says.

Interested first in tournament shooting, Mrs. Gulman progressed rapidly to champion class, until the CBH revised their rating system and she fell back to a class B group. She worked her way up again only to get shot down on another rating revision.

From the Abernathy she went to a thirty-four-pound custom Corky Johnson and 1716 Easton aluminum shafts. Then she switched to a Hoyt Pro Medalist. She likes the torque stabilizer and feels she gets a good release. Mrs. Gulman favors a conventional anchor — corner of the mouth, first finger — and a raised wrist in shooting. She shoots instinctively up to fifty yards and depends on point of aim at greater distances, feeling there is a greater degree of accuracy.

She advises that beginners work with light enough bows and get proper instruction. She began snapping after taking up hunting and thinks it may come from using a heavier bow. She is practicing holding in an effort to correct the habit.

The Gulman's yard houses them, their hunting horse and the blue tick coonhound dogs which they raise. The cougar hunt found them using their hounds as well as some black and tan and walker hounds belonging to their guides. The whole interest of the guides is in tracking and treeing the prey. This done they leave the field open to the hunter or open for the freed prey, Mrs. Gulman recounts.

When she turned to hunting she got a Jack Howard Gamemaster, and uses a forty-pound draw on all game, except the caribou she bagged in Alaska, when she felt

the need of a fifty. Her draw is 27-1/2 inches. She uses a number six Microflite arrow with the lighter bow and a number eight with the fifty pounder. She likes the Bear four-blade Razorhead.

"I feel like I have better penetration, better recovery and a better blood trail." The Bear bow quiver is her choice, as she finds it easy to take through the brush, hardy and easier to use when climbing.

After spending several years playing hostess, chef, busboy and bottlewasher on her husband's large, convivial hunting expeditions she decided to beat KP by taking to the bush. Hence the hunting.

"After you hunt and walk and don't get anything, you build up a tremendous feeling of anxiety and anticipation," she says. She must have been pretty edgy for two years. She began hunting in 1959 and made her first kill, an eighty-pound doe, in Utah in 1961. The next few years she populated her trophy room with records of twelve deer (she cleans them herself; her husband told her if she could kill them, she could clean them out), six javelina, one Spanish marino ram, one lion, one bear, one caribou plus fox, quail and ground squirrel and a carp.

"There is no feeling like it after you see the animal, stalk it and make a connection. Both Bob and I like the bow and arrow. You have to get closer to the game. Bob hunted one year with a gun and did not feel any challenge. There is no comparison between hunting with a gun and a bow. For one thing, you get closer to the game and have a chance to observe its habits. We make a point of knowing everything about our game before we go out to hunt. I think it is important to know the animals' habits.

"I find hunting tiring, but relaxing. I hate to come back once I am out in the field."

Mrs. Gulman and her husband hold California state records for their trophies, and between them have over fifty awards. Gulman is "happy to have her in the field. I am proud of her." He has been hunting for thirteen years and has racked up enough of a lead in the animal division, so he can afford to be generous. He is fond of telling about Daryl and Ev Briney, California state barebow champions this year. Mrs. Briney won it once before her husband, "so the pressure was on," Gulman chortled.

Her several years of experience did yeoman duty



Looking slightly disheveled but nonetheless happy, the lady lion huntress poses with her trophy after kill.



The California couple already finds that trophies are crowding them out of home and plan a new trophy room.

Looking decidedly unlike a grandma, the brunette displays mount of the Spanish ram she took with an arrow.



for Mrs. Gulman as she waited to kill her mountain lion. "He was in a bad position, so we managed to maneuver him around. Then they made me wait so they could take some pictures. I was fifteen yards away when I made my first shot. I'm not usually nervous when I'm shooting, but I was with the lion. It had taken such a long time to tree him. My first arrow went in the limb below the lion and the second arrow was in the heart." He fell to the ground, dead.

"Boy, did my knees shake. Bob and the two other fellows skinned him out. About three in the afternoon we started back. I used a big walking stick, held a sturdy dog by the leash and made the seven-mile trek back sort of pulled along by the dog. It took us fourteen hours round trip. I didn't wear my shoes for a week after I got back."

The petite brunette is full of enthusiasm over future hunting trips and bubbling over with stories about their Alaskan trek, where she and her husband finally bagged a bird and two caribou after a series of misadventures.

"Needless to say, we hunt every time we can get away. We met a man who was a guide in Alaska and offered to work for us on our planned fourteen-day trip up there. We even had two references on him. We were after moose, caribou and Alaskan brown bear," she relates.

When the Gulman duo got to Alaska, their guide was totally unprepared. They had to wait a few days while the guide rounded up a plane. He managed to find a Super Cub but it developed that he hadn't flown one in over two years.

"He almost cracked up the first time he took off with us and constantly referred to the plane as a 'little 'ole black coffin'. I closed my eyes on landings and takeoffs."

They figured it cost them \$3,100 to bag a ptarmigan, and that was as well as they made out after eight sorties into the field with their Alaskan wag.

The people at the King Salmon Inn, on the peninsula where they stayed, treated them beautifully, but the hunting was something else again. "If it wasn't one crisis, it was three. This guide wasn't experienced in helping archers and was continually landing where he shouldn't. At one point he left me with my bow and arrow and a box of matches, while he flew off to get Bob. I kept wondering what I was really going to do out there with a box of matches. Another time he had us hiking six miles to a lake after hunting all day. And that is some fun, chunking over the soggy tundra clumps," she continued.

Finally, Denny Thompson, an old Alaskan hand, took pity on the Gulmans after their plight had been noted by the people at the inn and the other guides. Thompson and his assistant volunteered their time, after the first contract was terminated, so the California family would not leave with bad feelings about getting the bird and being taken by their first guide.

"We both got our caribou our first day out with them. This comes from having an experienced guide and one who knew what to do with our type of hunting. He picked an area where we could have some cover, for one thing, instead of sticking us out in the middle of the tundra as happened before. We both made one-shot kills.

Continued on page 60

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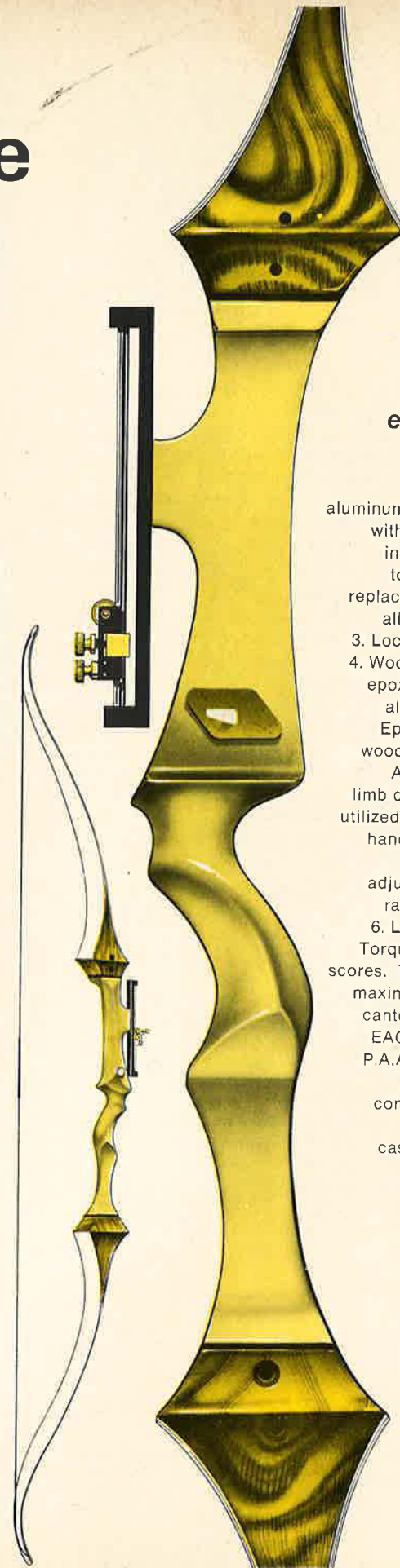
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Profile Of A Champion

Of all the champions crowned in the various classes of the 22nd annual National Field Archery Association Tournament in Jackson, Mississippi, Men's Open Barebow titlist Frank Gandy would have to be regarded as an exception rather than the rule.

For Gandy not only shot a perfect 560 animal round on his way to the coveted national championship, but the thirty-year-old Bartow, Florida, maintenance mechanic accomplished the mission with the help of a Bear HC bow that had originally been made for someone else.

"This fellow ordered it through a local dealer, but later decided he didn't want the bow, so I tried it and eventually bought it," explained Gandy after duplicating Ed Rhode's perfect animal round while beating out Dave Hughes and Dick Gilley for the Open Barebow title.

It should be noted here that Gandy's perfect round also differed from Rhode's in one other important respect, for the latter could do no better than second place in the final Men's Open Freestyle standings behind Stanley Warner, the North English, Iowa, sharpshooter.

Gandy was behind for only the first round of the field competition. After earning a razor-thin lead going into the hunter event, he proceeded to pull away for a final margin of 111 points.

Hughes, a promising youngster from Dallas, Texas, outshot Gandy, 526-524 for the first-round lead in the field competition. Gandy came back the second day and shot a 527 while Hughes was settling for a 524.

This gave the Floridian a 1051-1050 lead over Hughes, with Gilley in third place. The determined Gandy set the rest of the pace.

In the hunter competition Gandy posted a 532 score for the first 28 targets, then added a 548 the following day for an aggregate 1080. Meanwhile Hughes was scoring 525 and 513 for a 1038. This left

Gandy's style is reflected in this series of action photos taken during the final moments of the tournament. Note anchor and three-finger hold.



FRANK GANDY



him on the short end of a 2131-2088 count going into the animal round.

At this point Gilley, a resident of Temple, Texas, trailed Hughes by 33 points in third spot, but he finished strong in the animal round and lacked just one point of forcing a deadlock for second place.

While Gandy was firing his perfect 560 score, Hughes was slumping to 492 and Gilley was coming through with a 524. Thus, the champion totaled 2691, while Hughes was next with 2580 and Gilley finished with 2579.

How had he felt about his chances prior to the start of the big national event? "I knew I would be shooting against some real tough competitors, including defending champion Cliff Necessary," Gandy said, "but I also felt I was shooting pretty well and thought I might be able to do something if I took my time and concentrated." As things turned out, Gandy didn't have to worry about Necessary, who placed out of the running.

Following his victory Gandy reminisced that he first was introduced to the sport by friends Doc and Doris Nevin of Bartow and began shooting in 1959. Incidentally, he started shooting instinctive. He shifted to a sight temporarily, decided he didn't like it and switched back to the barebow style.

Frank and his wife, Margaret, who is a Class C barebow shooter, have three daughters — Beverly, 10, Trina, 7 and Judy, 6. He hopes they also will become better than average archers.

As for himself, he had proved prior to the national tournament that he ranked right up there with the best of them. A member of the Bartow Bowmen Club, where he shoots the P.A.A. round quite often, plus the Ridge Archery Club and the Lakeland Field Club in Lakeland, Florida, Frank started making a name for himself just five years after taking up the sport.

In 1964 he won the Florida target championship, a

tournament he also copped in 1965, 1966 and 1967. His best American round was a commendable 768. He also won the Florida State field archery championship this year, shooting scores of 519 and 540 for the two field rounds and adding totals of 266 and 276, respectively, for 14 targets on the hunter and animal rounds.

The Gandy trophy case also includes the 1967 South-eastern field championship, which he captured with 532 and 542 field rounds and an animal round of 534, plus the Florida Professional Archers Association title he garnered at Pioneer Park in Bowling Green, Florida, by shooting 275 out of a possible 300.

Thus far Gandy hasn't been able to find enough time to get out hunting, but this is something he's going to make every effort to do in the future. He believes every archer should be active in this particular phase of the sport.

Frank also has some very definite ideas and advice for beginning archers. "It's most important to have proper instruction, but you shouldn't take advice from too many people, either," says Gandy. "Have faith in the one who is teaching you, practice as often as possible, purchase proper equipment, and shoot whenever you can. If you want to be a serious archer, you have to be serious about all aspects of it and, by constantly practicing your shooting form, the high scores will eventually come," he says. Being the fine champion that he is, Gandy also stresses the fact that an archer, first and foremost, should be a good sport, regardless of whether he is winning or losing.

When queried about his bow, Frank said he has tried several bows, but feels the HC 30 is the smoothest one he's ever used. "I highly recommend it to any archer interested in perfecting his or her skills," Gandy told the writer. "It is a very well made piece of equipment and, properly tuned, there should be no reason why excellent scores cannot be obtained."

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Gandy takes his archery seriously, affording each shot individual consideration and concentration in spite of the crowd and similar disturbing influences of contest.

Gandy calls his own bow very stable. With the stabilizer attached he has toned down a lot of mistakes and been able to get away from a great deal of left and right shooting. If further testimony is needed, all one has to do is ask either Hughes or Gilley, who finished second and third behind him. At not time during the pressure-packed five days of the National Tournament did Gandy's pride and joy let him down. The bow Frank shoots is a 69-inch Bear HC 30, 38 pounds at 28 inches, and the 21-inch stabilizer he has attached is regular Bear catalogue equipment.

The writer also learned that the new champion makes his own strings of 10-strand dacron. His arrows are Easton xx75's, 1913's cut 27-3/4 inches, with three-fletch 3-1/2-inch white feathers cut low at a slight four degree angle.

The rest of his equipment includes a homemade clicker specially designed for a barebow shooter, a Bud Pierson rest, a homemade tab, a plastic arm guard and a Carlisle quiver. As far as Gandy is concerned, there is none better. After all, it carried him to a national championship and that was the farthest thing from his mind when he gave in to the Neevins' prod-ding and took up the sport eight years ago.

Possibly Gandy may never again realize the thrill that goes with winning a national championship in a star-studded field such as the one which gathered in Mississippi. There are too many things that can happen, but you can bet that the deadeye from Florida will at least be trying and, despite the fact he's already reached the top, he'll also keep on working and practicing to sharpen his skills.

The 22nd annual renewal of the blue-ribbon archery event had to go down as one of the finest in history. It lacked for nothing in the way of thrills and outstanding performances. Everyone was in complete agreement over the fine job turned in by the host Rebel Archery Club of Jackson. ●

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610 E. 30th
Spokane, Wash. 99203

I just received a dozen of your arrows and was most pleased with them. I would like to order two more dozen. I am also recommending you to all my friends.

Eddie Snyder
833 Durward St.
Chula Vista, Cal 92010

I was greatly satisfied with the dozen arrows you sent me. Everyone was amazed at the price I paid for them. I think you do a great job and I have recommended them to many persons.

Byron Greene
4400 N.E. 48th Terr.
Kansas City, Mo. 64119

Just received set of arrows previously ordered and like them fine.

Bill Phillips
2512 Magnolia St.
Texarkana, Texas 75501

After trying a dozen of your six dollar arrows I found them to be very satisfactory and up to par on all claims.

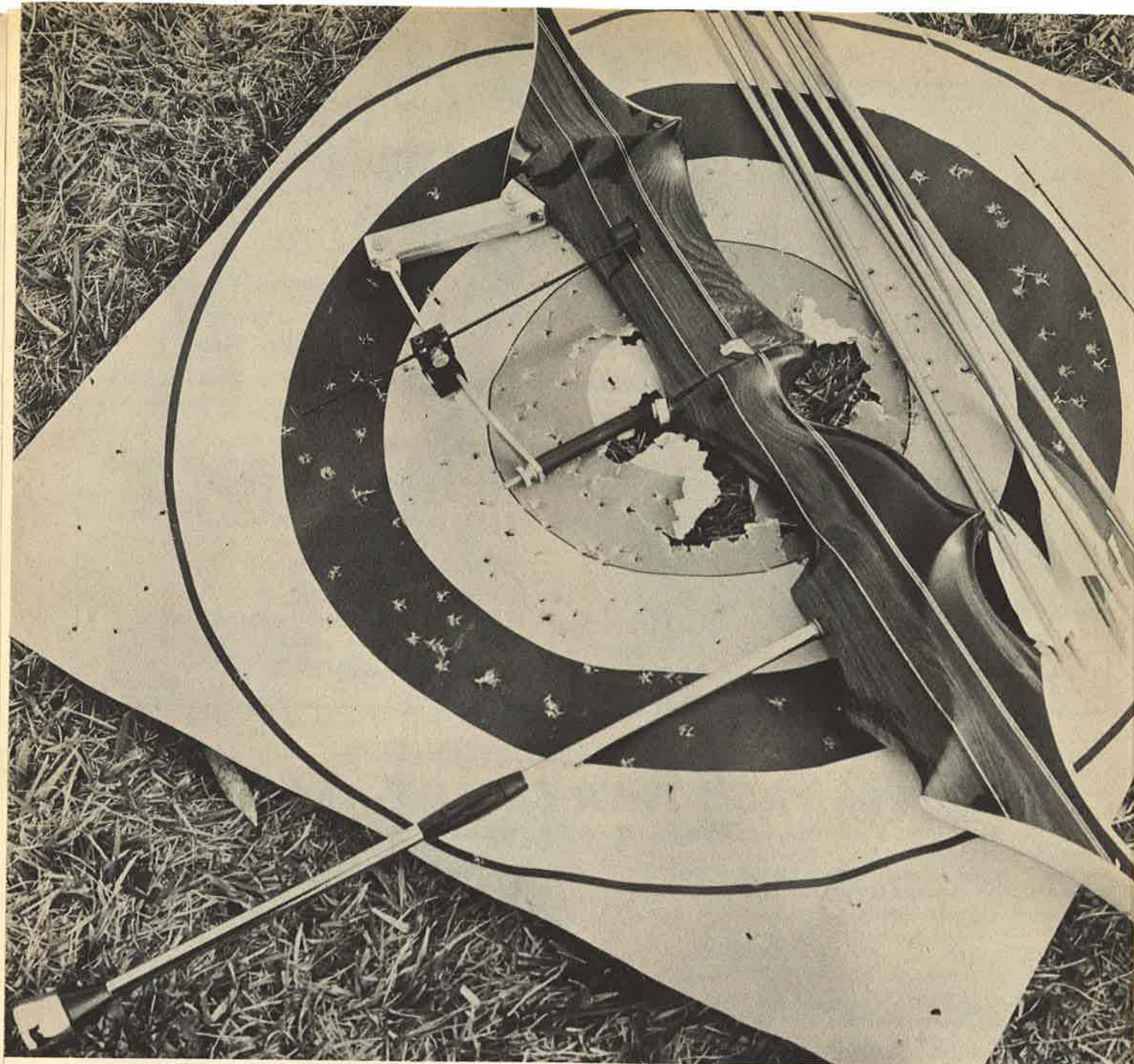
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Your "Scratch & Dent" sale ad of Hunting Arrows was given to me by a friend who was well satisfied with his purchase. I would like to put in an order for 2 dozen.

Martin Syverson
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315 S.E. "M" St.
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Howatt's DEL REY

They Call This Beauty The
Bow With A Personality; It
Shoots Well, Too!

By C. R. Learn

NOT too long ago, if you wanted a bow you went to the wood yard, purchased a yew stave and made your own. It was called a self bow and left a great deal to be desired, but it was functional.

The bows of today go far beyond this. They are not only functional but become works of beauty. Take a look the next time you go into your local shop and notice the lines of the different bows. When you finally make a choice to buy that ultra piece of equipment to drill your shafts into the gold of the target face, what will it be? Will you look for a bow with clean lines and limbs, one with a flair for ar-

tistic value as well as the utility of a fine shooting piece of equipment?

If you decide on the latter, take a closer look at the Howatt *Del Rey*. This bow, made in Yakima, Washington, has shooting ability built into the bow.

The lines of the bow are a bit different. True, it has the usual handle, riser and limbs but they have added one thing more; a personality.

