

BOW & ARROW

50 CENTS



NOV.-DEC, 1963

THE
MAGAZINE
FOR THE
ARCHERY
ENTHUSIAST

FLETCH YOUR OWN ARROWS

Portrait Of A Champ

**FACTS ON
FOX HUNTING**

BEGINNER PROBLEMS & CURES



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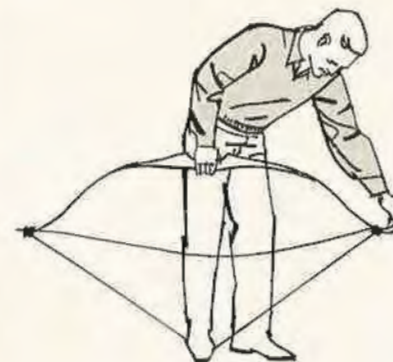
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BOW & ARROW

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VOL. I, NO. 4 NOVEMBER-DECEMBER, 1963

ON THE COVER: Colt's new Heritage bow is featured with the sensational — and possibly controversial — electronic sight. The latter is discussed at length in this issue.

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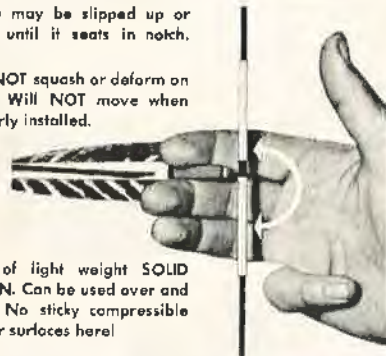
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Mail Pouch

NEOPHYTE ARCHER

In the words of Erle Stanley Gardner (see *Mail Pouch*, July-August '63 issue), I am a neophyte and an outcast and will probably remain so. Hunting occasionally, semi-finals in a round with the neighbors — that kind of thing, which is the compromise I make with my wife, and my enthusiasm.

The article on Jim Pickering showed some of the best pictures I've seen on grip and aiming. So thanks for a fine publication and give me some elementary instruction on how to hit the target.

Richard A. Sturly,
Kirkville, New York

(Hitting the target is a problem that a good many of us have, but one of the best series of instructional photos we have seen were those featuring Hank Krohn and Jan Moriarity in our Sept.-Oct. '63 issue.)

EUROPEAN REPORT

Received the first issue of B&A from a friend in the States. Put me on your list as a subscriber. It's cheap at the price.

Here in Europe, we are growing and at present have thirty-two clubs. We, too, are interested in promoting archery and to this end have an intensive campaign to publish news and information. As the magazine has not made an appearance on our newsstands as yet, we request permission to reproduce *All Year Hunting* by Martin Haynes and *Bow and Terror* by Bob Said. Full credit will be given. The items will be published in our Rod and Gun Club magazine, *Rod and Gun*, if permission is given.

Captain J. M. Locke,
NFAA Board of Field
Governors,
Headquarters, 10th Arty Gp,
APO 29, New York, N.Y.

(Permission granted, sir!)

CANADIAN CAPER

I would first like to commend you on your fine magazine. This is the first archery magazine that really does justice to the sport. I have been fortunate enough to have been able to obtain the last two issues.

Archery, here north of the border, is a relatively new sport with but a few adherents in each town and city. However we do have a national organization, the Canadian Archery Association, and at least one Provincial organization that I know of, namely the Hunting and

Field Archers of Ontario. I think that because of our relatively small population, great distances, short summers and long cold winters, it is difficult for the average person to maintain an active interest. Those who have managed to overcome the difficulty are truly hard core archers who are still building from modest beginnings.

Judging from your articles, I would say that we are five years behind.

L. K. Jerrard,
Saskatoon, Sask.,
Canada

(In view of the long winter nights, this might be good country in which to put up some indoor archery lanes!)

MORSE CODED ARROWS

Here is an idea that I use in putting cresting on; a Morse code system, narrow lines or stripes for dots and wide lines for dashes on the shaft. This solves picking out a cresting design and your name or initials can be put right on the arrow in this manner.

I believe every archer has come up with some pet methods and I believe putting their ideas in your magazine would create more interest.

Howard G. Minter,
East Dundee, Illinois

(So send us your ideas; we'll be happy to pass them on.)

AMATEUR PROBLEM

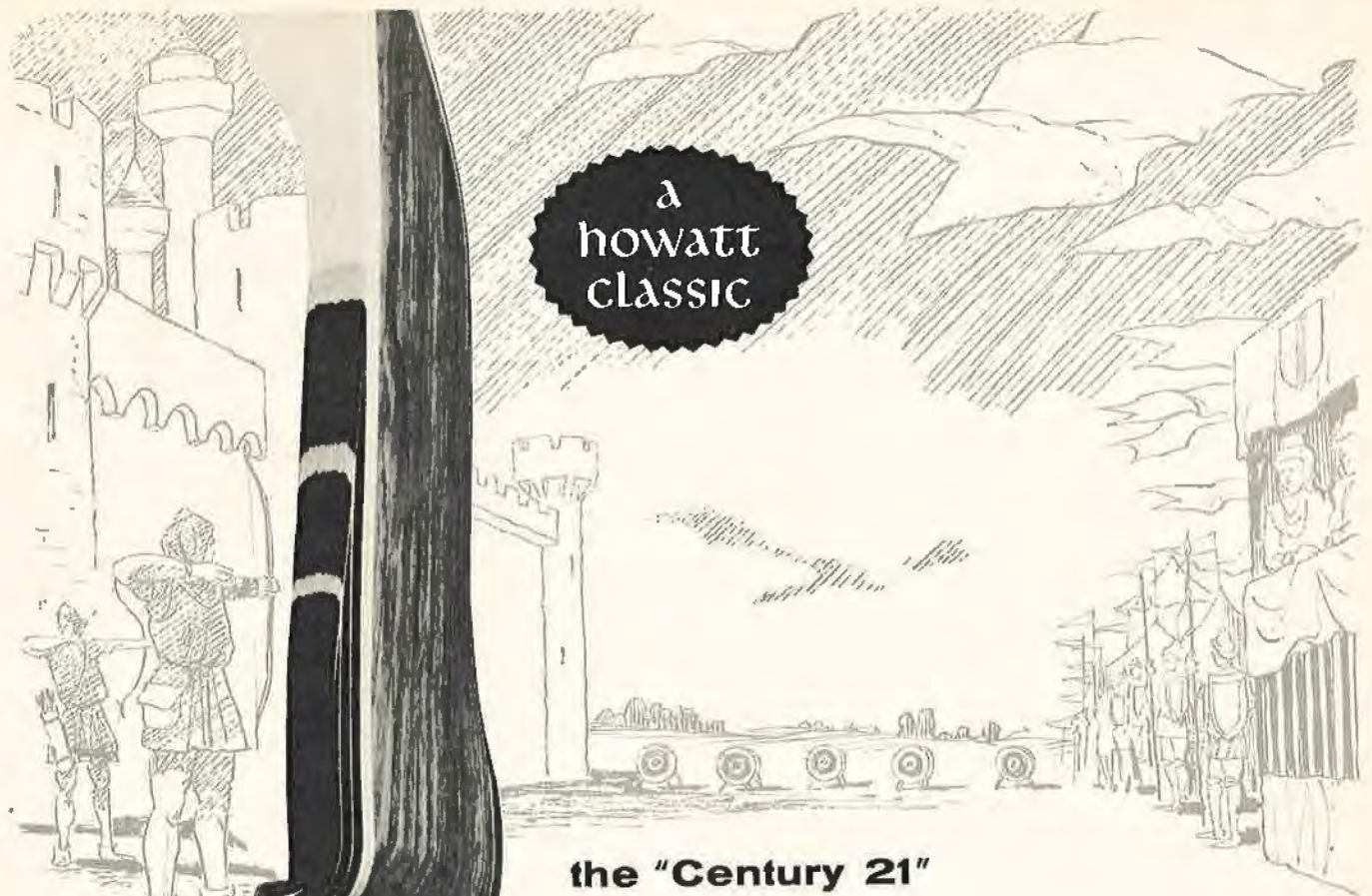
I was pleased to see your article, *1964 Olympics: Gone But Not Forgotten*. (BOW & ARROW July-Aug '63 issue). Your interviews with Jim Cavanaugh and Doug Easton reflected more on this highly controversial subject of amateur, non-amateur and professionalism than you indicated in your story.