The beautiful Brazilian rosewood in the long handle riser hasn't been put in a forming jig and sanded as many are today. Howatt does use sanding wheels of their own design to put the many curves in the riser

Concentration is apparent as Miss Ayers holds on the gold prior to her release. Aluminum dome of college's gym appears prominently to rear.

but when they have finished with the last of twelve or fourteen coats of finish, hand rubbed and polished between each coat, the final product makes you stop and look.

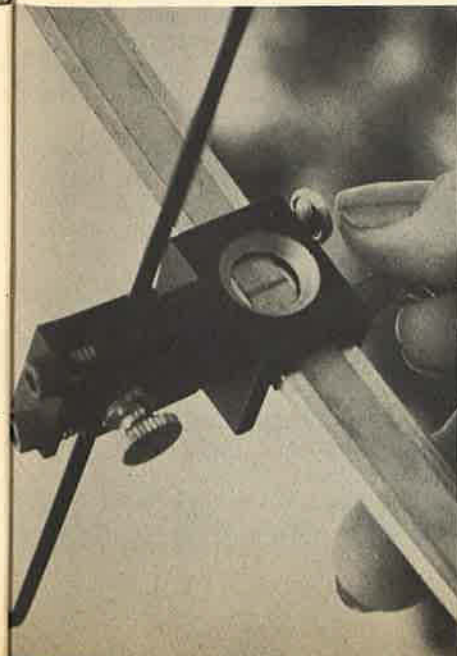
Looks aren't everything since a bow is designed to shoot well or the looks mean nothing. The *Del Rey* has shooting capability, too. The tapered hardwood laminations in the glass-covered limbs offer smooth draw and a good arrow cast. Smoothness is important in target archery since the bow will be shot several hundred times during a meet or tournament and, if it is rough, it will wear you down.

The bow was encased upon arrival in a black leather-lined case that comes with this beauty. I unzipped the case and drew out the bow. The limbs were white glass, the riser of rosewood which gives it strength and beauty and the handle, one of the more important features of any bow, fit like it was made for my hand. It felt natural and the balance was good.

When I strung the sixty-nine-inch bow and held it out at draw length it balanced in my hand, no forward or back tilt. The thirty-four pounds pulled like silk, very smooth with no stack.

The next morning I had it out on the short thirty-yard range on the side of the house and decided to let

Yardage is set with the thumb screw being held. Sight bar is adjusted by means of allen screws on outside and locked with the knob on the bottom.



fly a few shafts. I have some Easton X7s for a thirty-five pound bow and felt they would be fine for this bow. Six shafts were 1814 X7s and six were 1816 X7s.

Since I hadn't mounted a sight yet, I shot barebow, using my hunter technique modified to conform to the target style.

The first shots went right where I wanted them—in the bale and close to the gold. I used a thirty-six-inch face on the close yardage and after a few rounds I found that the bow had the capability of getting an excellent group, when I performed to its standards.

Back in the file of attachments

was a new type of bow sight that I had been waiting to test along with a target bow. The *Altier Tournament Master* bow sight is radical in its approach too, so the two items should give a good accounting when put together.

I would have to drill three holes in this work of beauty to mount the sight and I drilled but it hurt every minute. The sight used a principle not new to the tournament pistol shooter who competes in national matches but it was the first time I had seen this principle applied to a bow sight: an extended sight bar.

The sight has a curved radius

and along this the sight moves, keeping the sight pattern always in position.

The first mount I tried was intended for mounting on the face of the bow, between riser and string so that is where I drilled. The bottom post was put in place and the upper bracket installed with the screws supplied. The sight looked a bit high when mounted but that was the proper position. I took the bow out and placed the sight bar in position. This sight bar is a long, slim piece of spring steel with a point or pin on the front and a peep on the back. The principle is basically the same as that of a rifle or pistol in that you sight through the back peep and align the front pin with the target. The longer the span or distance between the peep and pin, the more accuracy and closer grouping you should get.

Not too long ago I had the good fortune to meet several of the top pistol shooters in the U.S. Navy and the sights they had on the

competition .45 automatic resembled this Altier a great deal. For competition shooting they have put on a top ramp with an extended sight bar, similar to the Altier in that the farther apart the two points, the greater the accuracy obtainable.

The Altier came supplied with a variety of sight bars, including three six-inch spans with small, medium and large peeps in the back and pin in front. There were two nine-inch bars with fine and medium peeps and one twelve-inch length with a fine red pin in front. The Altier company has experimented successfully with sight bars as long as two feet.

I selected the twelve-inch bar first, put the sight clear up to the top of the radius bar mounted on the bow and went back to the thirty-yard distance. The top bracket mounts on the bow and has a lock screw which allows the bracket to pivot when loosened. The bottom mount has one set screw to mount into the bow riser and has a selec-

tion of threaded bolts to choose from according to your style.

I used the long bolt, which has a piece of rubber tubing on it and an adjusting screw to hold it in place. This allows the screw to be turned tighter or looser to adjust the sight for either high or low anchor. Everything was solid and in place, I nocked an X7 and came to draw. It didn't look right. I have shot this distance many times; it is the longest yardage I have at home and it looked much too high. I had to find out so I came to draw again, lined the peep on the pin and on the gold and sent the first shaft six inches into the plywood backstop and twelve inches over the top bale. It hadn't been right!

This was a bit disappointing since I wanted to try this sight principle, but rather than give up and quit, I sat down and traced the lines of the bow onto a piece of paper, enclosed this along with an explanatory letter to the Altier Company in Honesdale, Pennsylvania. Two days later I received another sight that would and did fit the Del Rey bow.

This was the answer to all the problems, although the front sight mount required three new holes to be drilled on the back of the rosewood riser. The diagrams with the first sight were similar to the bow in hand but if I had sent the letter to Altier first, I wouldn't have had to drill the second set of holes.

With the extended front sight in place, the long twelve-inch bar in the keeper and it was back to the bale. This time I took more time and first drew the bow several times to make slight adjustments to the sight to get it to conform to my style. It is designed for this, and by running the bottom knurled bolt in, you can adjust for a high anchor point and by moving it out you adjust for a low anchor. I was shooting under the chin, so adjusted accordingly.

When the sight picture looked right and I could come to the same point each time I locked down the side adjusting screw which allows the sight bar to be moved toward the center and also to adjust the angle of the sight to the target.

At long last I placed an X7 on the string, came to draw and settled in on the gold. I wasn't worried about hitting the center but merely wanted a group to adjust the sight and system so I could try the bow-sight combination. The first arrow zinged down the range



College instructress uses her thumb at position of wisdom tooth as her anchor, holding before her release.

and plopped at six o'clock in the red ring. Good, it was on the bale. I continued to shoot, making a small adjustment with the allen wrench from time to time to bring the group right or left. It really will tune in very fine, and I later brought the entire sight system down a little to raise my group into the gold.

My groups continued to tighten up and the bow was performing beautifully. The draw was smooth with no roughness on release. When I finished this first satisfying session with the bow I noticed I had shot for over an hour and hadn't noticed I had left off the stabilizer! I never have used one so hadn't missed it.

During my next session with the bow I selected the longer stabilizer of the two sent with the bow for the test. K. M. Barnes of Damon Howatt Archery, Incorporated, had sent one stabilizer 21½ inches and one 17½ inches to be tested with the bow. With the long stabilizer on I noticed no appreciable difference. I replaced it with the shorter one and this felt better to me.

No one can make a universal handle that will fit everybody, but this one gave me a good grip on the bow but still not enough to torque it. I tried using a high wrist, flat heel on the handle and all styles of shooting but finally ended up with a light grip to give me the best feel of the bow. It seemed to help my grouping, too.

During the unfortunate job of drilling the riser of the bow I noticed the many layers of finish on it. It was hard and paste wax was applied to remove the fingerprints and to give the finish a bit more protection.

The long handle riser has three sections of rosewood with white maple spacers in between. This combined with the many curves and high finish of the bow make it stand out.

Not satisfied with just my opinion, I decided to give this Del Rey and the Altier sight combination an acid test. I called Miss Mildred Ayers, chairman of the women's physical education department at Palomar Junior College in San Marcos, California. Miss Ayers has seventeen years as a college archery instructor. To say she is dedicated to the sport and has a lot of drive may be indicated by the fact that Palomar Junior College is the home of the National Collegiate Archery Coaches Association national archery team champions, of which Miss Ayers is the coach.

She said she would be glad to wring out the bow a bit, so I took it north along with the sight, different sight bars, two stabilizers

and threw in my X7s for the test.

Miss Ayers chatted with me for a few minutes while I brought out the tackle. I handed her the information sheet on the Altier sight, mentioned how I had worked with it and asked for a good test on the tackle. She said she would hand it around among the varsity archers and to the second year students.

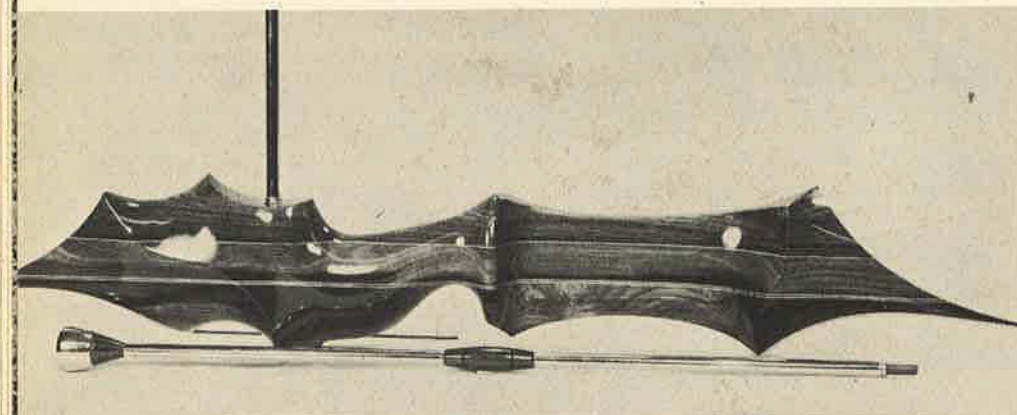
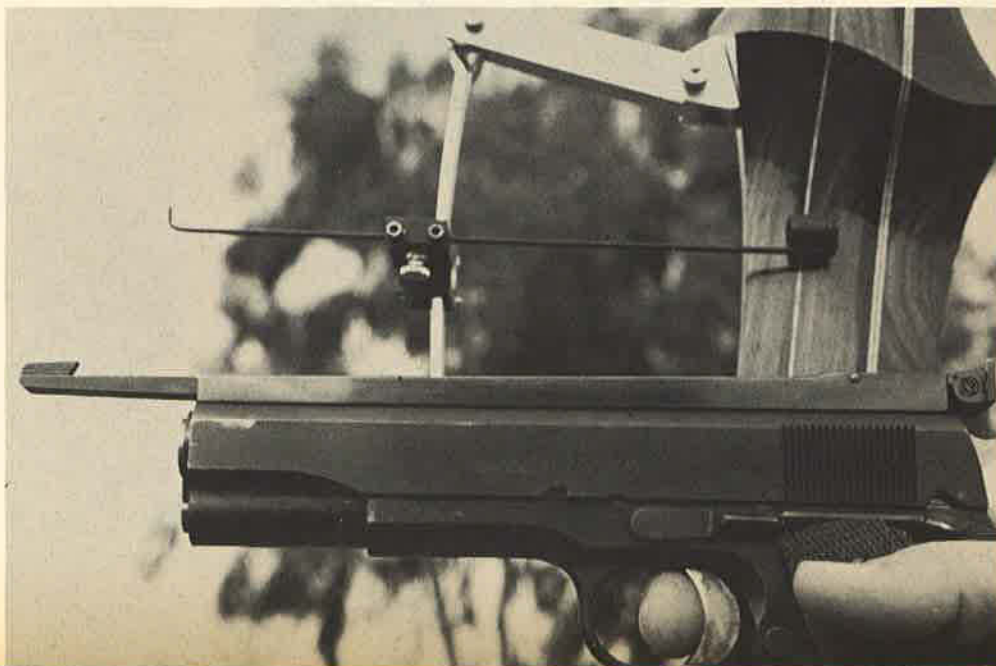
At the end of the week I headed north again to see how the tests had developed. Miss Ayers spoke very highly of the equipment and it had been used and tested every day and on several nights when some of the archers had taken it to a lighted range to work with it. They were unanimous as to the smoothness of the bow, its draw and release and felt the speed was about normal compared to their bows. I had asked them to try it at long ranges but they can only shoot sixty yards on the campus due to other sports equipment.

They liked the Altier sight, since it seemed to solve a problem that was coming up. The competition judges are starting to ban anything on the string but the nocking point. No kissers, peeps or such. With the Altier you have the peep and pin but not on the string. It gives a peep similar to that of the string and a pin on the front that will give the same two reference points.

The sight did give them a bit of trouble, since it was handed around

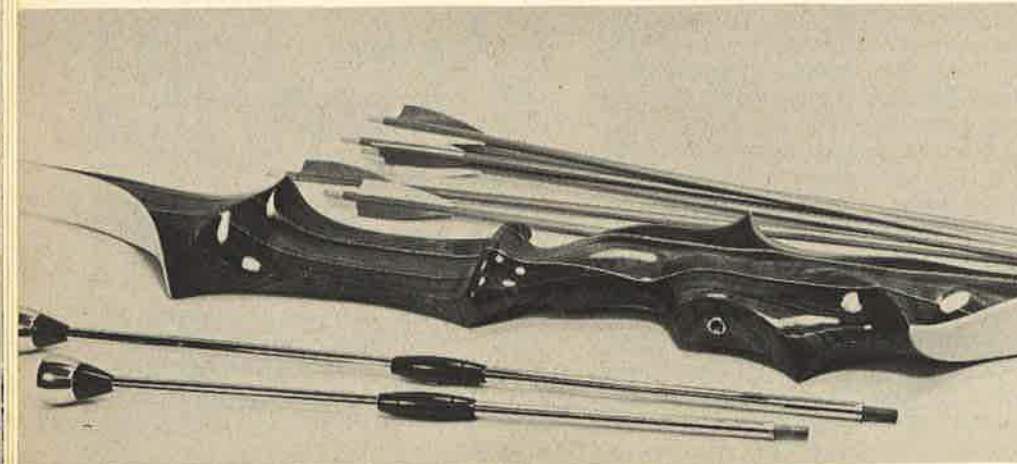
Continued on page 85

The Altier bow sight is compared with a Match .45 competition automatic. Extended sight bar on the pistol is to afford longer sight picture. The same principle applies to bow sight.



The contours and finish of Howatt's Del Rey model results in the Bow with a Personality. Note the three white maple spacers in the rosewood riser.

All one needs to hit the targeteer trail: Howatt Del Rey bow, special stabilizers, set of matched arrows.

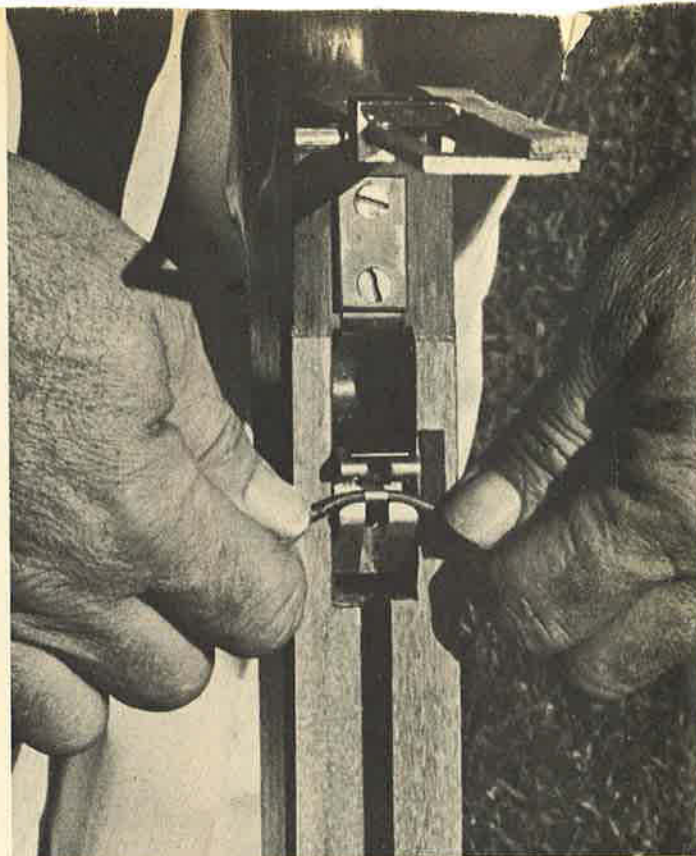


GEORGE DID IT

By George Millard



They Laughed When George Gurik Entered The Nationals With His Home-made Innovator, But He Won His Every Event!



Way back in 1965 George Gurik of Moline, Illinois, showed up at the National Archery Association tournament in Lafayette, Indiana, to face a field of Bailey type crossbows held by some experienced shooters. They all tended to snicker up their sleeves at Gurik's equipment.

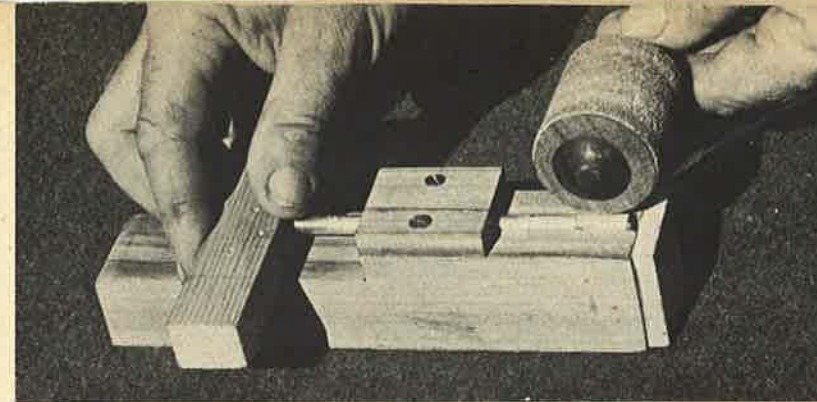
"That crossbow won't shoot very accurately." "Not enough string drag." "That recurve bow is too flimsy." "Shooting through a hole in the bow. It won't work." By the end of the meet the skeptics had Gurik's bow under the microscope. Something good was happening somehow, since George was winning every event he entered. Since turning to crossbow shooting from longbow shooting just three years ago, George has won every tournament he has entered and broken records each time. At Greene, New York, he recently had to break his own records.

Gurik set a new record for the Quadruple American Round score with 360-2958, 104 points higher than the old record of 360-2854 which was set in 1955 by Paul Eytel at Oxford, Ohio.

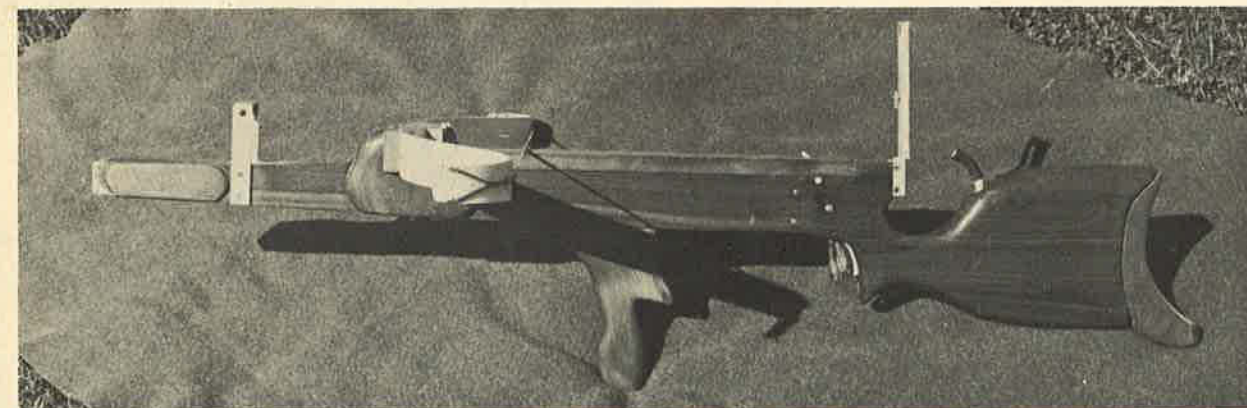
During Gurik's assault on the quadruple American he also set new records for the triple American with 270-2216, the double American with 180-1488, and the single American with 90-752. He made new records at intermediate distances: sixty yards with 30-244, again beating Paul Eytel's 1955 record of 30-242; fifty yards with 30-252 besting the 30-250 also set by Eytel in 1958; forty yards with a record 30-268.