Southern Michigan is feeling the pains of misunderstanding relative to amateur, non-amateur and professionalism now more than ever. Many of us have, in the last year or two, realized the importance of protecting the amateur's standing, but because of the system now used in Michigan, we are still neglecting it. Ninety-five percent of the members in this association would qualify as amateurs by all NAA rules except Rule 8, and are truly amateurs in desire and intent.

Today, in Michigan Field Archery, non-amateurs and professionals alike shoot in five score-based classes for trophy awards, while the amateurs shoot in one class with no distinction between divisions except men and women.

The title Non-Amateur should be "Semi-Professional" or "Professional." This perhaps would be a

(Continued on page 60)



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HUNTING WITH Doug Kittredge

Noise can help you get more game! The right sound, made at the right time, can be pure magic for the skillful bowhunter. The trick is knowing what sound to make and when to make it.

Sound plays a most important part in the life of wary wild animals. Much of what action they take is based on the sounds heard . . . or not heard. Some sounds can be instantly frightening, while others get a reaction of alert attention, but do not frighten. Sound can arouse curiosity or soothe an alerted animal. Some can attract and bring the critter to within petting distance of the hunter making them.

Anyone can learn to make a number of useful sounds, using your natural voice, materials at hand, or a commercial game call. The knowing bowhunter can use sound to bring the animal to him, to stop him, or to move him into a better shooting position. Often times, sounds occur from other sources than the hunter, himself, and knowing how the game will react gives the hunter opportunity to put himself in an advantageous position for a shot.

Outdoor sounds fall roughly into four general categories:

(1) Those that alarm and frighten into instant flight. (2)

Those that alert and get attention, but do not cause flight. (3) Those that attract the game to come into the sound. (4) Those that calm, soothe and reassure. Sounds from all of these categories can be of valuable use to the bowhunter.

Sounds which alarm and frighten game are sometimes used to flush game from dense brush. In India, loud noise plays an important part in moving game to the hunter during organized hunts. How often have you passed a dense clump of brush or aspen patch and thrown a rock into the center of it to flush out game on the other side?

The popular Herter's Rabbit Flusher call is designed to make a high pitched scream such as a hunting hawk might make, a noise calculated to cause rabbits to move so the hunter can see them and get a shot.

Sound that alerts game but does not cause flight can be of use when a couple of hunters are working together. A couple of years ago I was working down a steep canyon into a feed ground where several nice bucks were browsing. My hunting partner, Jack Howard, remained high on the opposite canyon wall so he could direct me through the maze of brush. All of a sudden from his violent motions I realized I must be very close to my quarry. After freezing for a few moments I cautiously started around a clump of scrub oak and found myself eye-ball to eye-ball with a beautiful old four pointer not fifteen feet away. He had me riveted with his eyes and I didn't dare bat an eyelash, let alone start to draw. Jack's application of an attention getting sound saved the day . . . he started whistling softly and waving his arms. The buck immediately turned his head to look up the canyon at Jack and I was left with the most perfect shot a bowhunter could want — a buck but feet

away, with his full attention elsewhere. For the record, I missed . . . but that's another story!

Very often, though, hunting partners can make use of a whistle, a grunt or other sound to get the attention of an animal away from their partner . . . or the use of an alarm noise to move the animal towards the other hunter. All sounds mean something to a wild animal. He pays strict attention to every sound he hears. If the sound is recognized as dangerous and close to hand, he bolts; if farther away, he moves off more slowly. If the sound is known to be normal to the area and time of day, such as the squeak of a mouse, movement of other deer, call of a bird, etc. he pays no attention. When the sound isn't recognized, he comes to full attention and remains motionless until he determines whether it is friend or foe.

A sound which the animal immediately associates with a human is frightening and will cause him to move away from the sound . . . a cough, voices, ticking of a watch. A sound he doesn't understand, like the soft twang of a bowstring, will bring him to full attention until he determines what the sound was.

Animals can be brought towards a sound through its arousing their curiosity. Soft sounds which the animal does not know the source of and can't explain, often can cause him to investigate through natural curiosity. An old timer I once met in the back country told me that he could sit down patiently in rabbit country and by packing and scratching the ground gently with a stick, very often he would have a rabbit or other small animal slowly sneak up on him to see what was going on. The ticking of a clock left under a pile of pine needles will cause deer to closely investigate during the night as evidenced by the number of hoof prints found the next day. The use of a high pitched varmint call as a wavering bleat can call up all sorts of animals through curiosity . . . animals which are not predators, such as deer, antelope or pigs.

Most commercial game calls normally work by imitating the actual sounds of the animal being hunted. By talking his language, you can tell him to come in and see what's going on. You appeal either to his hunger for food, sex, or other animals of his type. There are game calls on the market for just about every species of game. The best way to learn to use one is to buy a record of the actual animal sound. Listening first to the record and then trying to imitate the sound with the call.

A sound which creates a situation of interest in the mind of the hunted animal will also bring him in. Rubbing and knocking together of antlers during the rutting season can be like a magnet to a pugnacious deer or elk who thinks the sound comes from a couple of his fellows butting heads.

The growing sport of calling predatory animals such as bobcat, coyote or fox is based upon making the sound of a seriously injured and frightened small animal which the predator could easily capture as a free meal. Here you make no attempt to sound like the animal you are after; instead you try to sound like the animal he wants to eat. Just the squeaking sound of a defenseless field mouse as though caught in the crotch of a sage bush can call up a hungry hawk or bobcat.

Often the sound of an animal natural to the area can act as a calming agent to game the hunter has accidentally alarmed. During a stalk, a deerhunter might unexpectedly pop a small branch just as he is getting close to his quarry. The soft bleat on a rubber band deer call can sound like a small deer to the herd ahead and reassure them that there is no danger.

There are noises a careful bowhunter should guard against making. The wearing of hard surfaced clothing invites a loud scratching noise when the hunter moves through brush . . . a noise game immediately associates with humans. Better is to wear soft woollens with a nap which deadens a scratching branch and makes it sound more like brush against animal hair.

(Continued on page 38)

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TACKLE TIPS

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Rangel

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Louis Rangel's archery career began in his backyard with a Ben Pearson all glass bow. Six years later, this career came to a climax when he won the California State Barebow Championship, then a month later won the National Instinctive Championship at Running Springs, California.

This was his first attempt at a national title, but he had undergone five previous frustrating attempts at the California State Title. Many an archer's climb to fame is almost meteoric, the path seemingly paved with gold and silver, but Louis' road up has been one of many pitfalls and obstacles that had to be cleared one at a time, then sometimes relearned. Had he not had that intense, burning desire to be a champion archer, I am sure he would not have survived his six-year climb to the winner's circle.

Our paths crossed not long after Louis had been bitten by the archery bug. He had just purchased his first recurve bow, but already had a few of the regular archers' eyebrows raised as to his shooting form. I could readily see why, when I first saw him in action. His release was almost

flawless, and in my estimation, as close to a natural as I had ever seen. His scores on the field range progressed at a rapid pace and I was happy, to say the least, when he decided to buy one of my bows, as I knew that he was going to be a top archer before too much time had passed.

My prediction came true almost too fast to believe, as within a year he was in the Championship Class in the Riverside (Calif.) Archery Club.

But about this time Louis' problems started popping up. He would shoot a good tournament score one Sunday and the very next Sunday he might be 100 to 150 points off pace. This went on for sometime and he was becoming frustrated with the whole works. As illustration of the extreme fluctuation in his scores, two tournaments come to mind. One was a regional shoot at which he shot a 917 field score, in those days fantastic barebow shooting. The very next Sunday, in our regular club shoot, he turned in a 746. This shooting was done with the same bow, the same arrows and the same string.

Clues to his probable troubles? There were clues, but

nothing to bear them out at the time. Louis was a little temperamental in his early archery career and if he would goof three or four targets in a row, he invariably would blow up altogether. Apparently he felt when he goofed these targets that he was all washed up for that day's shooting. Then his troubles became magnified and he would come all unglued.

Even so, he managed to place second at the 1959 California State Tournament and had he shot his average he could have won it.

Right after this state shoot, Louis and I delved seriously into his problem to determine whether we could come up with something concrete from which to work.

His worst problem came from left arrows, so we elected to start with his equipment and try to pin-point something from this angle.

The center-shot in his bow was good and the arrows he was using at the time fell into the bow weight spine-wise. He was not getting any finger pinch from the sixty-six-inch bow, the ends of the bow were in alignment and the bow was tillered perfectly for his low hold. This then just about eliminated any fault in his equipment, so we then started in on Louis.

His release was about the best I had ever seen and his bow arm was good and stable, so we went to his bow hand — and this was the payoff.

In those days, bow handles as a whole were not much and almost all of the archers with whom I came in contact either shot a high or straight-through wrist. As a result, we made the bows for these types of holds.

On a good score day, Louis apparently had no trouble in placing his hand on the handle the same way every time, but if he should start slipping off at any time, then he would go into the bow handle too far and this then would torque the bow to the right, as he shot; hence the left arrows. It took several glue jobs to build out the handle so that it felt right for his flat hand style of holding the bow, but with this build-out, he could place his hand the same without fear of it slipping off.

His top scores did not improve greatly from this new handle, as they were the best in those days, but he was much more consistent in scoring from day to day than he had been previously.

The 1960 State Shoot was to be held in Los Angeles and we felt that Louis had every chance of winning it. He had placed second in the sectional elimination shoot in Southern California and more important, felt good about his chances for the big one. But the day before the state finals were to begin, Louis changed from the regular speed nocks he had been using to the mid-nocks.

This was his undoing as on the field round, he mis-nocked about every third arrow and beat his bow arm black and blue in the process. He changed nocks after this first round, but it was too late in the game for a comeback, as he was too far down in score by this time.

Whatever possessed him to make the change, I will never know, but it did prove a costly move.

At this time, Louis' alignment problems were more or less licked and he wanted to work on a tighter bracket between arrow and target. He felt that if he could tighten up this bracket, he would be more consistent in his elevation on the mid-range targets. With his normal anchor which split his lip with the index and third finger his point-on was about 75 to 80 yards. This put him a long ways from his closer targets. He went to larger fletching, but it only brought him down a few yards, so he started experimenting with heavier shafts.

We went from the 1916 that he had been using to 1918 and 1820. Both of these shafts were spined for bows in the sixty-pound range, so we had to change the center-shot of his bow to accommodate them.

With these heavier shafts he was able to bring his point-on down about ten yards, but they gave him a high tra-

(Continued on page 40)

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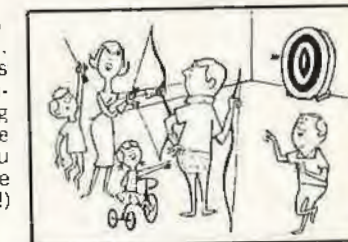
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- 60°

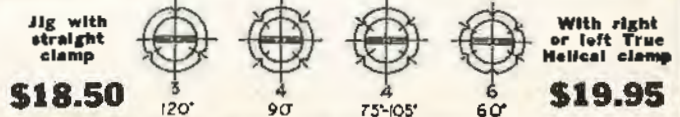
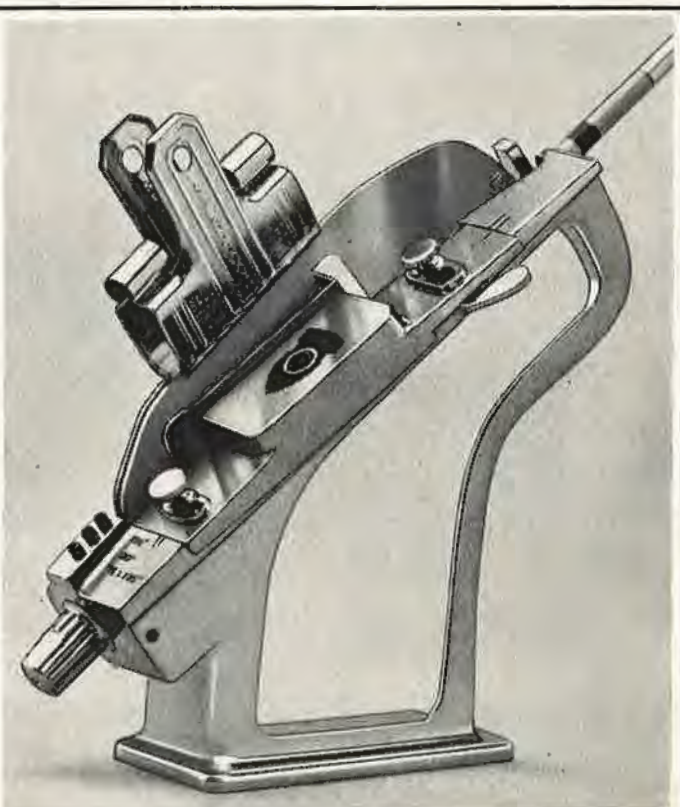
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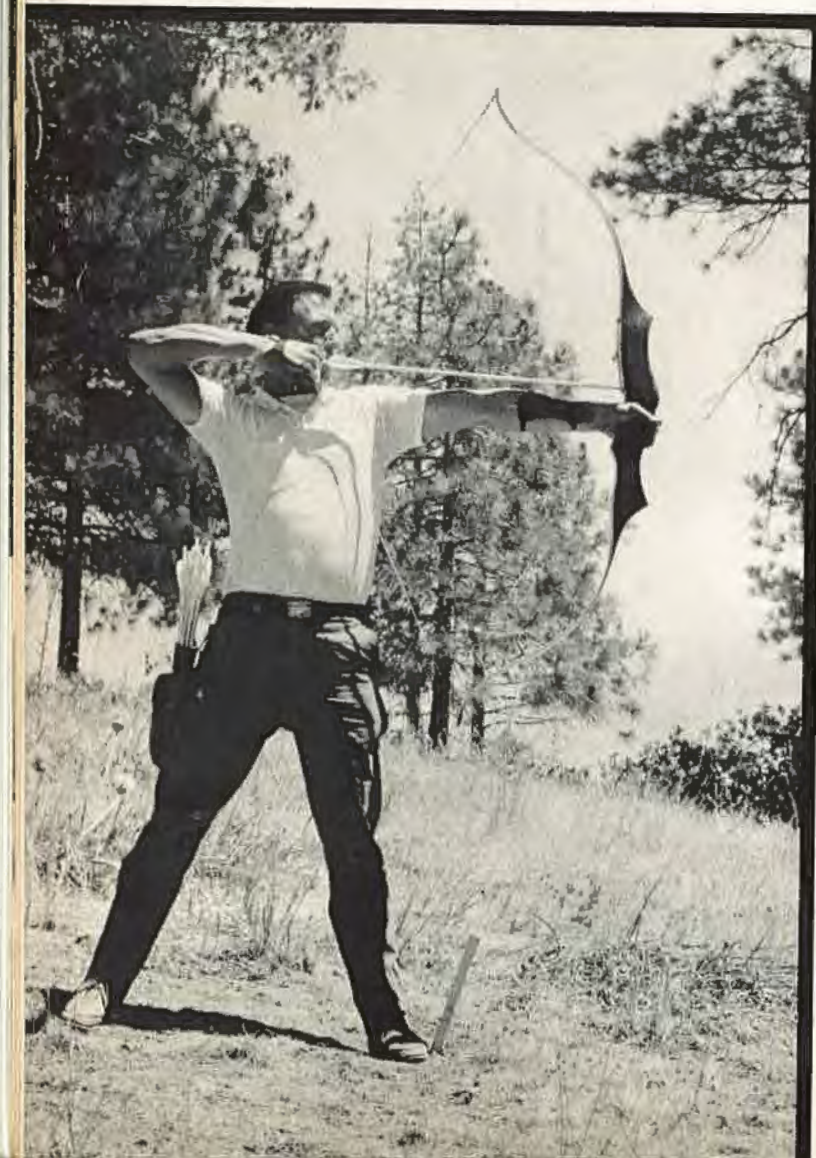
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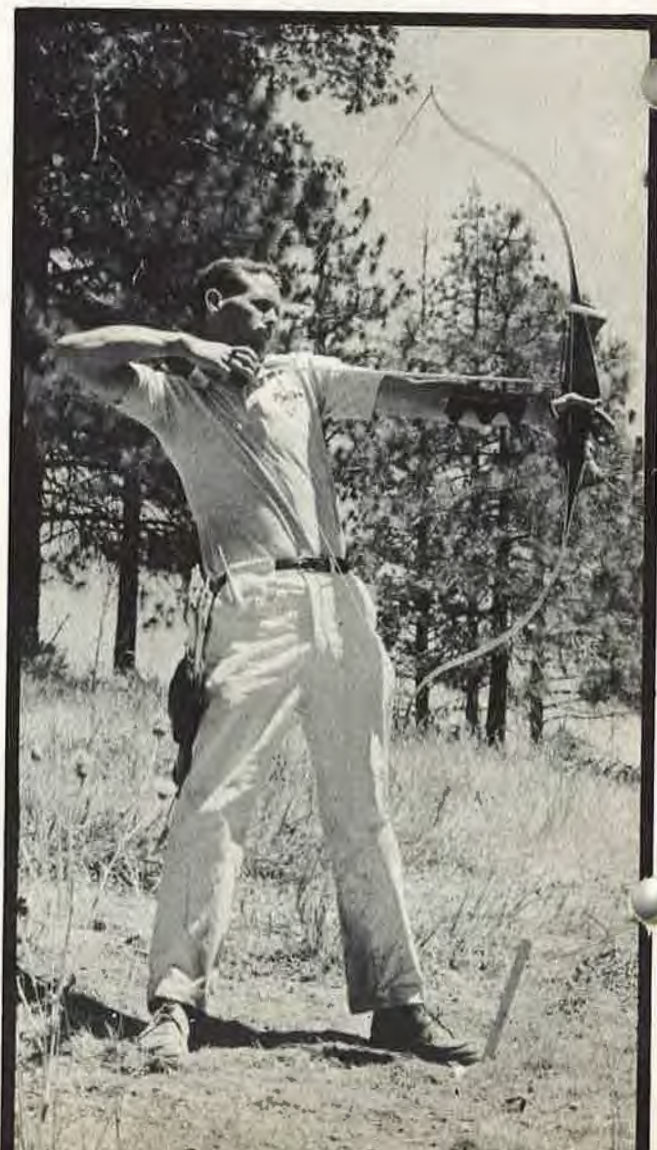
Don Cavallero