Not content with the national scene Gurik whopped through the International Round with 90-803, according to my scorekeeping a new world's record. It broke his old score of 90-749 which he made in 1965.

Gurik and I have been good friends for the last three years when we both became interested in cross-



FAR LEFT: In this design, the bow's aluminum sleeve serves as a centering mark on the string. LEFT: The nock is tapered on one side by use of a small sanding drum. BELOW: This is Gurik's pride and joy, which was designed for purpose of upping scores.



bow archery. (For those readers in the audience who are not familiar with crossbow targets, may I explain that they are only 24 inches in diameter instead of 48 inches and they have one-fourth the area of the long bow target.) He is a very modest man and does not flaunt his ability and trophies. When I said I wanted to write about his talent with the crossbow he urged, "No, don't write about me. Tell about how I make my equipment so other archers can improve theirs." Gurik, a professional carpenter, thinks his fantastic shooting record can be attributed to his innovations on the home constructed crossbow. I do agree that his ideas are excellent, his construction almost faultless. I have been a student of his for the past few years and set a few records of my own. Whenever Gurik and I are competing against each other, as we do several times a year, I am unable to touch him. This must be due to his ability, since we are using comparable equipment.

Gurik had been a longbow archer for many years, making his own bows, strings and arrows. A chance meeting with Colonel Floyd Lien (see BOW & ARROW March-April 1966) who lived in nearby Rock Island, Illinois, aroused an interest in crossbows. George then became very interested in the art of crossbow construction. Correspondence with Fred Isles, president of the National Crossbowmen, the largest crossbow organization in the United States and George Stevens, inventor of the repeating crossbow and founder of the American Crossbow Association, brought to his attention the variety of crossbows and their constructional details.

Quite a few years ago H. L. Bailey developed a crossbow which was so accurate that he was issued a patent (number 2,500,509). Plans for this Bailey type crossbow are available from The National Crossbowmen, 10 Arlington Road, Cranford, New Jersey, for

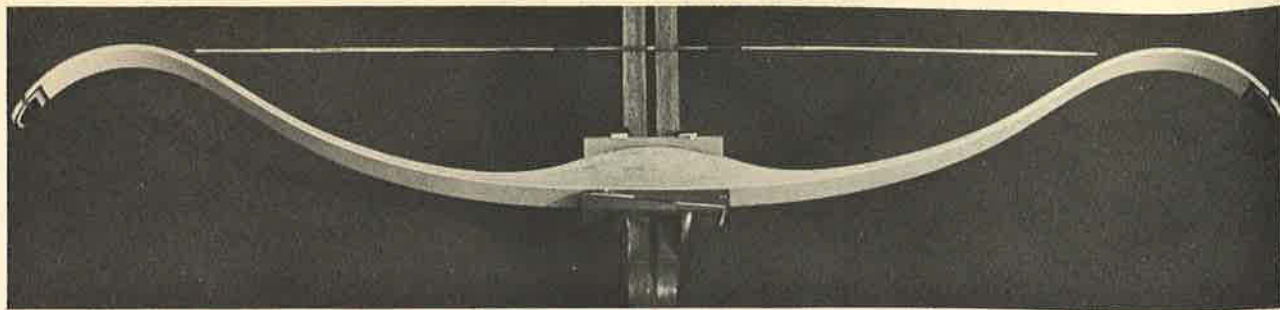
\$5.00. This includes a full scale drawing and a book of complete instructions. At the 1965 National Archery Association tournament in Purdue University, every crossbow on the line was a Bailey type, with the exception of Gurik's. Some bows were originals having been made by Bailey himself over ten years ago.

The 1965 was my first national tournament and I was eager to see all of the equipment so I could get ideas on how to improve my own. I was intrigued with Gurik's beautifully constructed crossbow. Other more experienced shooters remarked unfavorably seeing his equipment. By the end of the tournament most of the shooters were asking George questions about his equipment. He had won every event he entered. This newcomer to the sport had shown up the old experienced shooters with his new ideas in crossbow construction.

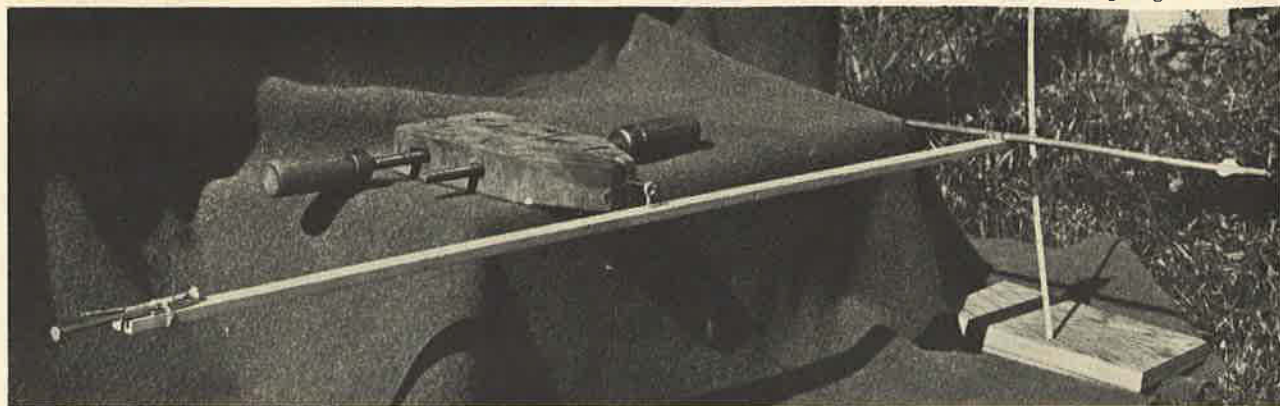
Gurik likes to work with wood (he built his own home) and usually selects walnut for his stocks. Any hardwood will do as well. Even laminated woods used for stocks work well, having less tendency to warp through the years. He makes his stocks with a rather high comb to the butt part of the stock. This allows the head to be firmly held against the stock in all positions for the changes in sight position. Most crossbows have a palm rest on the forearm of the stock to help steady the weapon. Gurik designed his grip so it is held like the grip on a sub-machine gun. He claims this gives a steadier hold than the palm rest.

The string catch and the trigger release on his bows are like Bailey's, but he has some novel methods that make it easier to adjust the trigger to the type of pull you desire. The sights are adaptations of several varieties and are simple and sturdy with adjustments for windage and elevation in small increments.

The most striking feature of Gurik's crossbow is



ABOVE: The bow hole for the arrow is meant to eliminate any twist at the ends of the bow. BELOW: This homemade balance is an accurate way of weighing his arrows.



the extremely recurved bow, which he makes himself. Most crossbows have bows of straight fiberglass or slightly curved laminated wood. We know that a recurve bow has greater thrust for its size than a straight bow.

Notice the design of the flight bows. Gurik has designed his own form for his bows and clamps the bow tightly with clamps of his own design. Between the rubber strip and his clamps he places a steel strip when clamping the bow to the form. This steel strip gives uniform pressure to the bow throughout the complete length. There is no variation of pressure spots as is usually the case when the clamps are tightened.

The bow form is placed in his special curing oven for the setting of the glue. The oven is a simple one. He added a section of pipe to his furnace and placed the form in the pipe. The end of the pipe is closed and the heat is kept even for the desired length of time, with no further attention necessary.

Most older crossbows and some modern ones mount the bow an inch or more below the top surface of the stock. This reduces efficiency. The farther the bow is placed from the top of the stock the greater the side pressure on the string. The greater the pressure on the string, the slower the action of the bow and the greater the wear on the string. Mounting the bow at a slight angle helps to eliminate the drag effect, but places a twisting action to the tips of the bow.

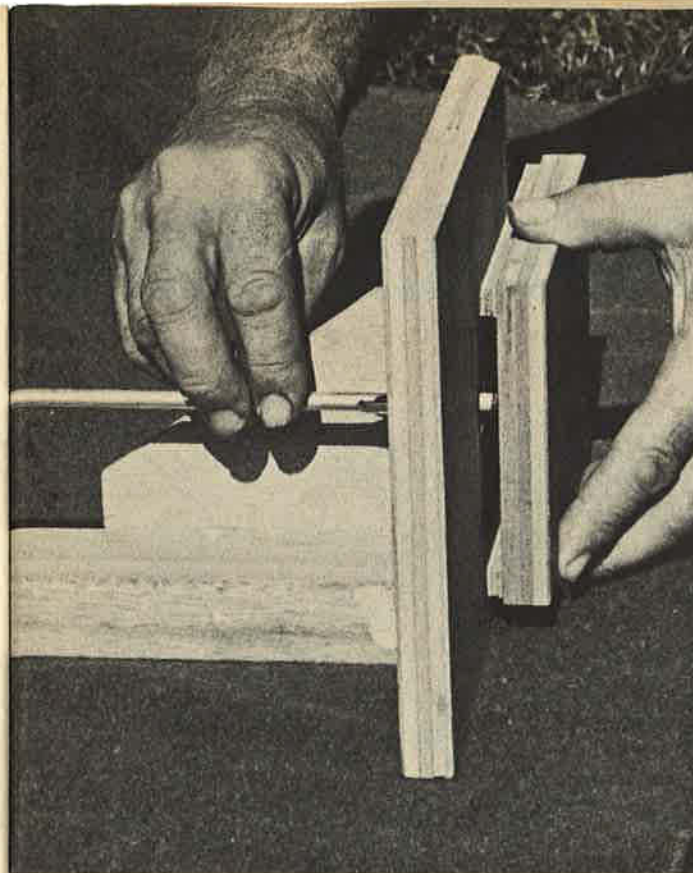
Gurik solved both problems by mounting his bow from the top of the stock and cutting a hole in the bow for the arrow to pass through. This eliminates any twist to the ends of the bow as it is at right angles to the top of the stock. By judicious planning, the depth of the bow insertion into the stock is made so that the string just touches the track. This reduces the drag to a minimum and increases the velocity of the bow.

There must be some drag to the string of a crossbow. The amount of drag still is being debated. String thickness seems to give the best results.

Since the stock of a crossbow is an inch or more in width, this is a lot of surface friction. Gurik reasoned if he could eliminate the friction except for a small strip it would increase the velocity of the arrow. This he did in a very simple manner. He tipped the bow slightly. This raises the string and allows it to touch only one edge of the stock. This edge would cause wear if it were to abrade the string, so the edge is made very smooth.

The part of the string that comes in contact with the stock is built up slightly with a small plastic sleeve. This is made by wrapping monofilament fishing line around the string and then melting the monofilament to form a solid sleeve. This prevents wear on the string. After a few shots the plastic has a small groove in it which helps keep the string in the same position each time it rides down the track.

Most crossbow strings of the past were made thick and strong so that they would not break easily. Robert Breneman, a former national champion, is using a string over ten years old. He merely changes the serving on it when necessary. George Gurik theorized that the thinner the string the better the bow would shoot. I made the mistake of making mine too thin and broke two of them at Greene, New York, during the National Archery Association tournament. The string must be thin to get the maximum velocity from the bow. A thin string will contact the nock of the arrow lower than a thick string will. This allows you to set the arrow slightly lower in the groove of the stock and gain added side support at moment of release. The string must be strong enough for at least five rounds.



LEFT: The sandpaper block is rubbed over the end of the shaft for that chore of final shaping for top accuracy.

BELOW: Gurik demonstrates the novel submachine gun grip, which he designed to give him a steadier hold on target.



When drawing the crossbow the string must be brought straight back to the same position as it was in the braced position. If there is excessive string drag the string will roll as it is being drawn. After a few shots a string develops a depression where it thrusts against the arrow nock. This depression must be in the same vertical position each time. If not, the contact with the arrow will vary from shot to shot. Also, at the moment of release, the string is compressed by the inertia of the arrow. This compression will not be the same if the string is rotated between shots.

I had tried putting a brass sleeve on the string in order to get a hard surface and one that would not change the compression pattern with each shot. The brass sleeve, while not very heavy, did cause a great loss in velocity. The arrow began striking two feet lower on the target.

Gurik succeeded in putting a small aluminum sleeve on the string. This sleeve is placed at the center of the string where the string contacts the arrow nock. The use of aluminum is a success. It is light, thin, hard and smooth, and gives the arrow nock the same hard, smooth thrusting surface each time. The same principle could be applied to long bow strings with a possibility of increasing accuracy. The sleeve is firmly served to the string to prevent moving and is marked so the same surface can be placed uppermost each time. It also serves as a centering mark on the string.

The sleeve must be polished well both inside and outside to prevent wear. If the string should break the aluminum sleeve will be propelled with a velocity greater than the arrow and there is no way of telling where it will fly. When my strings broke at the last tournament no one was injured by the sleeve, but pieces of the string went several yards to the left and right of my position.

The plastic nocks are all right for longbow shooters where the thrust is over a long distance. With the crossbow there is a strong violent thrust against the nock for a short distance and the nock tends to deform slightly. Any deformation at the moment of release will give a faulty cast to the arrow. Gurik solved this problem by making the nocks of hard maple dowels. These dowels are available at lumber yards and some hardware stores in sizes approximately the diameter of the arrow shaft. He cuts the dowel to the length he wants for the nock. About half the length will be inside the arrow shaft. He turns this to size for a tight fit inside the shaft by using a vertical drill press and a sharpened file. The area remaining outside the shaft is turned to size the same way. After shooting a few of these hard maple dowel nocks he found out they were not hard enough. So he glued a piece of formica to the end. This seems to be the best solution. The process of gluing the formica to the dowel does not always result in a perfectly square surface to the arrow shaft. This problem has been solved by the use of a jig that holds the arrow while the end of the nock is made square to the shaft. The arrow is fitted in the jig and a fine grade sandpaper block is rubbed back and forth across the end of the shaft.

The nock of the crossbow arrow is tapered like a plastic nock. In order to get this taper equal and even on each side of the dowel nock Gurik devised another jig. This holds the nock while tapering is done by a small sanding drum in a drill press. The nock is inserted into an arrow shaft size tube fixed to a small block. The shaft is inserted into the jig and one side of the nock is tapered. The shaft is removed and the small block of wood is rotated 180 degrees and the shaft inserted into the jig again. This completes the nock. By

Continued on page 71

The Whole Gig On The Jig, Shaft And Fletch!

THAT STABILIZING

INFLUENCE Part I

By Steve Barde



Above: The inserts used in fiberglass and aluminum shafts are held with a solution of epoxy or the Ferr-L-Tite hot melt stick may be used in completing the set of arrows.

Vione Miller draws an Easton aluminum arrow fletched with Fur Fly. In her quiver are other arrows which are fletched with Plastifletch, Fur Fly, Fletch-Ette and both die-cut and burned turkey feathers. Some are mounted in spiral, some in a helical fletch and others straight.

Below: The unit in foreground is the Little Chopper for shaping the fletch. In rear is the Young Feather Trimmer, which uses a heated wire to burn the feathers to shape.



CUTTING a feather on a shaft used to be a matter of finding a goose, turkey, heron or other long feathered bird, plucking a feather, tying it to a selected shaft and letting the arrow fly. A bit crude, but that is the way it was done.

Today the tyro or experienced archer has a wide selection of materials and equipment from which to pick. You still could pluck bird feathers, as they used to, but it isn't recommended for accuracy and dependability.

As archery became more popular and the science of shooting became just that, a few changes were needed.

The most popular fletch is from the turkey. According to turkey pluckers, there are only four or five good feathers on each wing. The long pointer feathers have a high oil line, good quill and the best are from tom turkeys; sorry girls. There are two sides to each bird; a right and a left and feathers are used from both wings. The left wing is the more popular as the right wing is trimmed, usually, to prevent the bird from flying the coop.

The turkey fletch is divided into two categories: barred gray and white, and the solid white fletch from the cultured birds raised for Thanksgiving dinner. These two are subdivided into dyed and natural styles.

The graybar is the stronger of the two. Most dealers will state this and follow up with the fact that white feathers come from smaller birds, hence a lighter quill and oil line. The feathers are selected from the thousands that fall from the harvested birds and the best are taken for the archer. These are machine stripped, then the quill base is ground uniformly and packaged. You can purchase one or several thousand, depending upon your needs.

Did you ever look closely at that feather you put so carefully on your arrow? It is a work of art. Separate the vanes, the feather section and look with a magnifier at the little hooks and grooves. They might be called the first zipper, since that is what they resemble. You can separate them, run them back together and they will hook again to give the appearance of never having been touched.

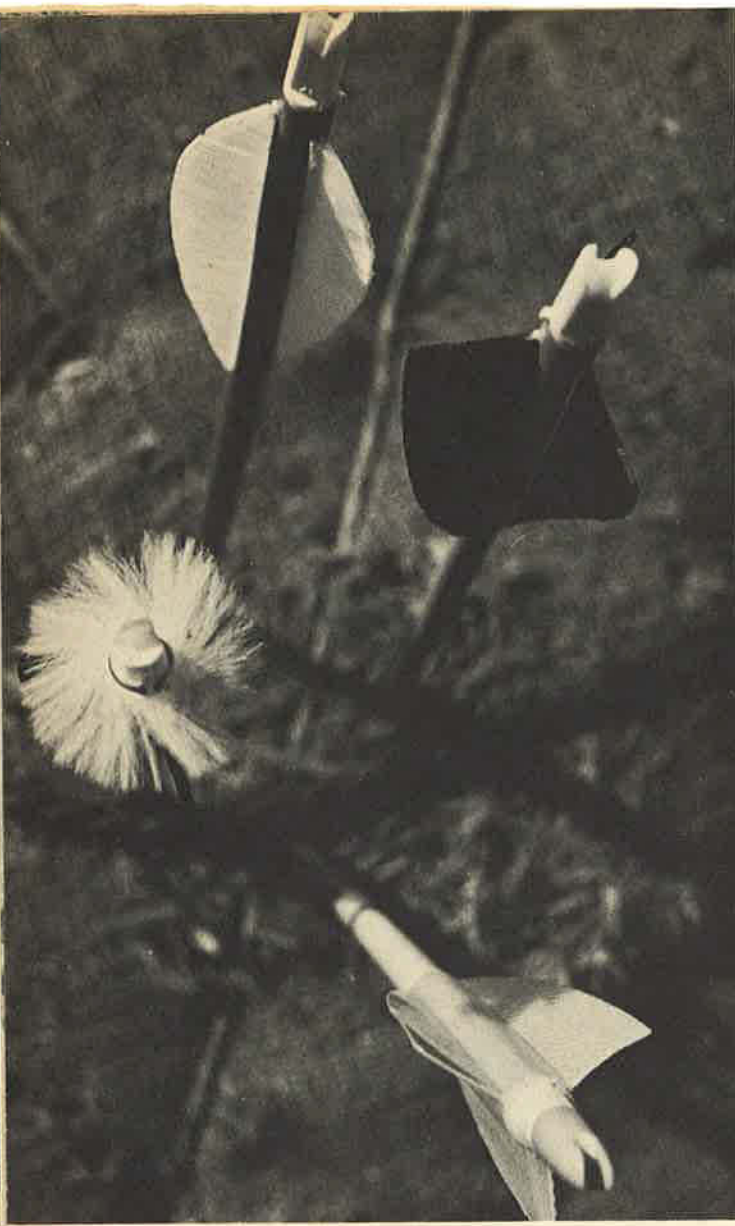
The oil line referred to in many fletching articles and catalogs may be seen by placing the feather at an angle against the light. This will show the high glossy appearance against the quill line. If your feathers have no oil line or are low against the quill, they are not top grade feathers.