Freestyle winner of the 1963 NFAA tournament repeated his win of last year, but with a much lower score due to rougher terrain, he felt. He won with favorite Wing bow.



Bill Partin

Representing the American Archery Company of Chicago in the professional ranks also repeated his 1962 positioning, placing second behind Cavallero with Cheetah bow.



FIELD ARCHERY can hardly be called a spectator sport. Unlike golf, for example, it is rare if ever that an entourage of fanatics and fans can be found following the archers over hill and gulch in pursuit of that elusive championship. The course is just too tough in many instances to be considered a pleasure outing.

During the 1963 National Field Archery Tournament, however, BOW & ARROW made arrangements to literally follow the leaders on the final course for the championship. The competitors were last year's winner in the freestyle category, Don Cavallero of Pasadena, California; Jim Pickering of Salt Lake City, Utah, who won this spring's Ben Pearson Open in the professional category; Bill Partin of Ohio, 1962 runner up to Cavallero and Bob Lorch of San Diego, California, a newcomer to the tournament circuit.

The only other three persons included in this exclusive group were Al Henderson, the NFAA field (Continued on next page)

Jim Pickering

Winner of this years big money in the Ben Pearson Open, he came down from the Utah hills with his Richards bow to place third, being edged out by Partin by four points.



Bob Lorch

A San Diego, California, archer, he was a dark horse, as this was his first national tournament. He used a Hoyt bow to confound the more experienced shooters in tourney.





Cavallero trots up a rough, narrow trail (above) while other three follow, enroute to next target. (Right) Jim Pickering takes a ten second breather, a necessity before shooting at high altitudes. (Below) This unlikely angle for shooting is evidence of hardships of course.



Partin replaces canteen after sip on the 14th target of final course. To left of canteen is his oxygen bottle, but he did not use it on last day, being acclimatized.



Cavallero spins an arrow on his fingers to determine if it has become warped or bent during scramble in rough terrain. Aluminum shafts can suffer from such hard use.

Below: This study of facial expressions an instant after release during final phase of tournament shows traces of pressure under which they are shooting. From top: Cavallero offers a study in concentration and weariness; Partin has eyes on the target, still judging his shot; Lorch's expression seems to say he's made better shots.



judge; Cavallero's wife, and Ray Rich of BOW & ARROW. When it was all over, Rich — pooped and panting — returned for a beer, film coming out of every pocket. On these pages is his photographic record of what happened on that final round. According to him, there was little to be had but pictures.

"I was hoping that I'd get some good quotes for this story," he complained wearily, "but they loused me up. Nobody talked. They were all too busy concentrating on shooting and climbing those cotton-pickin' mountains."

But he was convinced that even the top shooters had not had — or taken — an opportunity to follow four of the hottest archers in the country, watching their reactions, observing the play of nerves and tensions which affected each of the four.

It was obvious that all of these four shooters had ultimate respect for each other, but there was minimum talk. Occasionally, one of them might comment, "good shot," but there was little else. Mrs. Cavallero followed the entire course, but made certain she always was in the background, never a confusing influence. Her husband, attempting to retain his title, was deep in concentration and seemed hardly to notice her through the twenty-eight target course.

Of this quartet, Partin and Pickering were carrying score cards and were doing the book work after every target had been shot by each of the foursome. As the group gathered about a target, Lorch would invariably call off the scores, "Don, twenty points; Bill, eighteen;" et cetera, while the two scorekeepers would write down the results. Cavallero seemed to take little interest in a comparison of scores on the individual targets. In almost every case, Rich found, he would continue on up (or down) the mountainside to the next position. It may have been





Below: This game target, holding arrows of these four competitors, affords an idea of the type of shooting being accomplished in race for lead.



Bob Lorch reaches over shoulder for an arrow; he was one of very few who used a back-type hunting quiver. The game target on opposite hillside proved difficult because of the distance and lighting conditions, unlevel terrain. Cavallero admitted he had a psychological block against this particular game target in spite of the fact that he made an excellent shot.

that he was doing this in order to get as much rest as possible before shooting.

Once the entire group had gathered, they would — still wordless — step up to the marks and begin shooting. The process just described would be repeated and this entourage would be off to the next target. Normally, the contenders shot only one arrow. Under the rules of this type of competition, the archer can use as many as three arrows on the animal target course. With his first arrow, he rates twenty points if he scores in the "kill" zone or sixteen for a hit.

(Continued on page 31)

Partin (left) and Pickering were scorekeepers, and compared cards after fourteenth target, trying to determine discrepancies. Sportsmanship displayed itself when Lorch reported he had shot 16 instead of the wrongly recorded 20 points on a particular target. This settled the problem.



Al Henderson, NFAA tournament official, checks target to determine whether it is liner or not. Line was fuzzy but Cavallero was given benefit of doubt.



Cavallero pauses on hilltop to judge his next target in final stages of the tournament. Stance illustrates indecision as to how to try the shot.

Right: After last target, the winner showed his weariness, while scores are being totalled. In background, his wife wrings her hands nervously.



Below: Scores still are not officially totalled, but Pickering offers his congratulations to Cavallero as repeat winner of the tournament.



LURING ONE OF THESE CRITTERS
CLOSE IS NOT A PROBLEM;
HITTING ONE WITH AN ARROW IS!
By Russell Tinsley

CHALLENGE OF FOX CALLING



Left: Getting concealed so that your silhouette is broken is necessary; (below) hold nocked arrow and bow in shooting hand to avoid as much movement as possible when game shows.



"Now!" Murry hissed urgently. "Shoot!"

I glanced around to see what he was all excited about. The unexpected sight made my heart skip a beat. Not ten feet away, stood a gray fox, busy tail twitching provocatively, alert eyes searching for whatever was causing the dying-rabbit squeals.

Somehow regathering my composure, I got my bow eased around and drew back on the string. It looked easy . . . ridiculously easy.

But sometimes a man can be lured into false confidence. That fox appeared so large that it seemed impossible to miss it. Right then I would have bet my last broadhead that I could have rushed that critter into the promised land for foxes, and given odds at that. There never was any doubt in my mind about connecting when I

brought the arrow to full draw and let go.

Murry's talented calling had lured the fox almost close enough for me to reach out and touch it. Murry, one of the Burnham brothers of game-call fame, had positioned me perfectly for the ambush. Despite the fact that the fox had come in on my blind side, I now had it dead to rights.

It was late afternoon with the sun hanging like a big Christmas ball in the hazy Texas sky, just above the oaks and cedar trees. We had walked off into the cow pasture until some two hundred yards from where we parked the pickup we came to a fairly large clearing rimmed by brush. It was a typical Texas early fall day, humid and still, and I was sweating under my camouflage suit as Murry instructed me to push back against a squat cedar bush so that I would blend with the background. Then he walked off a few yards and hunkered behind another cedar and went to work on his predator call.

A talented game caller can bring fox into real close range, as the author learned the hard way in this shoot.

The high-pitched cries, dripping with distress, rushed out across the countryside. I gripped my bow tightly with sweaty hands as I intently scrutinized the sweep of terrain ahead of me, and it was only short moments later when Murry whispered his insistent command to shoot.

The arrow lanced out, but lo and behold, it hit where the fox had been, not where it was going. During that infinite instant when the projectile was in flight, the fox moved a few quick steps and the arrow ricocheted against the ground and skittered harmlessly across the rocky soil into the brush.

The zing of the razorhead nicking a rock spooked the fox and it took off like a balloon that has been released full of air, zig-zagging crazily through the trees and brush.

I was still shaking my head in disbelief when I emerged from hiding.

"Doggone it Murry," I complained. "That fox moved just as I got on 'im."

Murry grinned knowingly. "I should have warned you to anticipate," he explained with a chuckle. "That's what makes fox hunting so tough. One is always on the move and you've got to learn to lead him, just like you lead a bird with a shotgun."

I'd never paid any particular attention to this now-it-is-there, now-it-is-not behavior of the fox before, despite the fact that I've been dabbling in game calling for years. Maybe it just wasn't important when I was armed with a rifle. But bowhunting is different. The bowhunter, as we've all come to learn the hard way, has certain handicaps and we must accept these limitations and work for shots which are within the realm of both our own abilities and the scope of our equipment.

Thus, this is just one of the things we must contend with in fox calling. Another is that there just isn't much animal to shoot at; much less in fact than most people would first imagine. Since that episode described in the beginning of this narrative, my first introduction, incidentally, to fox hunting with bow-and-arrow, I've witnessed some of the most accomplished bowmen in the business frustrated when trying for foxes. I don't feel so badly about it any more. I'm just another face in the crowd.

But to advance to this stage, actually shooting at the fox, we must splice in some more basic fundamentals of fox calling. That is, getting the critter in position for a shot in the first place. This isn't nearly as difficult as it might seem. A foolish fox is a sucker for a game call and commercial calls now on the market put the sport within anyone's ability. I've seen many novices call up foxes the first time they tried the sport.

Now there is fox calling and fox calling. By this, I mean calling one within eyesight and calling one close enough to shoot at it with bow-and-arrow. It is almost like talking of two different operations.

Just getting one in the open is simple. Some of the tunes played

by game callers on predator calls are outlandish. Yet they attract foxes. Gosh knows why, but they do. However, scant few of these callers can bring the critters on within hand-shaking distance. This separates the skilled from the hap-hazard.

This close-in calling demands that the hunter pay strict attention to his ABC's of calling technique. But even at that, the idea of bringing an animal to you makes better sense than trying to beat a super-wary animal on its own terms in its own bailiwick, trying to stalk close enough for a shot. In game calling, the hunter waits in ambush and the animal moves about, making the mistakes. For this reason, bow hunting and game calling make perfect companion sports.

So where does one get started?

First, naturally, he needs a call, available at most any sporting goods store. Also available are recordings which show the proper technique. If possible, get one and listen to it. This is a shortcut to success.

The next step is to get the executing weapon, the bow-and-arrow. I assume that you are schooled on this phase. If not, any hunting bow will work okay. Use broadheads rather than blunts since a fox is tougher than most people give it credit for being. A blunt simply won't kill it on the spot.

Another assist to equipment is camouflage clothing. Not vitally necessary, but it helps. If you do not have such garb, wear something dark and drab where you won't stand out when in concealment.

Okay, you're armed and ready. Now to go looking for a place to hunt. This is the most important single step, yet one that often is overlooked. Most people assume that foxes are everywhere. Indeed, it seems that way at times. But like anything else, foxes are concentrated in certain areas and if you are hunting in the better fox habitat, you stand a much better chance of success. Elementary.

There is no sure fire way of pinpointing the best fox terrain. You can get a wildlife book and study up on its habits and that helps some. So does scouting around and inquiring of people in the know, like rural postmen, asking where they've seen foxes, or ask game wardens and landowners. You try to get some inkling as to the best place to go, then try it. That's about the best you can do.

Author declares there is nothing like that first fox you bag; there'll be many misses in learning technique.

This would be fine and dandy if all the country you scouted was virgin territory. But alas, game calling is a fast-growing sport and there's an outside chance that the spot you picked was similarly picked by another game caller earlier. A fox once fooled is a wise fox. Seldom can you get it to answer again right away. Often it is difficult even after a time lapse of several months.

I've seen callers who kept returning to the same place time after time. Right away they started complaining that action was diminishing. At first the hunting was great, but after one or two trips the foxes refused to cooperate. What these well-meaning hunters didn't realize is that they were saturating the area. The right approach would have been to look for another location, letting this one rest for a reasonable length of time, a month or more.

Consequently, now our problem of finding a place to hunt is compounded. There usually is no sure way of knowing whether or not an area has been called unless you go and try for yourself. But I'm bringing this point into focus simply to let you know why often you'll draw a blank in an area that reputedly has a goodly population of foxes. There is more to the sport than meets the eye.

Now to the actual calling technique. Station yourself where you can command a fairly wide swath of land. Sometimes it pays to climb to the low forks of a tree to escape detection. A fox is less apt to glimpse something which is elevated. Otherwise, push back against a bush or crouch under low-hanging limbs, anything to break your silhouette.

Put any prevailing breeze in your face. The less wind, the better for calling. A high wind tends to muffle the call and blows it in the direction you don't want it to go, downwind. Any animal which approaches from downwind will get a whiff of human scent, and no critter of the wilds ignores this danger signal.

Nock the arrow and hold your bow in your shooting hand. This way you'll avoid as much unnecessary motion as possible when getting into position for release. Now go to work on the call. Blow strongly at first. You wish to broadcast the rabbit-in-distress cries for as great a distance as possible. All the while, watch in a full circle around you. I know a fox isn't supposed to come from downwind, but experience has taught me to anticipate the unexpected.

Once a fox comes into view, tone down your call. This is important. A harsh call might tend to drive it

off. Make it almost inaudible squeaks. Some callers do this by sucking on the back of their hands. It isn't hard. With a little practice you can get the tone and pitch down pat.

If the critter stays off in the distance and barks, that means it knows something is up and it is spooky. Probably it won't come any closer. On rare occasions I have had barking foxes finally come on in, but it doesn't happen often.

As you lure the fox into the ambush, pay attention to its eyes. When they are looking in another direction, you can move; if they are trained directly at you, make like a statue. And when you do decide to move, make your motions slow and deliberate, not jerky. Such movement is less likely to be noticed.

Remember the tendency is to overshoot when you're at ground level. Aim at the lower half of the fox's body. And as Murry earlier explained, learn to anticipate and shoot where you think the fox will be, not where it is standing. This jittery behavior of the fox will make you miss much more frequently than you'll connect, but that's one of the challenges which makes this the fascinating, thrilling sport it is.

The crucial period is that interval when you first see the fox until you coax it close enough for a shot. Sometimes one that has never been called, particularly a young one, will rush right on in, oblivious of any danger. The tendency is to make your play too soon. Hold off until you think the fox has approached as close as it intends to come and then; only then, take a shot. The closer you have it, the better are your chances of scoring.

Early and late in the day are the best times to call foxes. Around daybreak and again just before dusk. The nocturnal-prowling critters also are susceptible to a call after dark. In fact, they are more prone to come in close after nightfall than they are during the day. But it is more difficult to hit one under such conditions.

For night calling, wear drab clothing and call during the dark of a moon. For some inexplicable reason, foxes are increasingly more difficult to call during a full phase of the moon. Wear a headlight to leave both hands free for shooting. Tilt the light up so that the ground is faintly illuminated by the outer fringe of the beam. This is sufficient light to detect the telltale glow of eyes. Swing the light steadily in a full circle about you as you call. When you glimpse eyes, tone the call down softly, very softly, and follow the same rules you use in day calling. When the fox

is close enough for a shot, drop the beam directly on it, for better shooting conditions. A strip of fluorescent tape around an arrow or a dab of fluorescent paint will aid in pinpointing wayward arrows. A sharp ear also will reveal about how far one travels. At night the tendency to overshoot is even more pronounced and the archer must compensate for this by aiming low, at the bottom part of the fox's body.

After a few misses, the bowman gets philosophical about the entire

matter, shrugging it off as just part of the game. But there is nothing quite like that magic moment when a fox answers your call and you place your arrow fair at the point of aim.