A good fletching feather will have a high oil line, over one-half-inch high, which will run the full length of the feather. This is true of both the barred and white fletch. Colors are obtained by dyeing the feathers.

Many archers shoot nothing but the gray-barred fletch, an economical buy as they are the cheaper. Others will shoot nothing but the solid white fletch, since it provides a guide for following the arrow to the target. Follow a graybar down the range, then try a solid white and see the difference.

The target archers use a white or dyed white fletch about three inches long. The hunter may use a graybar or white, depending upon his reasoning, but they are usually five inches long to help hold the weight and to stabilize the planing tendency of the hunting broadhead.

In the not too distant past you bought your feathers full length and cut your own. Now you may order full



At the bottom is the Fletch-Ette, on the left is gray bar with Fur Fly tip, at top is a white turkey feather with spiral fletch, upper right is shield cut in helical.



Shaft stabilizer materials include the plastic Plastifletch, die-cut feathers which need not be burned for shape, the full-length gray turkey feathers, plastic Fletch-Ettes.

length or die-cut feathers, already pre-cut to your specified length and shape white, dyed white, graybar and dyed graybar.

For a long time the turkey feather was it. More is available today. For the highly tuned target archer, who wants top speed and constant flight, Max Hamilton designed **Plastifletch**. These are small pre-cut vanes of plastic. They come in sizes ranging from 1-5/8 inches to the big vanes that are 3-2/8. Plastifletch offers one thing the turkey feather doesn't: consistency.

The turkey feather is good, but the cuts made on the feather are never the same. No two feathers will have the same characteristics. Plastifletch has been used by many champions and non-champions successfully. Some archers have a problem hitting the bow when shooting the Plastifletch, but this can be overcome by fine tuning the bow.

Along the same line is **Fletch-ette** made by Action Archery Products in Oregon. These are made from a soft plastic material, with all three fletches on a tube. The tube fits around the shaft of the arrow and, whammy, instant fletch ready to shoot. The size varies from two and one half inches to four inches for the target and hunting archer.

Also on the market is the **Deer Flite** plastic vane. This is mounted on the shaft singly, but in a runner or trough that is first mounted on the shaft. The vane is slid into this trough and again, instant fletch. The newer style of Deer Flite mounts directly to the shaft and doesn't use the trough system. The runner or vane is cemented to the shaft with a fletching jig.

Sweetland's Fur Fletch is brand new. This is made from rabbit skins and has some advantages. It comes packaged in any color you like. Each strip of bunny fur is one-quarter-inch wide, with a piece of paper on the back that is pre-glued underneath. Pull the paper off, take the shaft and wind the fur around it clockwise or counterclockwise and once again, instant fletch.

Fur fletches are successful in indoor archery where the grouping is very close. You certainly can't break the bunny fur by hitting it with another shaft. Several schools are trying this fletch with success, as the archery director or student can easily rewrap a damaged shaft. They will take a lot of abuse before needing replacement. When they fly to the target and hit, they give a cotton ball effect, so you have no trouble following the arrow or finding it in the target to determine your hit from a distance. They don't work too well in a good wind, but Sweetland is working on this and hopes to be able to offer the hunter a similar fletch for the field to stabilize the broadhead and make a silent fletch for the hunter.

Now that you have been exposed to many of the fletches on the market, you must choose a method of attaching the fletch to the shaft. The tool used for conventional fletching is called a jig. It consists of a clamp-

ing device to hold the feather or vane, a rack to hold the arrow and clamp and adjustments on the rack to offer the archer a variety of styles for making his fletch.

They range in price from \$2.50 to \$30. Some are single jigs which will do one fletch per arrow at a time. Others are single jigs which will do three fletch per arrow at a time. There are also multiple jigs which will fletch six or more arrows at one time. They are sold with two types of clamps, straight and helical. The helical comes in two styles, right or left wing.

A good single jig is made by Eastern Sports and is fully adjustable right or left. It is available with straight or helical clamps and sells for \$2.75 with a straight clamp.

Perhaps the oldest name in fletching jigs is Bitzenburger. This jig does everything except shoot the arrow. It will make a fletch right or left, straight or helical, in the three-fletch in 120-degree gradations, and four-fletch in both the ninety-degree and seventy-five by 105 increments. This is all done with one jig and an instruction book. It isn't difficult to operate and offers the ultimate in fletching for the serious archer.

If you desire to buy, they also make a template. You could make your own, to assure that each time you change the jig from one style to another you obtain constant results. A magnet holds the clamp to the side of the frame and gives consistent fletch, depending upon the operator. It has a self-centering nock receiver that assures the fletch will be mounted properly. The Bitzenburger retails for \$21 with the straight clamp and gives years of service.

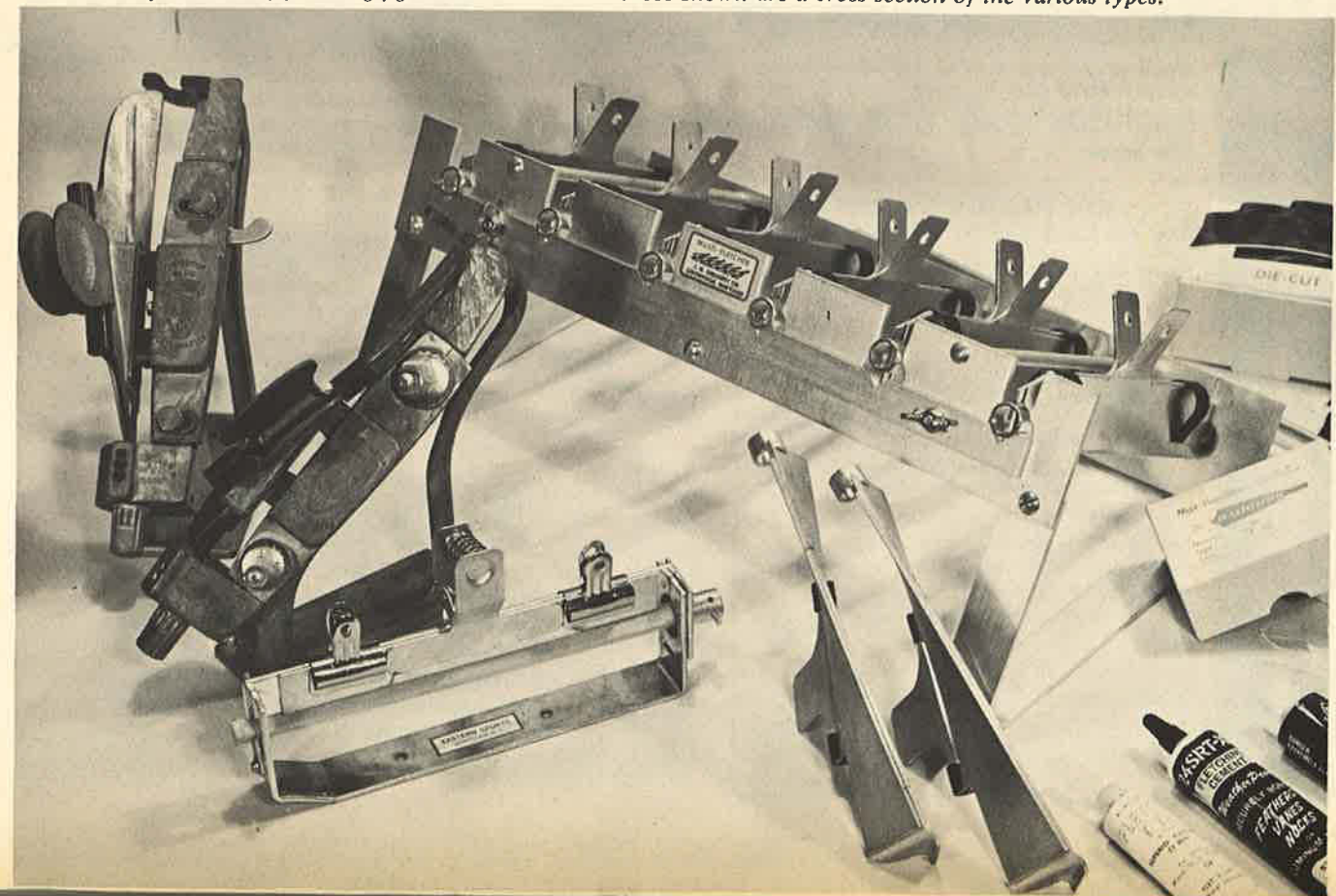
It would be cumbersome to describe all the jigs being sold today on the market. The reason for mentioning the above two is to indicate the wide range in prices and variations offered by professional jigs. Arrow manufacturers take the best jigs, put as many as fifty on a round table, and fletch each jig as it comes around. That is too professional for some of us, but there is a happy medium.

The Multifletcher, made and sold by J. G. Geghardt

Company, is a very satisfactory solution. It is an aluminum rack made to hold six clamps. It is versatile. It has two sets of nock indexes, both self-centering. With one model you can fletch your shaft in 120-degree increments or turn the nock receiver over and four-fletch in 75 x 105. You can purchase the straight clamp or the helical. For the helical you must specify right or left wing.

With the straight clamp you may adjust all six jigs simultaneously by loosening the clamps in the back, making your setting, then doing the same in front. This insures the six fletches will be identical. You may fletch either right or left wing feathers with the straight clamp by making the proper adjustment.

Continued on next page



The various types of hunting fletches, which are discussed in this article are in this shoulder quiver and ready for use on the particular type of game for which they're meant.

There are any number of fletching jigs on the market and those shown are a cross-section of the various types.



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Check or Money Order enclosed Please ship C.O.D.
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Fletching Preference: Red Blue Yellow
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BA

The clamps will hold a long fletch for the hunter or a small one for the target archer. You have the advantage of fletching six shafts at one time all the same. A solution I have used for years.

Now we need shafts. It used to be a straight willow wand or bamboo stave. Now there are three basic materials for arrow shafts: Port Orford cedar; fiberglass, and aluminum.

Port Orford cedar is the oldest. A light, straight-grained wood found in Washington and Oregon, it is popular and inexpensive. Most archers start shooting with cedar shafts. Many hunters use nothing else. Cedar shafts are becoming harder to get, and may come a day when there will be no more Port Orford cedar.

Shaft material made from Port Orford cedar, refined and compressed, is called Forgewood. It is made by Bill Sweetland in Eugene, Oregon. He takes the regular cedar material, compresses it, produces a strong stiffer spined shaft that gives great penetration. It is still cedar and is handled as regular cedar where fletching is concerned.

Fiberglass arrows are made by several manufacturers. A few include: Gordon Glashaft; Micro-flite; Shakespeare's rifled glass shafts and Ace glass. The methods used in making fiberglass arrows differ with the maker.

Some take woven fiberglass materials and wind them on a mandrel of their specifications, impregnate them with a resin solution and dry. Others, like Gordon Glashaft, take the fiberglass filaments, which resemble fine white threads, wind them around a mandrel as they lay them along the mandrel and add the resin. The end product, no matter what process is used, is a shaft that is tough and light in weight.

It is hard to get them out of line. They are more rugged than cedar, more expensive, but will last longer. They make excellent hunting shafts, and they are impervious to weather.

Even well dipped and treated cedar shafts may warp, but fiberglass will withstand both high and low temperatures. If it gets too hot, there is a possibility that the resins might warm enough to move and flow a bit, but I have never seen it that hot. The fiberglass shafts are used successfully by many target archers and have been a big boon to the schools, since their equipment takes a terrific beating.

The ultimate in arrow material, for uniformity, weight and performance is the Easton aluminum shaft. They are the undisputed leaders in this field, and have spent time and money researching and perfecting their product. When you finally decide to go for broke, whether for hunting or target, you will go aluminum. The Easton Company is still using the standards developed by Doug Easton in the late 1940s.

They now offer at least three grades of shaft materials: the 24SRT-X; the XX75s, and the newer X7s. These shafts are always being improved, if you can improve on the best, and they now make the new X7 and the XX75 with a higher bend resistance.

This gives us the materials needed for making and fletching arrows, the fletch, jig and shaft. ●

MEMO TO READERS

The adjacent Easton catalog is individually bound and, if you choose to retain it for your permanent file, it may easily be removed from this issue of BOW & ARROW, then bending the staples on the magazine pages back into position in order to retain the rest of the publication.

Archer Vs The Viet Cong



The Bow And Arrow Are Being Used Indian-Fashion To Disrupt Enemy Operations!

THE flaming arrows used against the circled wagon train to set the canvas tops afire more than a century ago is not yet obsolete. It's being used in Vietnam today!

Navy Lieutenant Commander Donald D. Sheppard of Coronado, California, commander of River Division 51 at Binh Thuy, South Vietnam, has been demonstrating his prowess with the longbow in recent months while on river boat patrols.

With a piece of burning burlap tied to the point, each of his arrows is shot into Viet Cong huts built along the banks of the river to conceal bunkers from which the enemy guerrillas fire at the passing patrol vessels.

"The Viet Cong usually come out in a hurry, when the hut over their bunker begins to burn," according to Sheppard. "We have accounted for five confirmed Viet Cong kills by using this method."

There are other methods for destroying the huts, Sheppard explains, but none have proved themselves as effective as the arrow. The heavier artillery shells pass

right through, while a hand grenade — difficult to hurl from the river — only blows holes in the cover.

"Our main job is to stop the Viet Cong from crossing the rivers or using them for any other reason," the commander reports, "but we have carried our mission a step beyond."

At any given time, the patrol boats may turn into one of the smaller rivers or numerous canals that feed the main stream, thus catching the Viet Cong by surprise as they are staging for a river crossing. A burning arrow into their midst is a mighty startling blow at morale, too.

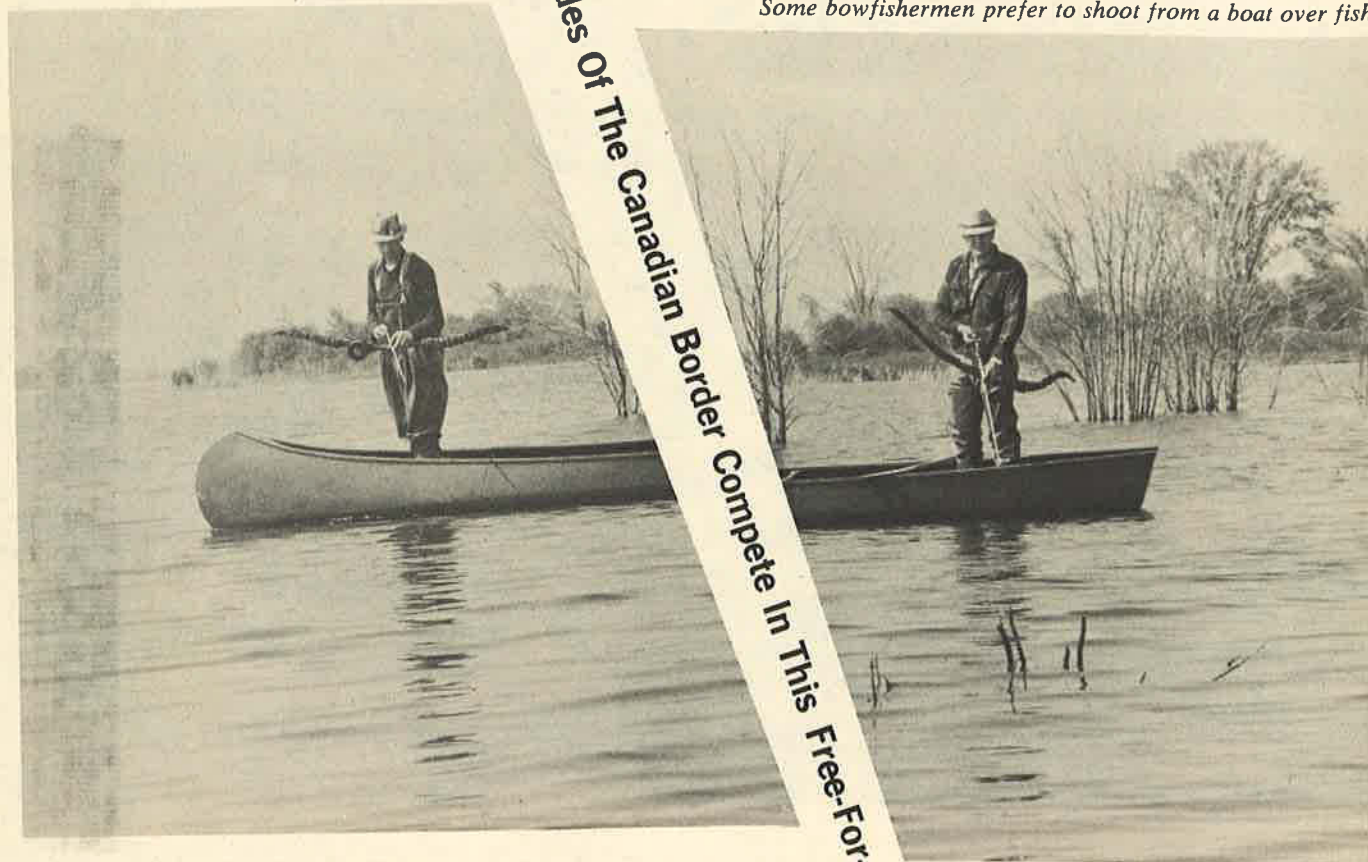
Sheppard has been stationed in Vietnam since February, 1967, and has earned the Silver Star and Purple Heart in action. This may well be the first time that a top combat decoration has been won with bow and arrow.

However, Sheppard is about ready to hang up his archery tackle, or turn it over to another, as he is due for transfer to an intelligence unit in Japan. — *Martin Haynes* ●

Archers From Both Sides Of The Canadian Border Compete In This Free-For-All!

INTERNATIONAL

Some bowfishermen prefer to shoot from a boat over fish.



BOWFISHING BONANZA

By Grant Hopkins

However, some shooters do just as well from a stump or from shore.



BOWFISHERMEN are probably the foulest smelling group of outdoorsmen in existence; especially those from New York state, Ontario and Quebec who take part in the annual International Carp Derby each June in the one hundred square miles of Lake St. Lawrence.

After all, who wouldn't work up a strong sweat when carp are at the peak of their spawning run, and acres of them are pushing and shoving to satisfy their maternal instincts in the shallow bays, marshes and creeks of the lake?

Add a few plunges into muskrat holes while wading in the cattails and smatterings of blood and scales picked up trying to extract an obstinate fish arrow from a thrashing bullseye, and what do you end up with? Would you believe a normally clean-cut, well-loved bowman now reeking like a cross between a Maine cod jigger and an Okeechobee alligator? And as a reward for his underwater marksmanship his

family avoids him until the middle of next week when the aroma has subdued somewhat.

Failing to qualify for a bouquet of roses, however, doesn't deter many from enjoying this exciting combination of hunting and fishing. Each year bowfishers of all ages and both sexes enthusiastically return to the derby hoping to skewer the mostest or the biggest. They have a ball doing it and give conservation a boost at the same time.

The derby, sponsored by the Seaway Valley Archery Club of Cornwall, Ontario, is one of the few events of its kind where bow benders from the United States and Canada team up to fight a common menace.