When you do bag one of these wily critters, you can be proud, for you have accomplished a feat that few other archers have accomplished. The demanding challenge of fox calling is there for the bowmen willing to sacrifice the time and patience and frustrations to accept it. ●

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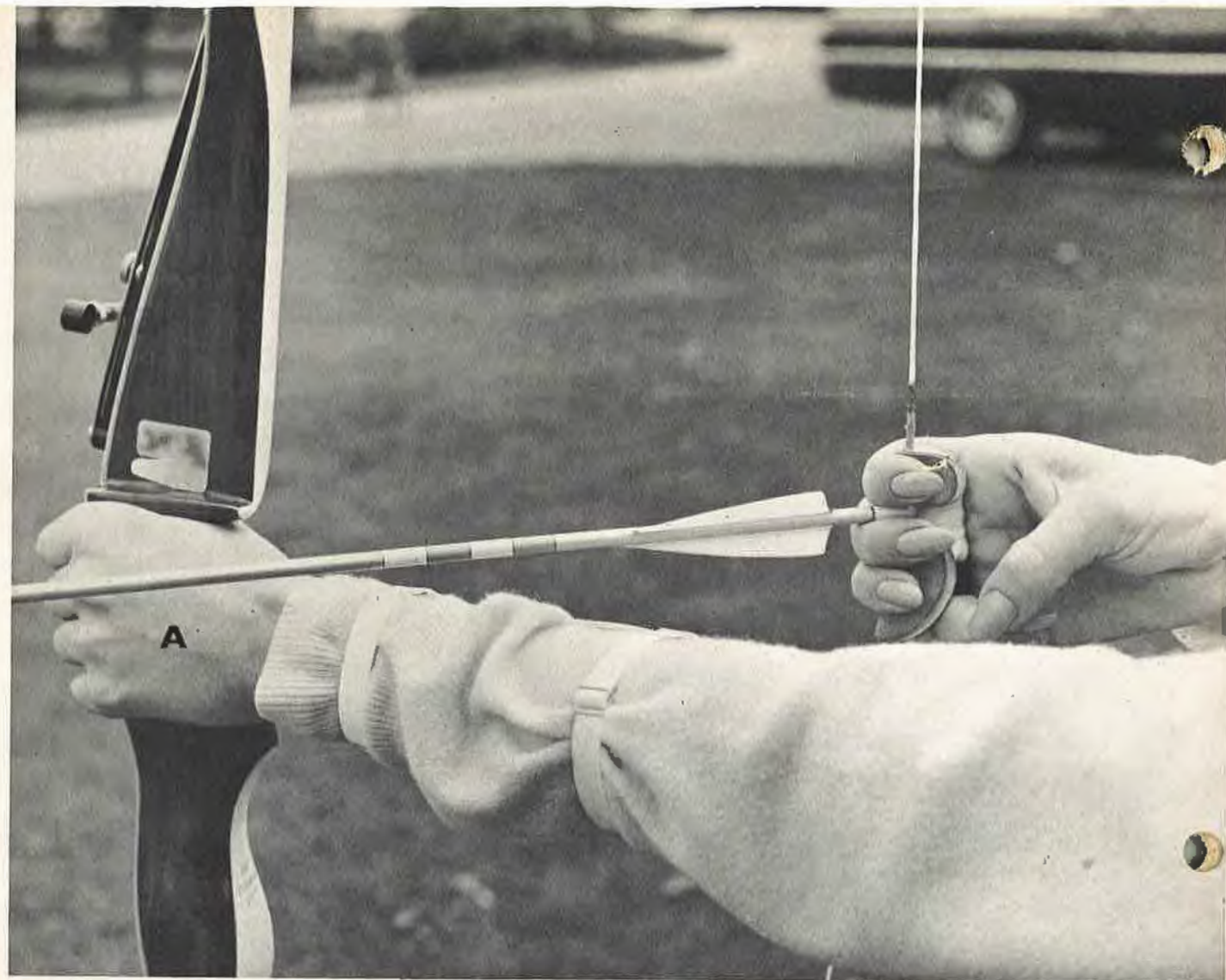
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Beginner Problems

BY HANK KROHN



PART II:

The Author And His Assistant, Jan Moriarity, Have Illustrated How To Shoot Right — Here Are Tips For Curing Those Frustrating Little Goofs!

FIGURE A shows the problem of keeping the arrow on the rest. This is caused by rolling the string away from bow with a cup or bow in the back of the release hand. It is easily corrected by taking a first joint bite on the string, pointing the second joint knuckles at the target and pulling with back and shoulders rather than biceps, forearm. This will roll the string against the side of your bow, thus making it easier to keep arrow on arrow rest.

FIGURE B shows extension of the bow arm to full draw. This gives rise to loss of control, inconsistency of elevation and is, in effect, a state of collapse. An easy correction (**FIGURE C**) is found in taking a deep breath, bringing

chest to up position, pulling with back and chest muscles. Moving the arm to get off the string is shown in **FIGURE D**. This is caused by not being able to release properly so the bow arm takes over and actually pulls the string off the fingers. Correct release as explained in previous series and you have automatically corrected your problem.

Throwing or jerking the release is shown in **FIGURE E**. Here we deal with the problem of releasing the string in a controlled motion, giving the same energy and alignment to each arrow. Again, correct the release as previously illustrated and you correct the problem. The elbow, hand and anchor point positions are properly demonstrated in **FIGURE D**, disregarding off-bow position.



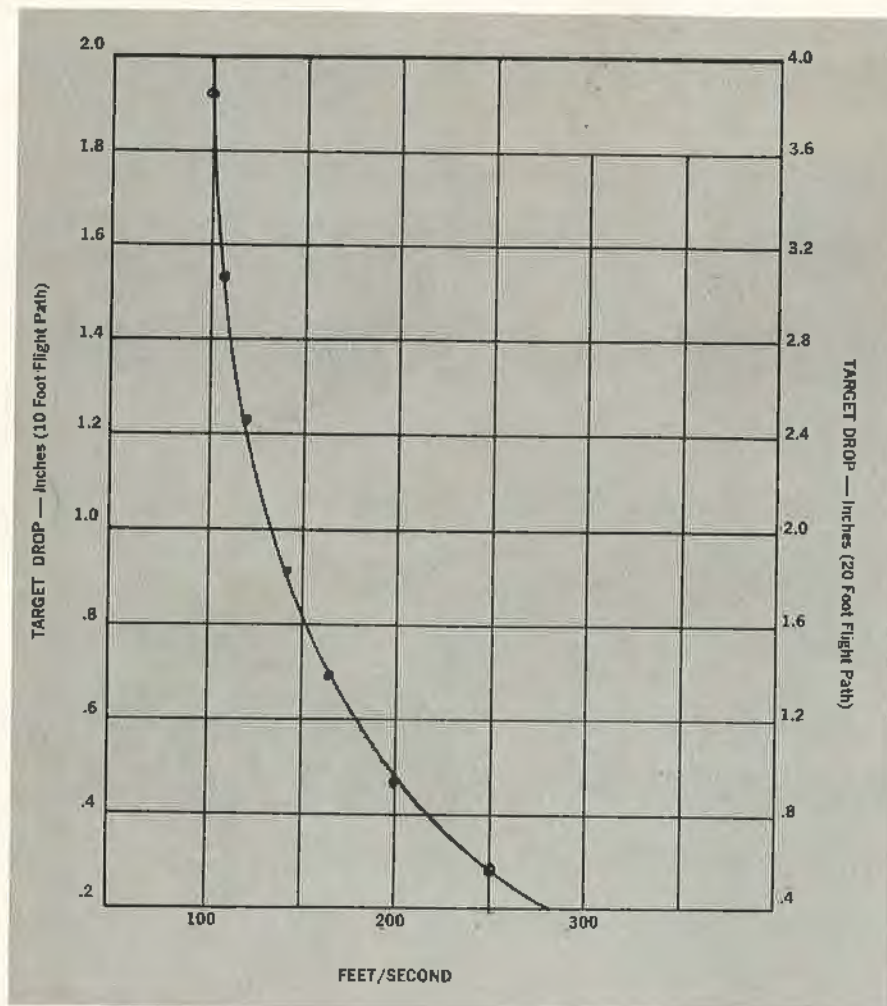


Figure II: Small dynamic speakers such as this were used to detect both bow vibration and target face impact.



There seems to be an increasing interest in the subject of arrow speed and bow efficiency. A number of methods for checking arrow speed have been described; the latest by Martin Haynes in his article, *Operation Experiment* published in the July-August issue of *Bow & Arrow*.