The success of the two-day shoot is indicated by the five tons of bronze-armored warriors, averaging seven to eight pounds each, that finally are stacked at the official checking station. This represents a lot of line winding, pulling and splashing for the hundred or so participating archers, between the hunting hours of eight in the morning and three in the afternoon.

Most sought-after trophies are the one for the largest fish and the four-man team award. Winning the

team honors takes a sharp eye and a great effort. The record is 2,047 pounds set by the host club in 1966. That worked out at thirty-six pounds of carp an hour per man, a fair pace to maintain for two days.

Biggest fish taken to date has been twenty-three pounds. This isn't large as carp grow, since Gene Reilly wrestled ashore what must be an unofficial bowfishing record of a fifty-pound two ounce specimen from the Susquehanna River in Pennsylvania a few years back.

Hogsize carp over forty pounds have been taken in nets from Lake St. Lawrence, but during the spawning run the larger ones keep to the deeper water where they are difficult to hit solidly. After a brief and furious tussle they rip themselves free to the dismay of the soaking bow angler. The typical fisherman's harangue, "You should have seen the big bast--d I lost...", is oftentimes repeated.

Lake St. Lawrence wasn't created especially for bowfishermen, although the marshes and bays on both sides of the border couldn't have been better designed by Saxton Pope himself. The lake came into existence in 1958 as part of the billion-dollar St. Law-

rence Seaway project to permit passage of large ocean going vessels into the Great Lakes and to provide electrical power for cities in eastern North America.

The original narrow and swift St. Lawrence River, which served as the boundary between New York State and Ontario, was flooded by waters backed up at a new 3,300-foot dam just below Massena, New York, making a lake thirty miles long and two to three miles across. Thousands of acres of mixed farming country were inundated and a number of elm-shaded communities, mostly on the Canadian side, had to be relocated.

The great increase in relatively shallow, warm, weedy water provides ideal feeding and spawning grounds for the husky, golden-sided fish. Their numbers have mushroomed to the nuisance stage and they pose a serious future threat to smallmouth bass, northern pike and other game fish, as well as waterfowl that nest or feed in the lake during migration.

They have multiplied in a number of varieties. The most common type is the familiar species with its quarter-sized scales referred to simply as the German

Two of the younger participants in the annual derby are confined to the shore, but get in their share of shooting.



This stringer full of carp is ample proof that the young shooters are as adept at bagging big ones as the adults.



carp. Less frequently seen is the mirror carp, which has only a few silvery scales on each side but they measure two to three inches across. Another variant is the leather carp which is almost scaleless.

Each fish shot during past derbies has been weighed, measured and scale sampled. This was done under the supervision of the Ontario Dept. of Lands and Forests conservation officer for the Cornwall area, Murray Martin. He also happens to be president of the Seaway Valley Archers, so the derby is a busy time for him. Running the shoot with his committee is enough of a task, but Martin tries to get in more than his share of bowfishing as well.

The data collected has indicated that the carp growth rate for the lake is two and a half to three pounds a year, almost twice the average for waters in the northeast. This coupled with the fact that the carp is one of the most prolific of fresh water fishes — a mere five-pounder lays 100,000 eggs which hatch in two weeks — makes it easy to see why the lake is beginning to have a problem.

The spawning vanguard come into the shallows as early as the end of April, but the heavy run starts in mid to late May once the water temperature reaches 62° F. It is not difficult to tell when the fish are around. Their stay is accompanied by vigorous tail slapping, splashing and jumping. The carp appear to cruise aimlessly into all accessible waters with no definite course of action. Often they crowd the marshes

with their dorsal fins and half their greyish backs out of the water.

A carefully wading archer usually can get within shooting range of such a school. The problem then is which whirling target to choose. Two or three fish can be pinned by the same arrow if the bowman waits for the right moment. After the shot, the herd stampedes in a cloud of silt and the hunt begins all over again.

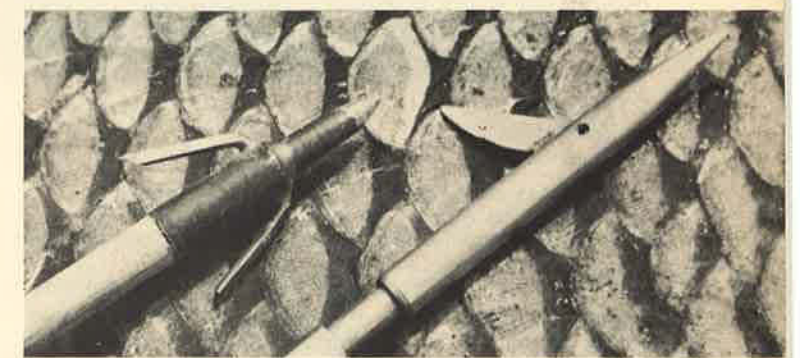
Although carp may recklessly give away their position, stalking them is something else, particularly if the water is clear. They are exceptionally wary and will spook at the least movement. Most likely, though, the water is so riled and muddy that seeing a fish right at your feet can be a problem. Under these conditions they'll swim into your legs, or you may step right on top of one. Either encounter is good for a startle and an outburst of cuss words as long as a bowstring.

When water visibility is good, chances for a good bag are improved if the sun is out and the winds are light. A pair of polaroid sun glasses will cut down the surface glare and further help underwater perception. Usually what is seen through the murk is a glimpse of a fin or the flick of a tail. A quick guess is made of where the body is, then lead — aim low for refraction — shoot.

There is seldom any question when a hit is scored. Water flies in all directions, the end of your arrow gyrates violently, and yards of line are stripped off



Bowfishing can be a ladies sport as well, in spite of wet slacks and feet, a hazard of this type of participation. Soggy socks or not, the fish below weighed 17 pounds.



At left is an effective head made from a field point, while the other is a commercially designed head boasting stainless steel and a barb that is retractable in head.

your bow reel as the carp makes a desperate charge for deeper water.

Ingenuity is important in bowfishing tackle. Every bowfisher seems to have his own preference in gear, either homemade or commercial products. The basics are a fish arrow, preferably with a head with retractable barbs to make removal easier, and a fiberglass shaft to withstand the pounding. Fletching, rubber or otherwise, isn't necessary as the shooting distances are short, thirty feet or less.

A nylon line tied on the arrow is necessary when fish are taken close to open water and there is a chance they may escape. The line is tied to the head, run along the shaft and looped with a few half hitches at the nock. Recommended strength is a substantial fifty to seventy-pound test, not so much to hold a monstrous carp, but to permit the arrow to be pulled out of weeds, driftwood and other bottom miscellany after a miss.

A simple reel affair is taped below the bowhandle to store line and let it flow freely on a shot. Sometimes the carp have pushed into such shallow water that a line isn't necessary. Shoot 'em with field points as fast as you can draw from your quiver.

A pair of waders, ideally ones that come up to the chest, makes it more comfortable being in the water and permits the maximum mobility through the weeds and cattails. Those bowfishermen not owning a pair aren't handicapped for long, however. They wade in

These are two average size carp taken from Lake St. Lawrence during the derby, weighing about seven pounds.





Each carp taken during the annual shoot is weighed, a sample of scales taken and then measured. Scientists use this information for studies on age and the growth rate.

an old pair of pants and running shoes, or use a small boat.

Why do carp have a disdainful reputation and bow-fishing for the species encouraged by almost every game commission in the country? First of all, in many areas they are considered the greatest single factor in restricting vegetation growth in shallow water. They eat it, uproot it, or shade it during their activities. This turmoil destroys spawn of desirable game species and is mainly responsible in many waters for the decline of wild celery and wild rice, prime waterfowl foods.

In addition, carp fingerlings up to five inches feed mostly on waterfleas and scuds, and yearlings from six to eleven inches consume large quantities of aquatic insects. These groups of invertebrates are important sources of protein for both game fish and waterfowl.

Weed beds decline, bare mud is left and waters become cloudy and of little use to any other form of animal life, as this finny vacuum cleaner increases in numbers. Take the case of Lake Mattamskeet, in North Carolina, where over half of its 30,000 acres was reduced to bare mud bottom because of carp. Removal of the fish let food plants grow and the lake once again is a major waterfowl wintering area.

A more distressing example is Wisconsin's Lake Koshkonong where carp cleaned out the wild celery and pondweeds, consequently the myriads of canvasbacks and other waterfowl that once haunted the area are now a memory. Ducks Unlimited became so concerned about the serious effect on waterfowl in the nesting factories of Manitoba, that they constructed screens between the famed Delta Marsh and Lake Manitoba several years ago to keep the underwater bulldozers out.

How did we inherit this undesirable character in the first place? They were first introduced into North America around 1830 by well meaning, but not too far-

sighted individuals, who wanted a fish that would survive in waters unsuited for other types and provide a cheap food supply. To help things along the U. S. Fish Commission began a carp stocking program in 1877.

Cyprinus carpio certainly met the qualifications. In the intervening years it took over all the unsuited water as intended, as well as water suited for more valuable species. This came about primarily because the food value was neglected, and still is for that matter. No one has bothered much except to use the minnows for bait and spread carp to an even greater extent.

What do you do with this tough customer after you arrow him, especially five tons worth? The carp from the derby are given to a rendering company in Cornwall as a favor for hauling them away. The firm makes jewelry from the scales and grinds up other parts to make a base for cosmetics.

If a bow angler has friends who like to eat the fish, and many ethnic groups do, he can give them a freezer or two full. When skinned and soaked overnight in salt and soda, then deep fried, carp are supposed to make tasty fare. They are also considered good eating when smoked.

Other disposal methods include giving the fish to mink ranchers for animal food and burying them in your flower garden, or better still your neighbor's flower bed. If no use can be found the fish are buried where they were shot. Simply leaving them to rot on the shore is not only unsightly, but spoils the entire area for other enjoyers of the outdoors.

More bowmen from both sides of the border are getting in on the Lake St. Lawrence carp bonanza every year. When the fish are so thick that tenters in nearby lakeside campgrounds are kept awake at night with their spawning antics, there is certain to be plenty of arrow angling excitement and adventure to go around. ●



This ten-pound carp was taken by this man who slowly waded through the rushes, waiting for the fish to move.

Bagging this pile of carp offered some exciting and challenging moments for several archers in the tourney.



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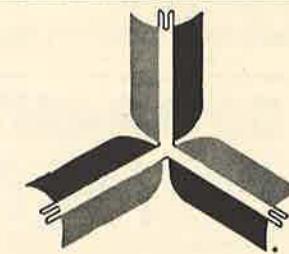
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TECH TALK

Continued from page 8

have to draw the arrow under his right eye. If he keeps both eyes open, the left eye will do the seeing and he'll have to compensate with his aiming by holding to the right of the target. The normal solution in such a case is to shoot with the left eye closed to force the right eye to do the seeing. Just blinking the left eye often will do the job, yet permit a degree of depth perception.

(With a bow sight, you either can use a long pin sticking out from the bow about the spacing between your eyes, or you can start closing the left eye.)

NOCKING CHANGE

I own a Browning Medallion bow that is sixty-four inches and draws forty pounds. I pull twenty-seven inches, but do not like the covered arrow shelf for target practice.

Could I raise the nocking point and attach a plastic or bristle arrow rest without decreasing the accuracy of the bow?

Harold L. Atkins,
Chillicothe, Missouri

(Yes, one can raise the nocking point, but ideally the arrow should pass as close to the hand as possible. We'd suggest removing the old rest, then putting in the new one, keeping it as close to the old location as possible. Your nocking point on the bowstring then will be located such that the arrow points slightly downhill — the nock about one eighth to one-quarter-inch above horizontal.)

FEATHER REST?

In the Shakespeare Kaibab and Ocala bows, would it be logical to replace their Flexrest with a flat type of rest such as a piece of velvet glued to the shelf?

Ted Ray,
Louis, Virginia

(The Shakespeare models are excellent choices as hunting bows, but a vertical rest seems to be the most popular for hunting. Whatever is used, be certain that it is not hard, so as to eliminate noise.)

SELF-BOWYER

Since I enjoy making most of my own archery equipment, I have been watching your Tech Talk column in each edition.

My problem is in finishing rosewood. I have been trying to put a finish on a rosewood bow handle for two years. I have tried almost every finish on the market in Canada and all have failed.

I have tried several clear plastic finishes as well as urethane, polyurethane and epoxy. I have tried sealing the wood first with sealer, urethane wood filler or pure shellac thinned with alcohol. I have tried spar varnish and clear lacquer and find them too soft for a bow handle.

All finishes go on the rosewood well,

but when they start to dry, the finish becomes pocked with bare spots. I have exhausted all my knowledge of finishes and am calling for help!

Allen E. Smith, President,
Peel County Bowmen,
Brampton, Ontario

(The normal method of handling rosewood is first to seal it, then to fill it, sand it and finish with a good plastic finish such as polyurethane. Good luck!)

SIGHT SETTING

I was quite interested in the article on Jim Pickering in the Nov./Dec. 67 issue. Prior to reading the article, I affixed a sight to my bow, using an anchor nearly identical to Pickering's. However, I couldn't set the sight for longer distances with this anchor, which led me to believe the under-the-chin anchor was the only way of sight shooting.

Upon reading this article, I became inspired and went back to the high anchor, producing a much better score on the indoor shooting. However, the problem remains unsolved for outdoor shooting. The type of sight attached to Pick's bow may be the answer. If so, where can I obtain one like it?

Ervin Choquette,
Fort William, Ontario,
Canada

(Precision indoor and outdoor shooting are two different sports in many ways. The sight to which you refer is not a commercial sight, but was built from a number of parts. The basic length came from the Long Shot of Bob Sewell's Comanche Archery. You'll find you'll do best if you do build your own sight; it's pretty rare to see exactly the same sight on any two archers' bows.

(Outdoor shooting requires greater distances for many of the shots. Either you'll have to lower your anchor, go to a much heavier bow, or vary your anchor point with the distance.)

IN RELEASE

I prefer to shoot my arrows from a rest comprised of a leather plate and teflon tape on the shelf.

My difficulty is in keeping the arrow in place before releasing. When using a rug type or vertical feather rest — even extreme bow cant — this problem does not exist. What can be the cause and the remedy?

William A. Kiselewsky,
Woodside, New York

(Generally, the arrow moving off the rest is caused by the increase of the bow pull being offset by your clutching the bowstring more tightly as you draw. This movement simply moves the arrow off the rest.

(To offset this, try starting your draw with your fingers wrapped well around the string at the beginning. Then, as you draw, let your fingers unwrap a bit to move the arrow in against the bow.)

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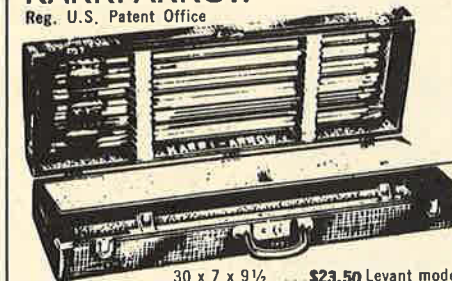
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LADY BOWHUNTER

Continued from page 20

"Bob got his at nine in the morning. It was a fifty-seven-yard shot. The caribou weighed 350 to 400 pounds and had a forty-four-inch spread. It took me longer.

"We stalked for twenty-five minutes in the snow at temperatures around twenty-two degrees above zero. The wind was really blowing and there, ahead of us in the willows, I saw a truly magnificent bull caribou. I crawled up and I took a look and couldn't believe it. You can't imagine what he looked like! There were several feeding. My shot was going to have to be broadside. When I released my arrow he bolted, but it got him. It was a shot from forty yards. We tracked him for around eight hundred yards. I am glad I shoot instinctively, because had I shot any other way, I would have missed him. I thought he was only twenty to thirty yards away from me."

The caribou weighed 350 pounds, measured 389.5 and will place in the top ten with Pope and Young.

After Denny Thompson spirited them back to the inn, Jim Cann, another Alaskan guide, offered to take them down to his camp at Lake B, so they could get a taste of camp life. Betty Gulman flew down ahead, then sixty knots of wind cancelled her husband's arrival and any shooting they might have done.

Both hunters recommend that you really have some positive information about your guide, although their tale indicates it is still possible to have a bad experience with references. They were more than grateful to the two guides who donated their time and equipment to give them a better view of hunting on the Alaskan peninsula.

Betty and Bob Gulman do more for the sport than participate. They have lectured and demonstrated at schools, local events and business luncheons. Now they are interested in the lecture circuit. Both are attractive outgoing people and are capable of generating enthusiasm. They have been careful to record on film some of their more interesting experiences. Mrs. Gulman still is bemused over the fact that, while visiting a game reservation in Arizona, several Indians came up to question her about the bow and arrow and ended up staying for lessons.

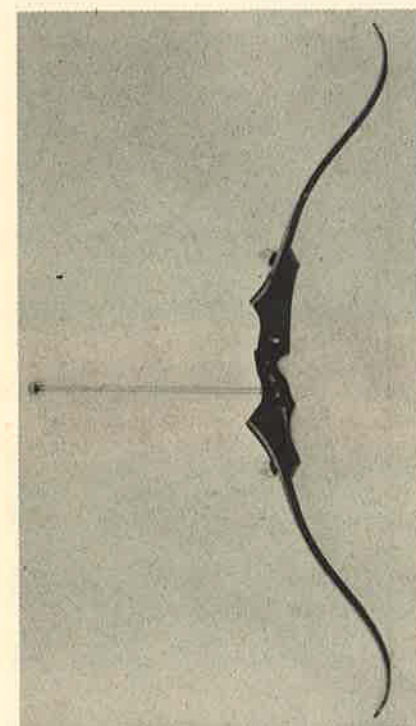
On the floor of her den is the hide of a 245-pound black bear, serving as a rug. In addition, there are the mounted heads of three of her six javelinas, deer and other small game.

Hunting is an enthusiasm which has captured the entire family with the exception of daughter, Diane, 16, who plans to be a nurse. She proclaims, "I'm the oddball of the family. I don't like hunting animals." Son, Bob, 19, is now serving in Vietnam and is an ardent hunter when he has the chance.

There is little evidence of a competitive feeling between Betty and Bob Gulman. On the day of my visit, he was busy feeding a bottle to their small granddaughter and supporting his wife's stellar performance. They now are building a separate trophy room and den apart from the main house in order to have room for all their hunting prizes, skin rugs and mounted creatures.

This is one gal who entered a man's sport and has earned the praise and admiration of other competitors for her poise and determination. She may not fit the PTA or bridge group gang, but anyone with a wild animal problem will find that Betty Gulman plucks a mean string. ●

BOW BITS



SHORT SHRIFT

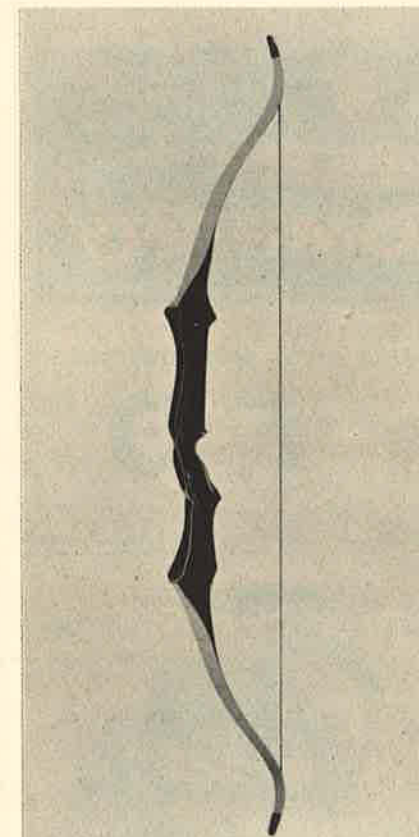
The short handle Presentation II bow is a companion to the long handle Presentation II. Both handles are interchangeable with six different limb combinations — marking a high degree of flexibility.

The short handle, with fifty-eight inch limbs, provides target bow accuracy in a compact hunter. The sixty-four or sixty-six inch limbs are good with this handle for both hunting and field shooting.

Both handles come with built-in stabilizer insert adapters and four extra weight positions on the handles. The weights are interchangeable and may be fastened to the rod tip or to the four handle positions where they secure the limbs to the handle.

The handles are formica box flex. The limbs up to sixty-two inches come in black glass, the larger in white glass. The bow retails at \$150. An extra set of limbs is \$64.95 and a custom carrying case is \$29.95. A stabilizer set of one rod and one-weight sells for \$12.50.

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The redesigned Tamerlane bows include a blonde Lady Tamerlane for those who have more fun with blonds. Duo has the Golden Triangle of Stability, two-way grip and all the tournament features needed to personalize them for each archer's individual shooting habits.

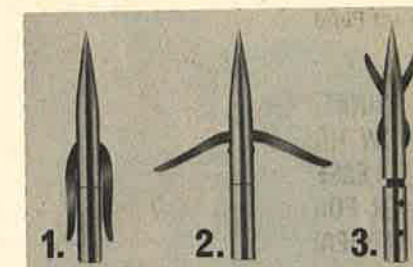
Standard are the Bear custom arrow Rest, adjustable arrow plate and factory built-ins to accept the Bear Inertial Stabilizer and Premier bowsight.

The Tamerlane has a riser of East Indian rosewood and the Lady Tamerlane has Michigan hardrock maple accented with East Indian rosewood. Both come in a custom black bow case.

The Tamerlane is available in sixty-six and seventy-two inch lengths and the Lady Tamerlane comes sixty-six inches long. The bow sells for \$135 or \$150 with the Bear Premier bowsight factory installed.

At all Bear dealers. For more information contact the Bear Archery Company/ (Dept. BA), Rural Route One, Grayling, Michigan 49738.

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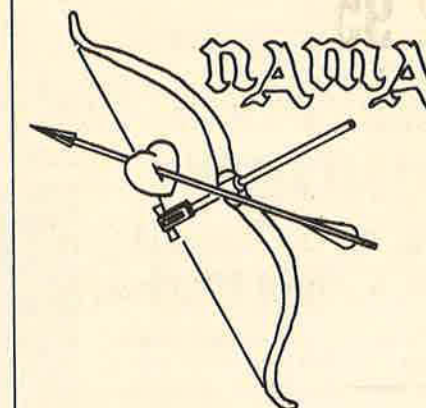
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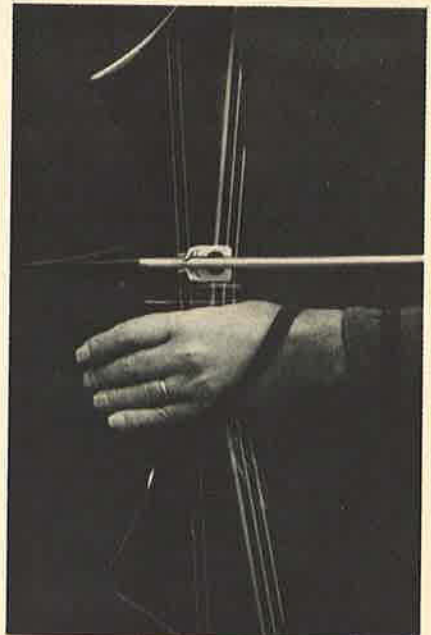
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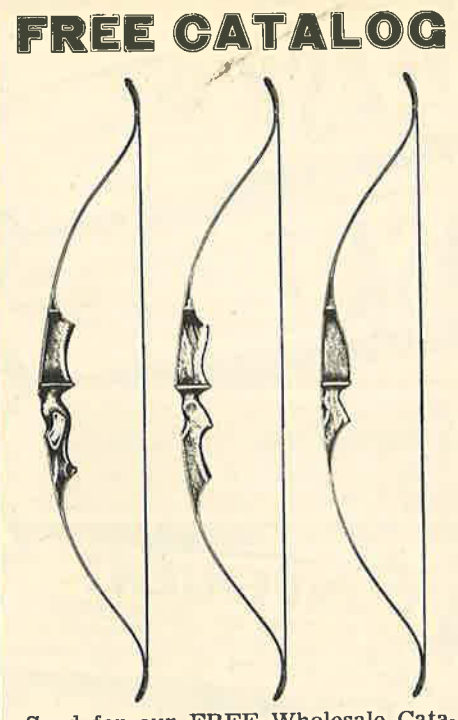
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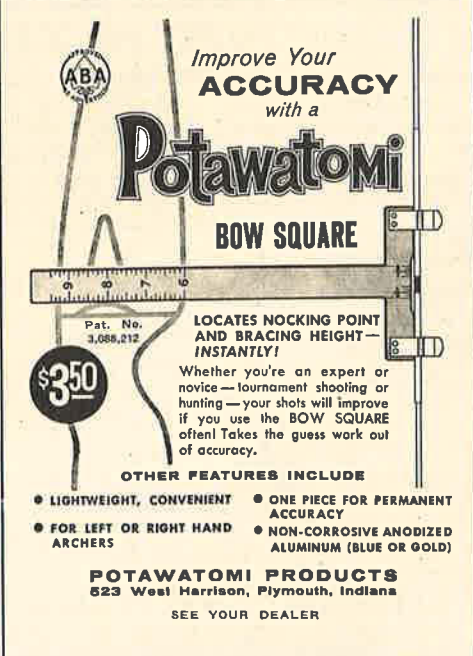


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KITTREDGE

Continued from page 10

The major difficulty is that the steel used in many broadheads simply is too soft to hold a "razor" edge while the arrow penetrates first thick hide and hair, then bone, before getting into the vitals. By the time such a head reaches the actual meat, the head is no longer sharp enough to really do the job. Take an ordinary file and try making a mark on a razor blade. It's almost impossible to scratch it. Now try the same thing with one of your broadheads. The difference in hardness is immediately apparent. Now take two pairs of pliers and try bending the razor blade — what happens??? It breaks with a pop. Doing the same with the broadhead produces only a bend. This is the dilemma in broadhead design. If the steel is as hard as needed for a lasting razor edge, it is too brittle. If soft enough to sharpen and bend rather than break, it will not hold a true razor edge long enough to do the job.

A growing number of bowhunters are gluing pieces of razor blade to their broadheads using Plio Bond contact cement and producing a superior killing head which has the toughness of broadhead steel coupled with lasting sharpness of razor blade steel. It takes time to do, but the killing results make the time well spent.

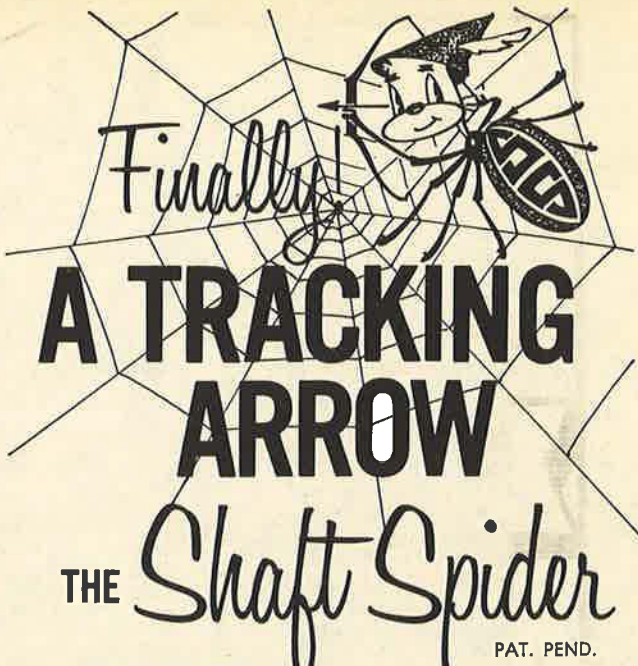
Remember the last time you nicked yourself with the blade while shaving? Recall how difficult it was to stem the flow of blood? Just imagine the result when an actual razor blade on a broadhead strikes an animal! Even if only grazing him and never even striking a major organ or artery. Not having a medical center to go to, the animal has no way of stopping the flow of blood and soon bleeds to death.

It has been determined that approximately eight per cent of a deer's weight is blood. With a pint of blood weighing about one pound, an average 120-pound deer has some nine and one-half pints of blood in his system. The loss of a shade over one third of the body's blood will prevent carrying enough oxygen to the system and the animal will collapse, with death shortly thereafter. In the case of this 120-pound deer, it will require about three pints of blood to flow from his wounds before you can claim your trophy.

Three pints of blood is a lot, and when spread on the ground as a blood trail, it's a whale of a lot! To get an idea, try filling a quart milk bottle full of water. Go out in the street and splash the water about as you normally would find a blood trail... a thin trickle here for a way, then some spots every so often, a hand sized puddle where the deer stopped, and so on. You'll go a long way before you have used up the quart of water, and you'll still have another half-quart to go to make up the three pints needed.

Depending on where he is hit, an animal bleeds both internally and externally. The novice bowhunter often fails to think of the bleeding inside the animal and considers that what he sees on the ground is it. He will come to a small puddle of blood on the ground and think to himself, "what if I lost that amount of blood?" and by likening the situation to himself, be fully convinced the deer just can't go much farther before he completely runs

Continued on page 84



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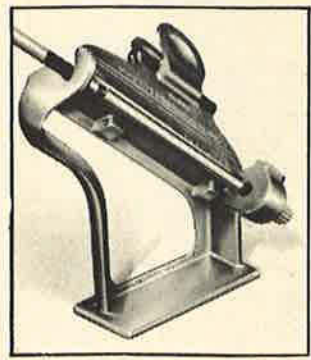
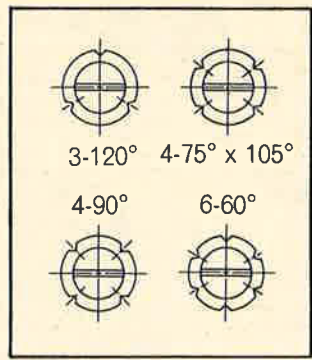
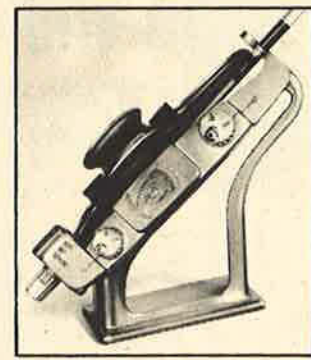
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**Bitty Game
By Bow
Or
How To Train
For The Main Event**



By Jim Dougherty

DOUG Kittredge has an expression that I always felt was aptly put: "Small game is big game, when you hunt it with bow and arrow." When you stop and think about it, Doug has smacked the ol' nail right in the center.

Doug was the guiding light, when I was first enticed into my often rewarding and more often frustrating affair with archery. We made a deal a long time ago. I would teach him to fish, and he would teach me to shoot a bow.

Doug became a superior angler, while I really never did learn how to shoot. This had nothing to do with who was doing the teaching. I think fishing must be easier. Doug and I busted a lot of arrows and a fair amount of fishing tackle as we roamed the country in pursuit of trout, bass, deer and small game.

It was, incidentally, because of our interest in small game hunting, and the great amount of time we spent at it, that we became involved in varmint calling.

Doug thinks that practice on the field range is not going to produce a great shot in the game fields. We got prepared for the venison season by hunting venison country (minutes from home) for small game. That way we got in a lot of good hunting, and kept abreast of what was going on in the deer woods. As far as I'm concerned, it paid off. There were few seasons that Doug and I didn't collect some meat right promptly.

This habit of small game hunting has been ingrained in me and the majority of my hunting partners. Although practice is undoubtedly of value when one talks small game, the real selling point for this type of hunting is the fact that it is downright exciting.

Within fifty miles of my home in the metropolitan Los Angeles area, I can hunt the following: rabbits, squirrels, frogs, varmints, racoons, carp, sharks, all kinds of game birds, deer and even bear. That's just a smidgin, and all of this right in close to town. Many places where we hunt, we can see downtown Los Angeles and observe the freeway rush from the top of a suburban hill. My point is that small game hunting is available wherever you may be and shouldn't be passed up.

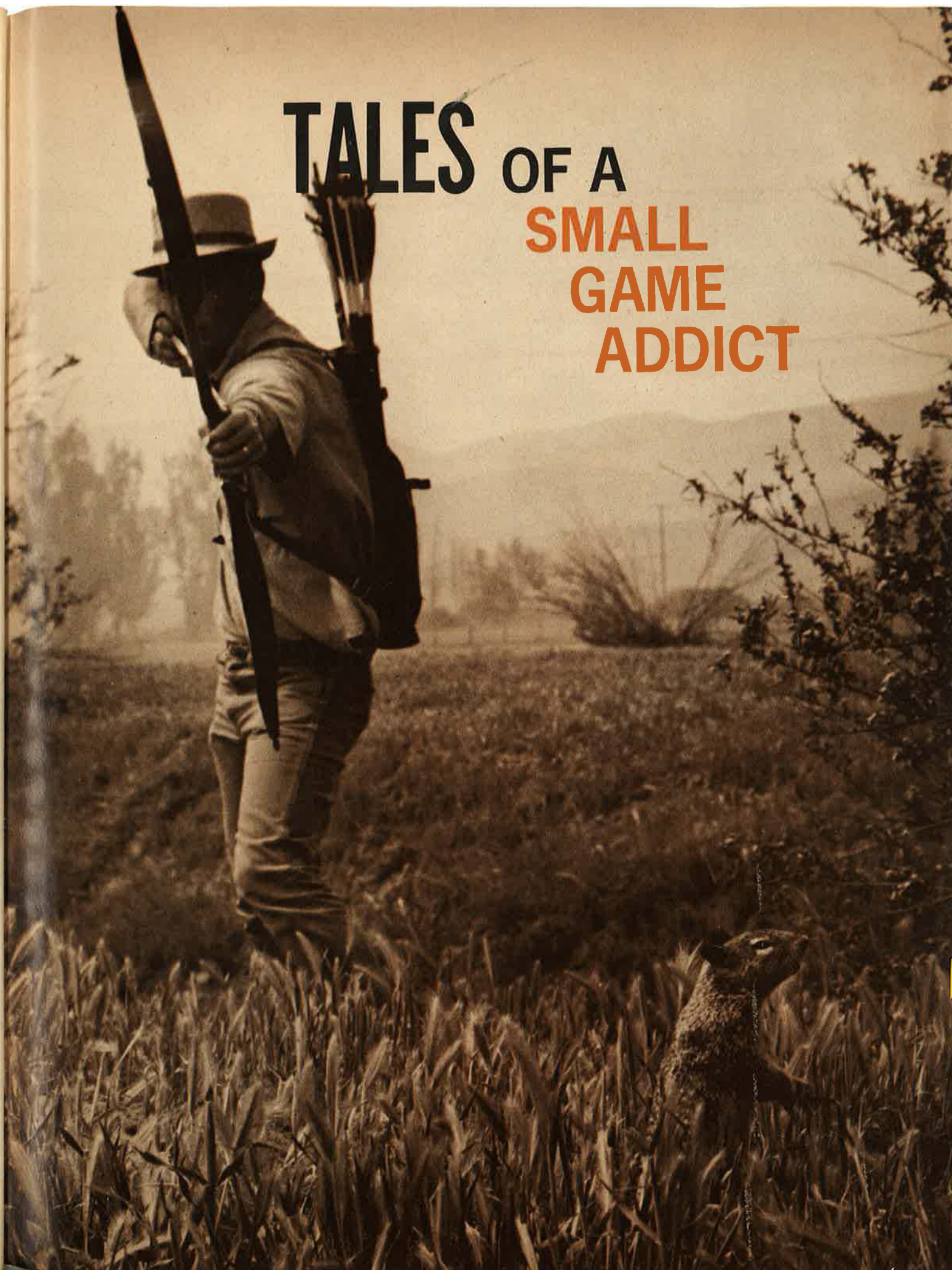
The gathering together of a group of bowhunters, for a week end of jack rabbit shooting, is just as exciting as a deer hunt. In the east, the fellows hunt woodchucks, a challenging pastime. Down in Texas, Arkansas and Louisiana I was introduced to a big sport, as much fun as anything I ever tried, hunting armadillos.

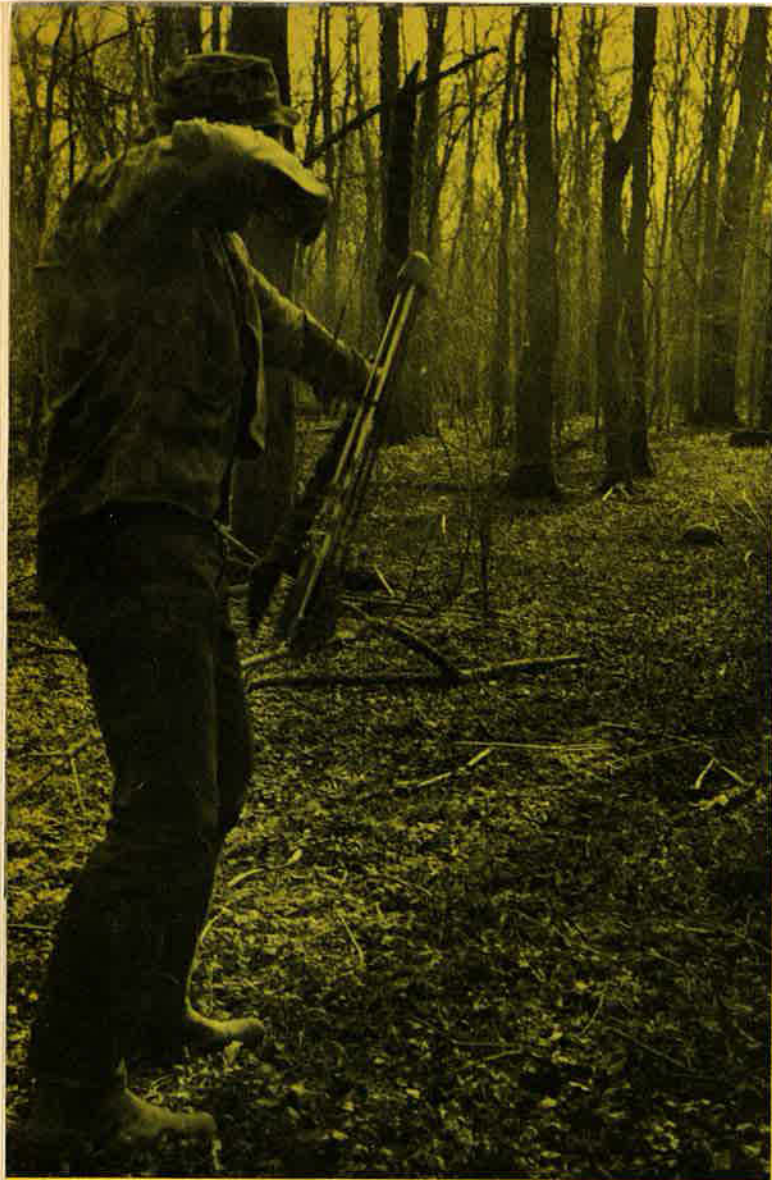
The armadillo can be duck soup or tough. In some woods they run rampant and have created a serious problem by sheer weight of numbers. Until you have seen an armadillo on the run, with three or four archers flinging arrows at him, you haven't seen one of bowhunting's craziest sights.

Small game hunting offers a fine supplement to a major big game trip. Rabbits are found in one variety or another wherever you may go. Cottontails, brush and

Hunting minor game can serve as excellent practice for the major outings, when you're after that big one and you've had time to practice and prepare for the chance.