MOST MEASUREMENT METHODS employ electronic timers with some external means of starting and stopping the time interval as a function of arrow position. For the unfortunate group of shooters who do not have access to electronic timing equipment, there is another method which has been described, in previous publications. This method is based on the principle of a mass falling under constant acceleration. This technique, for obtaining elapsed flight time, relies upon the bow string release to break an electrical circuit of an electromagnet that is arranged to drop a weighted target face from a known

ARROW SPEED VERSUS BOW WEIGHT

AN ENGINEER EXPERIMENTS WITH FORTY — REPEAT, FORTY — DIFFERENT BOWS TO GET THE ANSWERS YOU WANT!

By Hal Hasenbeck

Figure I: The chart at left was devised by author to illustrate the comparison of the target face drop in relationship to arrow velocities.

position. Now, providing you hit the face of the target with the test arrow, the arrow stops the face so that the drop distance can be measured.

BASED ON THE EQUATIONS of motion for a constant acceleration, $S = \frac{1}{2} at^2$. For this application S represents the distance the target face drops, a is the acceleration due to gravity (32 feet/second²), and t is the time of fall. By rearranging and converting the acceleration term from feet/sec.² to inches/sec.², one derives $t = \sqrt{\frac{S}{192}}$

where t is the elapsed time and S is the target face drop in inches. Thus, the elapsed time can be calculated by dividing the target face drop distance (measured in inches) by 192, then obtaining the square root of the number. In a practical case assuming an average arrow speed of 170 feet/second (shot a distance of ten feet), the travel



Figure III: National Cub champion Gene Hasenbeck demonstrates how to line up the arrow tip with the ten-foot marker stake prior to draw.

time would be approximately .06 seconds. This would allow the target face to fall $192 (.06)^2$ inches or roughly .7 inches. Although this measurement technique is somewhat crude compared to the method described by Haynes, its accuracy is limited only by the care taken in obtaining a fast acting electromagnet and the ability to accurately measure the exact amount of target face drop. Of course, taking the average of several measurements will improve the reading accuracy. The curve of *Figure 1* shows a plot of target drop distance versus arrow speed.

As an Archery Commissioner of the General Dynamics/Pomona Archery Club, I am naturally interested in the technical aspect of archery and am fortunate enough to have access to specialized electronic equipment. Most of the club members are technical types and were most cooperative in assisting in making measurements so each

could determine how his gear compared to the other members.

Although the basic approach I used in making the series of tests to determine arrow speed was similar to that used by Haynes, the method used to start and stop the electronic counter did not require the arrow to pass through the special wire grids. Thus my technique may eliminate a small source of velocity error resulting from the grid card impact.

THE INSTRUMENTATION scheme was based on the use of a Type 5510 Berkeley Electronic Timer. This device is designed so that external electric signals can start and stop the timer to register the time interval. All that is required in addition to the basic timer unit is a pair of electrical impact pickup units, and their associated transistor amplifiers plus a six-volt battery.

THE IMPACT PICKUP UNITS were obtained by using two small

1½-inch dynamic speakers. These units are required to provide electrical signals to start and stop the time interval. See *Figure 2*.

One pickup was taped to the handle of the bow and the other was taped to the corner of the target face. The jar of the bow handle, as the string returns to the normal position, provides the electrical pulse signal to start the timer and the impact of the arrow on the target face furnishes the electrical pulse signal to stop the timing interval. *Figure 3* shows a photograph of the complete timing system ready for operation.

Since the Berkeley Timer can be read down to one microsecond, it was interesting to note the difference of several hundred microseconds in timing when the arrow impacted several feet from the pickup as compared to a few inches. This difference results from the time required for the impact vibration to propagate through the cardboard.

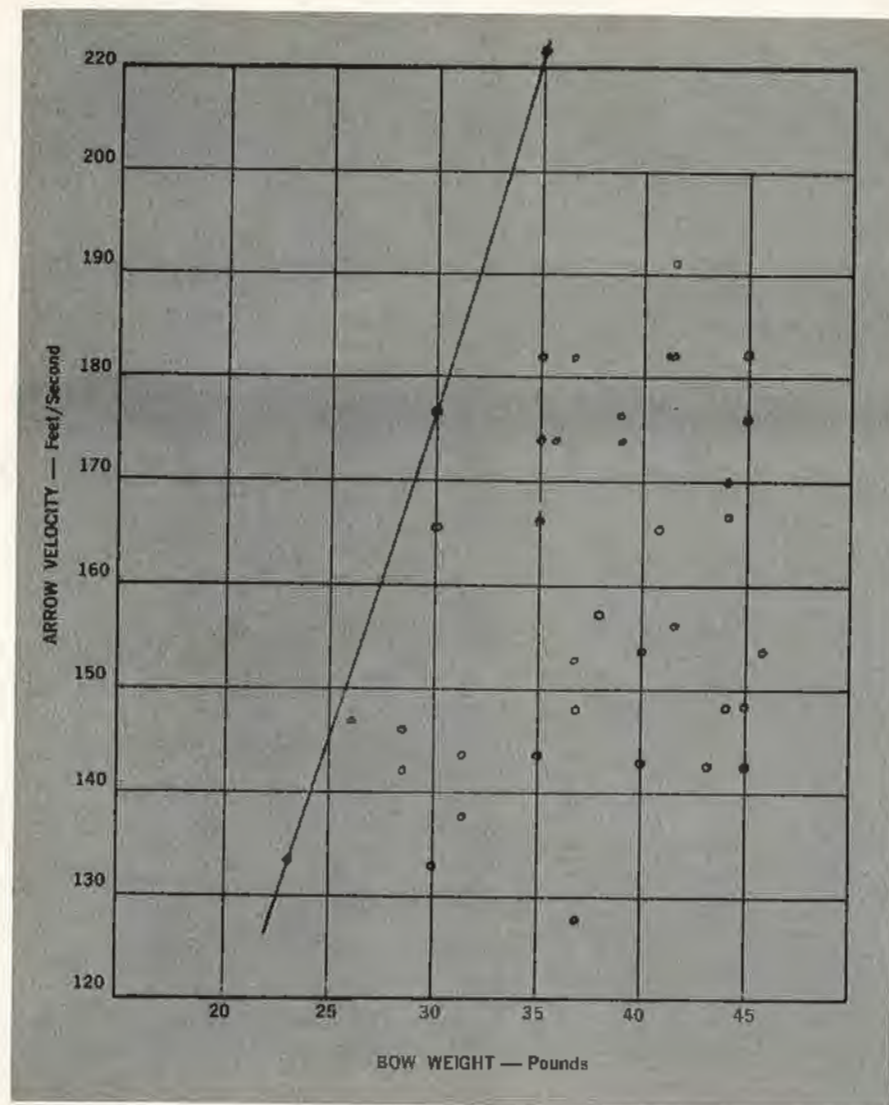
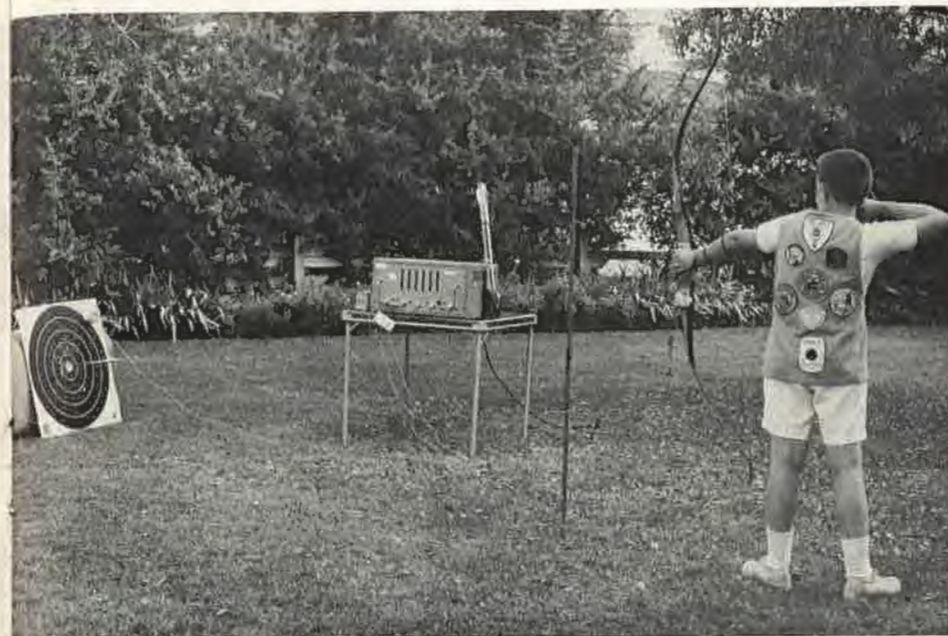


Figure IV: Due to variations in weight of arrows, varying shooting styles, this graph was somewhat erratic.