TALES OF A SMALL GAME ADDICT





All of the techniques of bowhunting and stalking can be put to use in creeping up on small game for that shot.

swamp rabbits go well in the pot. Most of the small game is edible. I can recall many a memorable meal in camp made up of some critter.

Stalking rabbits or squirrels is not easy to pull off successfully. The training is excellent. Many mornings Doug and I stalked the elusive and tasty cottontail for hours, around cactus beds and woodpiles. The same shooting conditions encountered when pitted against bigger game are experienced.

The type of equipment used by the small game hunter should be the same used against bear or deer in the fall. Even the broadhead can be used, although most hunters prefer blunts or field points of a weight the same as the broadhead.

Blunts are used on small game. Arrows, with rare exceptions, set up a shock wave like a bullet on big game. Rabbits and other small game are tough, but a blunt takes a lot of the fire out of them, pronto.

One enjoyable small critter hunt involves plunking frogs at night along the banks of a slough or marsh. The hunter must exercise care in the approach and pinpoint accuracy in the shooting. The bag of frogs, after an evening's sport, contains a delicacy that could cost ten dollars a plate in a restaurant. Broadheads are ideal, unless the frogs are in the water, then a bow-fishing rig should be employed.

Sneaking along a frog bank in the dark with a headlight can give a hunter chances at other game. We have run across coons, muskrats, bobcats and fox, while hunting big green bull frogs.

Varmint calling is the ne plus ultra of small game pursuit. A coyote or bobcat can be placed in the same category as a deer or elk, when hunted with a bow. Foxes are the easiest to bag. Coyotes are the most difficult to lure up and place in contact with an arrow. Razor keen broadheads are all that will bring them down quickly and humanely. Racoons come well to a call and can be hunted with dogs or by slipping along on foot in good coon feed areas, where waterlife is abundant.

Bowfishing can take on many shapes. Carp offers the best spring season hunting. In most areas you are doing game fish a favor by removing carp from the lakes and rivers.

In the Pacific Ocean, as the waters grow warm, sharks move in following the game fish. They are uncommonly easy to take with a bow and arrow. When dealing with the big ones, the smart hunters run a line from their arrows to conventional salt water tackle and reel in their prize.

In California a law has been passed making it permissible to pursue ocean game fish with a bow. Although I haven't tried it, I know from experience this can be productive on surface fish such as yellowtail.

Small game hunting certainly helps out the dealer's arrow sales. Thousands of arrows are lost and broken annually by small game hunters. I have developed a

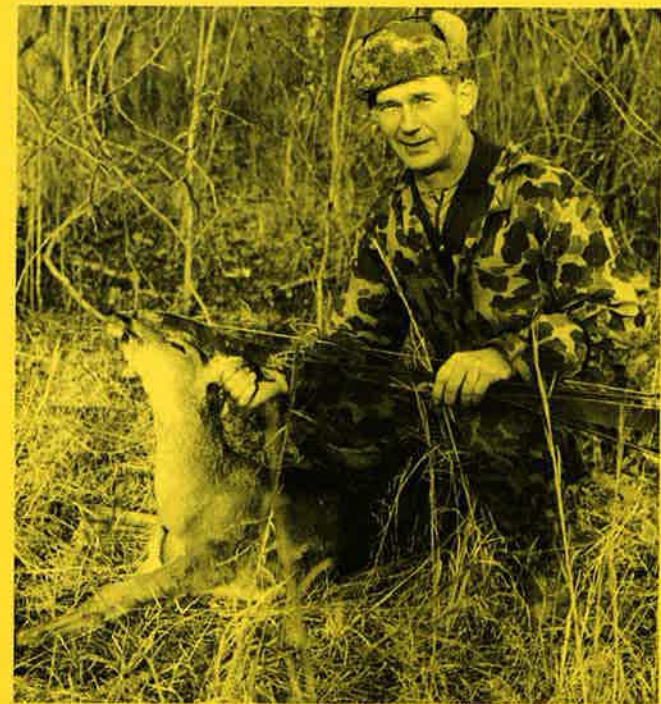
Bowhunters have the advantage of frequent doe seasons, but the female deer presents a smaller target, so there is need for plenty of practice for deadly accuracy.



Ron Chesley poses with his take of jack rabbits after a shooting session in the desert of Southern California.



The raccoon is another type of small game that can be taken with a bow, but it is an always elusive target.



habit of saving old arrows, arrows with broken broad-head and other remnants which make excellent throw-aways for the wild, carefree small game hunts. If you have a son or daughter who likes to shoot, small game hunts are ideal. Dad's broken arrows are often long enough to re-point for the kids.

My son cut his teeth on lizards. He stalks them carefully and blasts them consistently, anytime he gets inside of thirty feet. That's good shooting. It has helped him collect some bigger game and more trophies on the range than any ten year old should rightfully have.

Birds fall into the small game category, although they are difficult to collect with a bow. We hunt quail, doves, bandtail pigeons, ducks, geese, coots and pheasants every year with our bows and blunt tipped arrows. California established a trial run for bowhunters with a special pheasant season after the regular season. The success ratio was good. It made believers out of a lot of skeptics, and was a major step for bowhunting in California.

There is nothing wrong with field and target ranges for the aspiring bowhunter; they are necessary. Small-gaming it, however, is the ideal way to get ready for a crack at the big stuff. Like ol' Doug once said, "small game is big game when you hunt it with a bow and arrow." ●

The author strolls across an open field, where he was lucky enough to garner jack rabbits with broadheads.

Doug Kittredge has shot all types of small game and is one who insists that the challenge is even greater than with larger game. In this instance, it was porcupine.



Demanding also as a target for the average bowhunter is the fox. Few are taken even at night by bowhunters.

CROSSBOW

Continued from page 33

making several spare nocks a damaged one may be removed with a pair of pliers and a new one inserted. With the tight groups that are shot with the crossbow the problem of damaged nocks is greater than with the long bow.

The points of the crossbow arrows usually are weighted slightly by melted lead. The points and shaft are then weighted and lead from the point is removed until the desired weight is reached. Gurik devised an accurate method of weighting each set of arrows. He used a long, thin board supported at the center by a small screw eye. This is placed over a small, sharp edge for balancing. At one end of the stick a small nail is driven and used for a pointer. Three small brads are driven into the other end on the top side to hold the arrow and prevent it from rolling off. On the nail end of the beam a weight is placed. Gurik uses a few nails held on with a rubber band. One nail is moved farther from or closer to the center of the beam to get the correct balance for the first arrow. A scale or rule is placed at the indicating pin and the height of the end of the beam is recorded. Weight is removed from the points of the succeeding arrows until they balance at the same mark on the rule.

It is difficult to say one type of bow is better than another without taking into effect the archer's ability. A comparison of results of two quadruple American shoots two years apart shows that archers who stayed with the tried and true Bailey-type crossbow increased their scores an average of 71 points — 18 points per American round. Gurik's score increased 176 points or 44 points per American round. I changed from the Bailey type to Gurik's modified type and my score increased 336 points — 84 points per American round or about one point per arrow.

A few years ago a crossbowman who shot in the 600s was a top notch shooter. Today one has to shoot in the 700s for a chance at the trophies. With the increase in knowledge and techniques, it won't be long before some one shoots an 800 or better for the American Round. I will bet on George Gurik.

For those who are interested in getting into the very fascinating and rewarding sport of crossbow shooting, the best way is to obtain plans from The National Crossbowmen and make your own crossbow. Gurik says he will not make any to sell. This would take it out of the hobby and enjoyment stage for him.

Prices on crossbows vary from about \$30.00 to \$300.00. Some shoot well and some don't; however, high price does not guarantee a good bow. A little tuning will make all of them shoot better. When I first started I obtained one of the better quality ones and it would not put two arrows in succession on the mat at 50 yards. I made fourteen changes in the stock, bow, string, mechanism and sights before it would shoot in the 600s. My youngest boy used it to win the Ohio State Junior Crossbow championship this year, shooting better scores than some of the senior archers.

Archery is a family sport. My wife, Grace, sons David and Richard and I have been Ohio State Crossbow champions for the past three years. More people are turning to the crossbow for sport and entertainment. It is easier to shoot than the longbow, more accurate and can be more of a personalized item. Get into the sport, and help set those new records. Don't just sit back — and let George do it. ●

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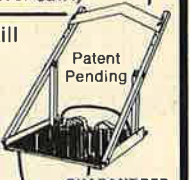


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JULY/AUGUST 1963
Build Your Own Bow by Tommy L. Bish; The Fine Line by Corky Johnson; Timing An Arrow's Flight by Martin Haynes; Testing The Short Bow by Bob Arsenault.



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LETTERS

Continued from page 6

references, the acceleration of gravity is about 32/ft/sec/sec, which means that at the end of one second, the arrow has dropped sixteen feet and at the end of the second second, it has fallen sixty-four feet, not ninety-six feet.

The other item which I found interesting and looked into was using radioactive material to recover lost arrows.

The idea could be used safely provided the right radioactive material was used and that the amount was kept small enough. After all, many people have the stuff on their glow-in-the-dark watch and clock faces.

As to whether the idea is practical, I have doubts. Geiger counters are not cheap and the Geiger tube is broken easily. A better solution: simply learn to shoot well enough to keep all your arrows in the target!

In the long run, it would require less effort than lugging around a Geiger counter and give personal satisfaction as well.

Charles Behrenwald,
Houghton, Michigan

MORE ATOMIC ARROWS

A note of concern on David Trauring's suggestion of using radioactive material and a Geiger counter to locate lost arrows.

Being an archer and having a fair amount of training in nuclear physics, I suggest you pretend never to have heard of the idea.

As the books say, "Radiation exposure, however slight, should be avoided." The thought of radioactive material flying around an archery course is enough to give me the screaming mimies.

The greatest danger would be in the event some of the hot material were liberated and were to be inhaled or ingested. Lots of radioactive materials can be handled with a fair degree of safety, but internally, it's another story. A bad one.

Frank M. Hendricks,
Old Lyme, Connecticut

(But that's what we said in the first place!)

HE'D RATHER SWITCH

I especially enjoy the hunting articles by Jim Dougherty. Realizing that he must be quite a hunter and bowman, I am wondering if he is as adept as your cover on the Jan/Feb 68 issue would have readers believe. Does he actually switch-hit or is this picture printed in reverse?

A. F. Johnstad, USN,
APO, San Francisco, California
(Yes, Dougherty started out as a right-handed shooter, then switched hands, but he still is capable of shooting well with either. It depends upon what bow comes up.)

PERFECT CONTEST

It has been two years since Saunders Archery made the first announcement of their Perfect Contest. Since then, some have been won but others extended. These have been won to date: the PAA 300 by Lester Gervias, Robert Brewer and Robert Bitner; the AIAA 300 by Donald Chapman and Bob Yotter, and the NFAA 300 by Keith Fury. Bear Archery, the Professional Archers Association, and the Indoor Operators Association have joined Saunders in a limited way, so here is what still can be won:

OUTDOOR ROUNDS: NFAA Hunter, first perfect from Saunders, \$500; NFAA Field, first perfect from Saunders, \$500; NAA Double American, first perfect from Saunders, \$500. For the PAA outdoor round, Saunders will award \$600 and PAA \$400 for a \$1,000 total.

INDOOR ROUNDS: PAA 300, perfect from Saunders \$180, plus \$120 from PAA; AIAA Four-inch bullseye 300, perfect from Bear, \$150, plus \$150 from Saunders. In the AIAA 3.2-inch bullseye competition the Indoor Operators Association will award \$1,000 for a perfect 300; \$100 for a 299 series; \$50 for a 298 series, and \$5 for a 10 perfect game.

For a perfect 300 shot in tournament play on the 3.2 AIAA bullseye, Bear will award \$150, plus an equal amount from Saunders.

There also are special awards available at some tournaments. Rules are available from Saunders Archery, Bear Archery Company, Professional Archers Association, Archery Lane Operators Association, and the American Indoor Archery Association.

Chuck Saunders,
Saunders Archery,
Columbus, Nebraska

FISH HEADS

I am a collector of hunting and fishing points used in all parts of the world. I would like to hear from others. I would trade or buy heads that I do not have.

James A. Biggers,
Youngstown, Ohio

(Those interested can write to Biggers, c/o Bowhunters Arrow Shop, 4634 Fitzgerald Avenue, Youngstown, Ohio.)

WHAT INDEX?

I have been taking **BOW & ARROW** for about three years, finding the stories and information on archery in general very interesting.

Because the information and instruction on various phases of archery are so useful, I am wondering if you have developed an index by years? If not, this would be a helpful addition to your magazine.

Bernard Sweatt,
Sonora, California

(That's one of those projects that we keep meaning to get around to.)

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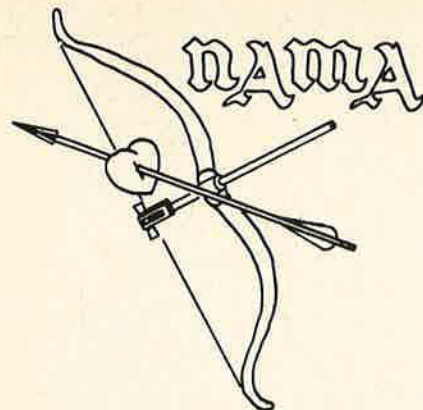
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JUNIOR OLYMPIC EVENT

The Culver Invitational Archery tournament, a Junior Olympic event, was co-sponsored by the Culver Military Academy of Indiana and the NAA, with the purpose of showing the feasibility of regional Junior Olympic tournaments. It was hoped this would draw together interest in Junior Olympic archery in preparation for the 1972 Olympics at which archery will be represented for the first time.

Bowmen representing nine teams, including the four ranking teams in the United States competed. They were: the Bowhunter's Archery Club of Battle Creek, Michigan; the Meetah-Cola Archers of Brookfield, Ohio; the Valley Dale Athletic Club of Cincinnati, and the Culver Military Academy Archery Club.

Others were the Royal Oak Archery Club, Michigan; the Bow and Que Archery Club of Flint, Michigan; the Mulett Archery Club of Lansing, Michigan; the Fort Findlay Archery Club, Findlay, Ohio, and the Morraine Archery Club of Dayton, Ohio.

COLLEGE SCHOLARSHIP

The National Field Archery Association Youth Scholarship Committee announced that application forms for the scholarship may be had by writing to NFAA Headquarters, Route 2, Box 514, Redlands, California 92373.

Rules of eligibility: 1. The applicant may be either male or female. 2. The applicant must have been or be a member of the NFAA for four years. 3. The applicant must have competed in a state championship or higher tournament in the last two years. 4. The applicant must have been active in archery and be able to express such on application. 5. The applicant must have helped to promote the interest of archery in some manner. 6. The applicant must be a senior in high school or a freshman in college at the time of application.

GOOD SPORT

The Bro-Ken Arrow Archers of West Allis, Wisconsin, would like to see other clubs spread good sportsmanship and have suggested a gimmick which they initiated last year. They held a state-wide and highly publicized Annual Good Sportsmanship Award. The winner was Arnold F. Zingen of Milwaukee. He is a member of the Wawatosa Archers, Sherwood Forest, and has been active in archery for twenty-five years.

The club accepted written nominations on the acclaimed award and a committee selected the recipient. They accept nominations throughout the year. The award is presented at a ball which this year drew 300 participants. They only judge by the letter sent in and they say the better the letter is written, the stronger chance the nominee has of winning. Anyone wishing to send in a nomination may mail it to Bro-Ken Arrow Archers, 1620 S. Eighty-first Street, West Allis, Wisconsin 53214.

INDOOR PROGRAM

All indications are that the 1968 National Field Archery Association tournament will be held in Salinas, California. The Salinas Bowmen have submitted a bid for the event and a contract has been negotiated with the club. Plans are being developed to make this a whing ding of an event. The tourney will be held during the week of July 29 through August 2.

The NFAA has decided to push their indoor program and has a booklet describing the ins and outs of getting sanction, official targets and how to form a league. All information will come from their Route 2, Box 514, Redlands, California 92373 address.

EARLY BIRD OPEN

The first Annual Early Bird Open Archery Tournament with \$1,000 in prizes will be held in June at Myers Lake Park in Canton, Ohio. Two twenty target PAA Outdoor Rounds will be shot. Fifteen places will be awarded to men and five places to women.

The ten dollar entry fee may be mailed to tournament director Ron Manist, 1415 Seventeenth Street, North East, Canton, Ohio 44705. The area has attractions which could occupy the family such as swimming, fishing, a complete amusement park and the National Professional Football Hall of Fame. Lots of motels nearby. There will be no amateur division in the tourney.



MEDAL OF MERIT

Gerald Ebert is shown presenting the NFAA Medal of Merit to Forrest Q. Hoover of the Maryland Archery Association. "This is the highlight of my archery career," Hoover commented.

He has a long list of accomplishments to his archery career. He was responsible for the formation of the Creek Waltonian Archers, where he served as an officer of the club for many years, and he personally promoted three Maryland Archery Association championships and two NFAA Mid-Atlantic championships on the grounds of his local club.

While chairman of the MAA game laws committee, he was successful in obtaining the use of fiberglass and aluminum arrows for hunting in his state. The bow season which originally started out as a thirty day season has now been extended to ninety days through his efforts in legislation.

He was given the Bowman of the Year Award in 1963 for his endeavors, has served as vice president of the MAA for three years and is presently completing his second term as president. In both of these positions he has been responsible for updating the state's by-laws, a more modern approach to the state accounting system and the final merging of the MAA with the NFAA Federation or State Associations.

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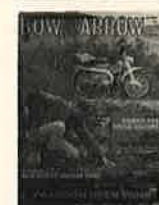
SEPT/OCT, 1967
Utah: Once In A Lifetime by Milt Lewis; Treasure Island For Bowhunters by Gerald R. Hunter; King Goat Of The Mountain by Chris Kroll.



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Africa's Big Game Full House by Bob Swinehart; Oregon: Top Bowhunting State by Truman C. Carter; Realism For Bowhunters by Jack Mell.



JAN-FEB, '68
New Mexico's Blond Bear Hunt by Jim Dougherty; Hawaiian Axis Deer Safari by Jack Lewis; A Tough Target — The Ground Squirrel by Judd Cooney; Stalking The Javelina by Ross MacKay; TESTING: The Groves Spitfire by Steven Barde.



JULY/AUGUST, 1967
New Mexico Cougar Hunt by Jim Dougherty; Bowhunter's Bush Signals by G. F. Scott.



MARCH-APRIL, '68
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THERE are some of us who work all day and play at night. Then there are those who work at night and play all day. That was the situation with Max Hamilton for thirty years. He played trumpet in bands across the country, finally settling in Phoenix, Arizona, where he joined a local band. He later organized his own and played the same night stand for nine years. This left the daylight hours, after he finally got up, to do with as he wished.

by C. R. Learn **THE PIED PIPER OF ARCHERY**

Before he settled down in Phoenix, he had been bitten by the toxophilytic bug. With all the time during the day Hamilton turned to archery. This gave him exercise he didn't get standing in front of dancers at night and proved to be his next vocation.

He made his own bows of yew in those early years. He started with Easton arrows and is still with them. In 1948 he attended the national meet in Reno using a self yew bow. It had a point-on of one hundred yards but as the heat increased the point of aim raised as the yew started to give.

He became serious about archery at this time and started to go into the fine tuning necessary to become a top archer. After yew he went to aluminum bows which didn't let down in the heat. They broke after the metal reached a fatigue point. Then came laminated bows, cruder than those of today, but still far better than anything before. This helped solve his bow problem and he turned his inquisitive mind to arrows.

The shafts were still Easton, so he felt he couldn't improve there. What about the fletch? He used feathers as everyone did then. During some of the long daylight hours in the southwest he made tests with plumage from the turkey. He marked shafts and shot them over and over under different conditions and with varying winds. The fletch varied from shot to shot.

With no fletch the shaft won't go far. Hamilton started experimenting. He took pieces of celluloid and cut vanes and managed to attach them to the Easton shafts. This was the answer. They held up fine in outdoor shooting and were always the same regardless of the weather.

The celluloid vanes worked so well for Hamilton that he had some dies made and ordered strips of celluloid from a manufacturer. Thus, from a desire to improve his score and give himself and other archers the ultimate in fine tuning of equipment, *Plastifletch* was born.

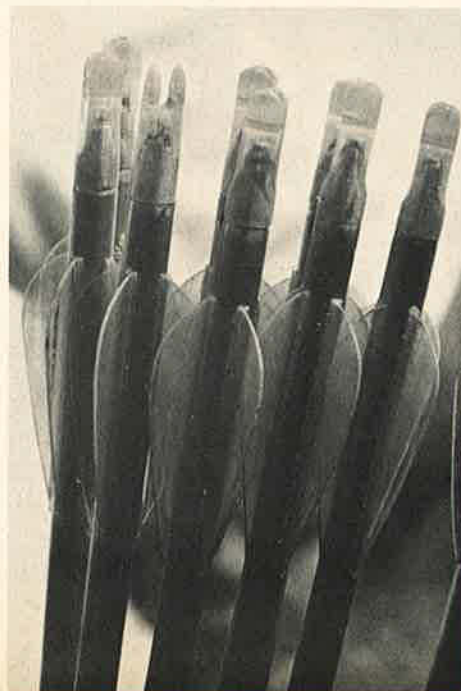
After the dies were made and the vanes on the market, the *Plastifletch* operation almost suffered a total relapse. When Hamilton gave his hybrid feathers to other archers he was told they couldn't get them to fly at all. Many of them broke on leaving the bow. What caused this interested Hamilton, since he was now an investor in his own product. Without customers, he couldn't see much future.



He Blew
Into Phoenix
With His Trumpet But
Is Making His
Reputation
Tuning
Arrows.



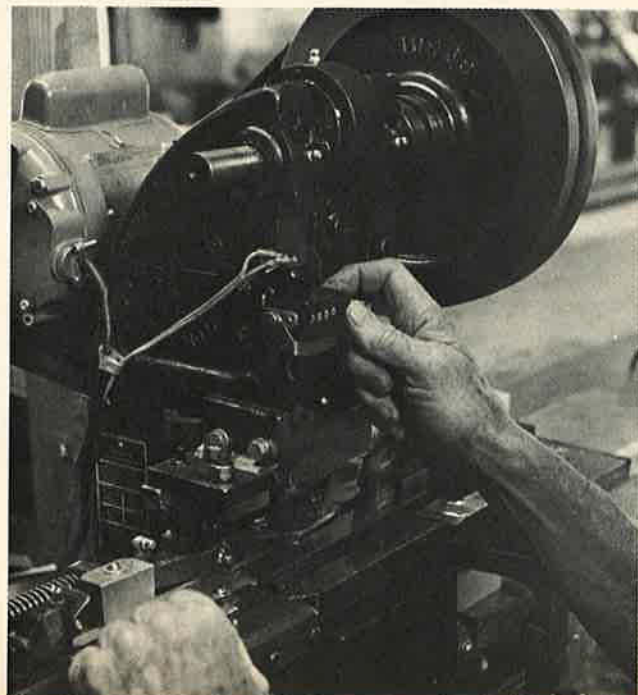
The supply shelves show part of the inventory as Hamilton checks stock. (Below) His personal set of shafts of aluminum tipped with *Glo Nocks*, and with four balloon *plastifletch*.



Hamilton demonstrates the technique of a champion as he tries out a new batch of his fletching materials.



Hamilton gave up the spotlight of the bandstand for the work light over his bench, where he runs a new batch of Plastifletch. (Below) The machine is reset for another run. It takes 21 seconds to cut a hundred of the vanes.



Julie and Max Hamilton check over an order for vanes. She does most of the administration at their plant.



He made more tests to see why Plastifletch flew great for him and bombed when others used it. He found he torqued the bow so much that the back of the shaft was kicked away from the bow as it passed the shelf. Other archers who held a loose bow or who torqued it the other way, had the problem of breaking fletch and erratic flight.

When archers ordered his product and found they couldn't shoot it, they dropped the idea. There was only one way left to prove the improved accuracy and consistent flight of Plastifletch. He had to win events using it.

This Hamilton did. In 1952, he placed second and Bob Larsen placed first in the NAA, both using Plastifletch. This proved it could be done. Other serious archers became interested. By this time other innovations such as the special arrow rests by Larry Walsh allowed the vanes to clear the bow. As the science of bow manufacture progressed, bows came out with full center-shot allowing more archers to use Plastifletch successfully.

The plastic vanes proved invaluable in the world



After the counter is reset on the machine, the plastic is lined up, a switch is thrown and the cuts are made.



Hamilton and 1963 world champ Charlie Sandlin check over plastic hunting fletch and special broadheads.

title shoots with longer distances. The uniformity of the vanes allows a faster arrow, less wind resistance and less wind drift from a crosswind since the mass of the fletch is less.

Perhaps the biggest year for the inventor-archer came in 1963, when Charlie Sandlin of Flagstaff, Hamilton's new home, won the world title using Plastifletch. More statistics would show no one has won the men's NAA since 1951 except those using the vanes. The same holds true for the world championships since 1953.

This might lead you to believe this little piece of plastic on the end of the shaft is only for the big wheels, the champs in the sport. Not true. With the new center-shot bows and the adjustable arrow rests practically anyone can shoot vanes. Not only have the bows improved over the years but Hamilton also has improved Plastifletch. He now makes the vanes with a wider base for easier fletching.

Better form and techniques also have helped those who want to reach the upper plateaus in archery. Along with this they turn to Plastifletch.

Plastifletch is now a favorite among the top archers in the United States. The foreign market is even bigger. Hamilton attributes this to the fact that abroad they shoot the longer ranges, such as the FITA, where the lower fletch and faster arrows pay off. He added that Swedish and Finnish archers wear a silk glove on their bow hands to help prevent and offset the torque of the bow. This also allows them cleaner passage of the arrow with no vane problems.

As the Plastifletch business grew and Hamilton spent more and more time on the range and at meets, his wife, Julie, a "pretty little girl with dark eyes who danced by the bandstand one night in Oklahoma," took up archery in order to see more of her husband. She now shoots in the amateur classification — with nothing but Plastifletch. She has won the state target two times, field four times and amateur national field in 1963.

In 1959 Hamilton left the night shift and moved himself, wife and business to the high, clean climes of Flagstaff. There he operates his plant and alternates work with hunting and fishing. He recently purchased

After practice session at site of their new plant, the Hamiltons pack up their tackle and call it a day.





The Hamiltons practice constantly on their own range, which is located in the mountain country or Arizona.



The various sizes of Plastifletch range from the largest to the small shield at the bottom. Shaft on left has conventional three fletch; other is experimental four-fletch. (Right) Hamilton practices with his products.

a new site for the company in order to expand. The plant was located in Bow and Arrow Acres. What else? At the new location there will be room for a full length target range. He already has seen several deer in the pines at the back of the lot.

Hamilton shoots in the 500-520 group in field and shoots over 800 consistently in the new 900 American round. He is a member of PAA and in 1965 was made a life member of the NAA when they had the national in Flagstaff.

If you never have been through this beautiful northern Arizona college town, just look for the large, black rain cloud and the town under it will be Flagstaff. Every time the author goes through or stays there it is either raining, has just rained or is getting ready for rain. This points up another advantage of Plastifletch. It is impervious to heat and thrives in rain. When the world meet is held it will continue even when it rains, and you know how feathers react to water.

Hamilton loves to hunt. He goes for the game in



Form and concentration are things to make a champion.

season and between seasons he stalks varmints. He calls them in and blasts them with vane-equipped arrows. Hamilton and Charlie Sandlin devised a broadhead that would not plane with the four biggest vanes behind them. The standard hunting broadhead will fly erratically with four P-32 vanes. Sandlin devised a broadhead that will sharp and fly true with four P-32s.

Hamilton has five deer to his credit and numerous varmints. Sandlin has brought in several deer using the same combination. Recently Hamilton was up on the San Francisco Peaks, towering mountains to the north of Flagstaff, calling varmints. He ran across one of his vanes that had been lying there for several months. Out of curiosity he brought it back to the plant and checked to see if it had shrunk or twisted. He wasn't surprised when it checked out true. It is made of cyclo-lac, a new, tough plastic.

Hamilton, who gave up blowing for the bowing, has done what most of us would like to do. He is starting a new life at the age of sixty-two. He has a good business in Plastifletch. The first three years his business were supported by his trumpet, but now he can retire the horn and rest on his vanes. He is continually developing new ideas in Plastifletch, hand locators, arrow rests and other products.

Plastifletch comes in six sizes ranging from the little P-15 (1-5/8 x 14) to P-32 (3-1/4 x 3/8). Hamilton has forty-five miles, that right, miles, of ribbed plastic he has made to his specifications in order to keep his shelves stocked. His so-called Rube Goldberg machines cut and box one hundred vanes in twenty-one seconds.

Hamilton said of his vanes, "Most people are afraid to try them. Those who tried them in the past haven't tried them with newer equipment. The champions who use them won't use anything else in outdoor competition."

He feels now that statistics are in his favor regarding the use of Plastifletch. More archers will be willing to try them. They will be surprised at the results.

The only tune Hamilton plays now is on a varmint call. He not only switched jobs but went from a horn to a reed instrument. ●

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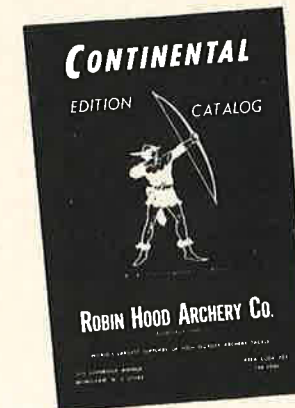
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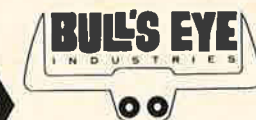
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TACKLE TIPS

Continued from page 11

and cut off flush with the end of the block using a fine bladed hacksaw. Cut the number of sleeves you will need in this manner. File the outside diameter at the ends of the sleeves to remove burrs, and deburr the inside diameter with a deburring tool or countersink similar to Figure D.

The parts at this point ready for assembly are shown in Figure C — the shaft, the sleeve, and the insert point. Scour the insert with steel wool to remove oxide for better glue holding qualities. Slip the sleeve over the insert tube and press it to the point. As the insert tube is slightly larger near the point, a good way to do this is to hold the point against wood, slip an extra piece of shafting over the insert tube against the end of the sleeve, and drive it home. Use of glue under the sleeve is optional.

Flare the open end of the insert tube very slightly with a flaring tool or a round pointed rod and hammer. Set the point against a block of hardwood to do this. The flared end will act as a lock inside the shaft. Before the insert can pull out in the bale the flared end would have to drag through all the glue.

Again place the arrow in the clamping block with two inches of the end protruding and tighten the vise. Apply glue liberally to the insert and inside the shaft. Install the insert by placing a hardwood block against the point and tapping the block with a hammer. Before the glue sets, lay the arrow in one half of the clamping block and prick punch three dimples 120 degrees apart near the end of the shaft proper as an extra safeguard against the insert pulling out.

Selecting a glue that would hold took a bit of experimenting. I tried the various archery cements as well as household glues without success. Aluminum solder would appear to be the ideal method, and perhaps a person skilled in its use could achieve good results. I tried this but found that the thin wall of the shaft became brittle from the heat and broke off. I would not recommend the solder method to the uninitiated. The only thing that worked for me was epoxy. It withstood rigid tests after curing for two or three days. I have since shot these arrows many times and not one has come apart.

Scrape excess hardened glue from the exterior of the shaft. As a finishing touch, use fine steel wool to smooth the joint and to brighten areas which were blackened by the heat when the inserts were removed. This is a good time to brighten the whole length of the shaft and prevent oxidation by applying a coat of polish or wax to give that new look to your modified arrows. ●

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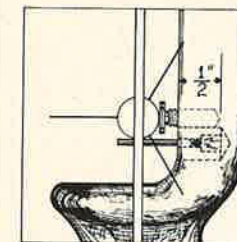
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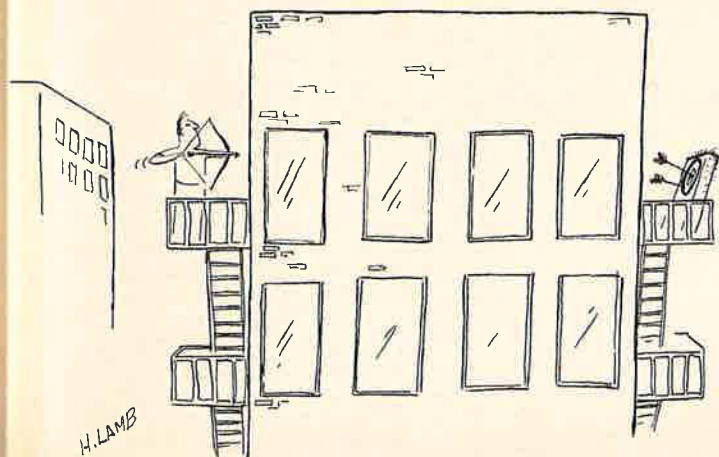
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KITTRIDGE
Continued from page 65

out of gas. But by trying the water experiment, you can see how great an amount of blood really must be spilled to cause death.

Normally, the greatest volume of blood is bled internally. That which flows on the outside comes from the wound through the hide and first layers of meaty tissue mainly. This blood often does not amount to much, misleading the hunter as to how badly the animal is hit. This is where your use of razor blades for cutting edges can be a tremendous help. Just as the nick on your face while shaving leaves a good blood trail in the bathroom, the cut through the animal's hide with a razor blade causes far more bleeding of the hide than does a duller edge of ordinary broadhead steel. If the blood flows from the hide rapidly and steadily, it is not likely to coagulate. Its continued flow insures a good blood trail for tracking, and in the case of an animal not seriously wounded otherwise, can result in the cause of death.

There are two commercial broadheads on the current market which make use of actual razor blades.

The **LITTLE SHAVER** is a conventional two-blade design, weighing about 130 grains with razor blades inserted into the pockets which form the cutting edges. Ordinary injector blades are all that is needed. This head has proven itself to be an excellent killer over the years, but has the disadvantages inherent with all two-blade heads of relatively poor external bleeding as the hole formed is a sort of a slot rather than the "hole" of a multiple bladed head. And a two-blade head is more prone to windplaning than a multiple blade head. Cost of the little Shaver is \$5 per dozen.

The new "003" by Jim Dougherty is a three-blade design with pockets forming the upper third of the cutting edge into which can be inserted either the specially made cutting blades furnished with the heads, or pieces of regular injector razor blade which have been broken off with a pair of pliers to about a third the normal length and inserted into the pockets with a dab of Plio Bond cement to prevent their dropping out unexpectedly. The overall weight of this great hunting head is 130 grains approximately. Cost is \$6.95 per dozen.

Both of these commercial heads provide the bowhunter with true razor sharpness with a minimum of effort on his part.

A part of the broadhead often overlooked is the extreme point. This should be sharpened to a needle sharpness. It is this part of the head that does the guiding through hide, meat and bone. A dull point on your broadhead can cause the arrow to deflect and glance off of even a thin rib bone.

A bowhunter must bear in mind that all broadheads must be sharpened by the hunter before he takes to the hunting trail. Even those heads using razor blades should have the points attended to and the cutting edges which are not covered by razors taken care of.

In choosing any broadhead to hunt with, the first consideration should be the ease of sharpening. A ferrule can be so large, or the blade so narrow that it is impossible to get the edge filed or stoned to a narrow enough angle for best cutting — sort of like trying to sharpen a butcher knife holding it no lower than 45 degrees to the sharpening stone. Others have steel so soft it won't hold an edge, or multiple blades which make it difficult to get a file or stone flat on the edge. I suggest you first decide the method of sharpening you wish to use — file, stone, glued-on razors, etc. Then decide on the basic head design which will adapt well to sharpening. Though ease of sharpening is the first consideration, the type of game to be hunted must be given thought. A single blade cuts only half as much tissue as a four bladed head, but it will penetrate deeper. Some heads will stand up better upon impact with heavy bone and should be a consideration when hunting thick skinned or dangerous game, particularly with a lightweight bow. Finally, consider the type of steel, general construction, cost, and so on.

So get to the point — the arrow point. Choose a head you can sharpen, in keeping with the type of game you intend to hunt and the weight of your bow, then take the time to keep those cutting edges **SHARP — RAZOR SHARP!** ●

BOW TEST
Continued from page 29

from one archer to another and each had to adjust it to his or her style. When they had it set it gave them good groups and they liked the principle but thought on a first approach basis it might be simplified a bit without so many adjustments.

The majority agreed on the nine-inch sight bar with the large peep.

The first impression they had of the Del Rey was the way the handle fitted all of them, from big men's hands to the small ladies'. But they all had one problem when shooting the bow. After they had shot for about one hour or so their left arms became tired and they started getting erratic groups. They thought the bow might be a bit too heavy in mass weight—not the draw weight but the actual physical weight of the bow itself. I had noticed my left shoulder had become a bit tender but I attributed it to a different style of shooting than I am accustomed to, so had merely passed it off to unconditioned muscles. Since they all had mentioned this I weighed the bow on the bathroom scales, not the most accurate but all I had on hand at the time and the bow, fitted with the sight and long stabilizer came close to five pounds actual physical weight. I weighed another style of tournament bow and it weighed three pounds without the stabilizer.

There are bows on the market that I have handled that have much more weight to them than the Del Rey. Perhaps it might be a different style of bow and with the Altier sight which gives you the same sight picture each time and makes you really bear down and hold the same picture each time. It might be a combination of the physical weight of the bow and the constant pattern required when shooting with the Altier. Maybe it awakened some lazy muscles as it had with me.

I was recently doing some shooting with a very light thirty-pound bow and using under chin target archer, I found that I woke up a few more muscles I hadn't noticed for some time. When using the Altier you don't change the sight after you have it adjusted to your style; you make your form meet the sight. This makes you hold the same each time just as a coach sitting on your shoulder would and maybe as in my case it took some of the sloppiness and laziness from the shooting. ●



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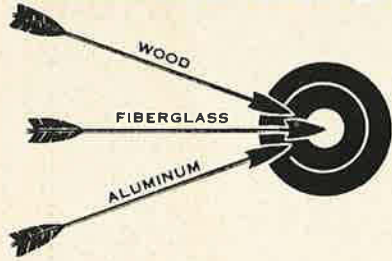
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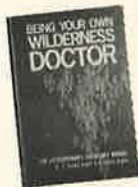
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BEING YOUR OWN WILDERNESS DOCTOR by Dr. E. Russell Kodet & Bradford Angier; Stackpole Books; \$3.95; 127 pp. This is another in the series of outdoor books on which Angier has cooperated with this publisher. Like the others before it, it offers a great deal of common sense knowledge.

Angier, who knows the outdoors, and Dr. Kodet, who knows about people, have teamed up in this instance to offer information on how to handle the sometimes painful but rarely serious health or accident problems that tend to plague the camper, hiker or simple vacationer.

The book tells you what to do in that instance, when a misstep results in a fracture, break, dislocation or swelling. By putting medical background into plain words, the writers have been able to come up with a series of treatments which should help and might possibly save one's life.

Again, the information is practical; it does not concentrate upon brain surgery or heart transplants, but it explains with great logic what to do for anything from a tick bite to a broken ankle. There is information on how to protect your eyes in the far country, what to do about stomach ailments, what to do if you're affected by cold or heat and what kind of first aid kit to take along when you go afield. Read it; you'll feel better, even if you're not going anywhere! — JD.

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