Figure V: (Right) At this short distance, arrow traveled from marker past to target in .058794 seconds.



is really worth the price in added inertia and reduced arrow velocity. Since no electricity was available at the General Dynamic/Pomona Archery Range and since a twenty-eight target shoot was scheduled at Pomona Valley Bowhunter Range for the morning of July 4, I decided that this would be a good opportunity to gather a lot of data and make a comparison between the gear of the various shooters. Admittedly, this mission was to be of an exploratory nature to get a feel for the spread of arrow velocity data and to determine if the measuring technique would prove practical under field conditions.

After the morning shoot, an announcement was made regarding the availability of the timing equipment and the line started forming at the right. When the dust had cleared away, I had more data than I knew what to do with. However, I discovered later that I really needed more data regarding arrow length, arrow weight and bow weight at the draw length used. Even so, for an exploratory program, I believe my mission was accomplished. Approximately forty sets of bows and their arrows were checked.

As expected there was a great deal of spread in measured arrow velocity. Figure 4 shows the measured velocities as a function of bow weight. Since neither arrow weight nor bow weight (measured at normal draw length) were known, the plotted data merely shows how arrow velocity varies between various shooters. However, the curve on the left side of Figure 4 was drawn to show a trend of what looks like extremely efficient bow and arrow design. The thirty-five-pound bow that produced 222 feet per second velocity was checked and rechecked to make sure the data was accurate.

Admittedly, there are many factors to be considered in bow design but the importance of speed of cast should rate high on the list. Who wants to shoot a forty-five-pound bow in order to be on target at eighty yards when a thirty-five-pound bow of more efficient design will accomplish the same job?

During the tests, at least four, and sometimes six, readings were taken to average out variations in

arrow release and improper draw. If one or two readings were considerably different than the remaining four readings, only the four readings were used to obtain the average.

ONE CAN CONCLUDE a number of things from looking at the data shown in Figure 4. However, this must be done with caution because of the lack of controls on the test data. For instance one could conclude that a given twenty-three pound bow was doing the job of a forty-five-pound bow. But stop and consider arrow length and weight. It is possible and probable that the arrow used in the forty-five pound bow was twenty-eight or twenty-nine inches long and made from 1818 material while the twenty-three pound bow was shot by a woman using a 1416 arrow only twenty-three inches long. As mentioned, additional and more accurate data on the physical properties of the equipment tested would be helpful in drawing conclusions. But this first test was designed to explore the measurement method and determine the spread of arrow velocities regardless of arrow weight or length or the weight of the bow.

In view of the lack of a controlled test, I have carefully avoided mentioning what bow makes are associated with which readings. I will say, however, that the following bow names were recorded as the tests were made:

Bear Kodiak Magnum, Ben Pear-

son (fiberglass), Cole Cobra, Tarbel, Red Slat Diamond, Mohawk, Sidewinder, Tomahawk, Morris, Preski, El Lobo by Rumph, Pro Medalest, Howard Hill, Swift Wing, Red Wing, Black Widow, Empress, Sanders, Challenger.

No attempt was made to record data on arrows. All types and weights were tested; some were glass, some aluminum and some were wood.

It would be helpful in future bow evaluation testing if a shooting machine could be used. This would eliminate the variability of draw length and release. It would also be advisable to use one type of arrow to eliminate variations in arrow weight and air drag. A reference curve should be constructed

A Word About The Author:

Hal Hasenbeck has been in and out of Archery since 1926. He started field archery in San Diego in 1948 and shot until 1953 at which time he moved to Pomona with the General Dynamics/Pomona Terrier Missile Program. In 1959 he started shooting again in the GD/Pomona Archery Club and is presently Co-Archery Commissioner.

At General Dynamics/Pomona, he is a section head in charge of Advanced Techniques.

showing arrow velocity versus bow weight. These datum should be derived from bows of the same length and manufacturer but of weights of 20, 30, 40, and 50 pounds.

It is difficult to reach any specific conclusions from the Pomona Valley Bowhunter tests except that, considering the spread of arrow velocity versus bow weight, either some of the bows are very inefficient or some of the arrows are extremely heavy for their respective bows. On-the-other-hand, a few of the bows appear to be extremely fast and efficient.

One way that is helpful in rationalizing the data of so many different combinations of bow and arrow weights and lengths, is to determine what I call the BA number. (bow-arrow number). I arrive at this number by first dividing the arrow velocity by the bow weight. This gives velocity per pound. In order to account for various arrow weights, I next multiply this number by the factor obtained by dividing the actual arrow weight in grains by 350 grains. Thus, BA = $\frac{W}{V} \left(\frac{a}{k} \right)$

where V is the velocity of the arrow, W is the weight of the bow, A is the weight of the arrow in grains, and K is 350. Using this approach, one can compare a twenty-pound bow using light arrows with a fifty-pound bow using 450-grain hunting arrows.

The Pomona Valley Bowhunters field test data was normalized to provide a number for velocity per pound. (The true BA number could not be obtained because the accurate arrow weights were not recorded.) A spread of numbers were obtained which varied from 2.78 feet per second per pound to 6.35 feet per second per pound. As it stands, this is a large variation but it could be that, in the 2.78 case, the arrow weight was 450 grains and, in the 6.35 case, the arrow weight was 275 grains. Taking these weights into account, the BA numbers would have been 2.78 $\left(\frac{450}{350} \right)$ or 3.57 and 6.35 $\left(\frac{275}{350} \right)$

or 5.0. Thus, the true comparison in this case would have been 1.4 to 1 instead of 2.3 to 1.

In conclusion, my field test report reads: "Preliminary flight test data indicates that the maximum missile velocity obtained was Mach .22. Boost time .0079 seconds. Booster impulse .138 pound-seconds.

The next order of business is to improve the booster characteristics."

What is your BA number? ●

The measuring method described first was tried on June 25. From this test I was able to get a feel for the order of magnitude to typical time intervals and determine convenient distance over which to measure the arrow flight times. Ten feet appeared to be a good choice for distance and, since it seemed likely that time intervals could range from .1 to .03 seconds, a curve was prepared to indicate speed in feet per second over this time range. The arrow flight distance of ten feet was measured from the tip of the arrow to the face of the target with the arrow knocked on the string and the bow in the shooting position as though the arrow had just been shot. (See Figure 3). This method of measurement was chosen because the arrow leaves the string at the instant the string reaches the straight across position. Also, this is the point at which impact is created in the pickup that generates the elec-

trical signal to start the electronic timer.

During the course of preliminary testing, I found that the equipment worked equally well for checking the shot velocity of an air rifle. All that was required to obtain the time interval was to tape the pickup to the gun frame. The shot impact on the target face produced the signal to stop the timing. Just for the record the velocity of the BBs for two different guns of the same make was 220 and 280 feet/sec. Probably one gun needed a little oil on the leather piston.

I normally use a short plastic bow tip protector on my bow. When this was removed, my arrow velocity increased seven feet/sec. Although this is only an increase of approximately four percent, I was impressed that the effect of such a small mass at the tip of the bow would have a measurable effect. I wonder if the extra wood which is normally added at the tip of a bow

Here is the array of equipment necessary to refetch your own arrows. Required items are low in price and afford a sizeable saving over purchase of new arrows.



CONFESSIONS OF A NEOPHYTE

By Tommy L. Bish

Fletch Your Own Arrows...

.... But Don't Make Some Of The Mistakes Explained Here!

I can tell you one thing that I have found out for certain. The feathering, or refeathering, of an arrow shaft — the chore known as "fletching" — and doing it correctly, consists of just a great deal more than sticking a couple of feathers onto an arrow shaft. Little did I realize this when I was assigned the task of assembling this Do-It-Yourself for **Bow & Arrow**. Arrow fletching is an exacting chore!

This do-it-yourself in the ancient art of arrow fletching was done from the standpoint of a novice in this field of archery equipment maintenance, and many common errors were brought to light, noted, explained and corrected. These are errors that anyone might experience while fletching, or refetching, his own arrows for the first time.

Being a fairly diligent soul, and always striving toward the completion of a task such as this "in the best possible manner," a fletching tool known as the Bitzenburger jig was selected for use in this article. This fletching

jig is among the most advanced in design of any on the market today and is a minor engineering marvel regarding proper maintenance of your arrows.

One of the more important phases of fletching a new arrow, or that of refetching one that has seen better days, is the selection of the feathers. This one point, in the beginning, left me in a state of complete consternation that lasted through the entire affair. I had always thought that a bird feather was a bird feather, and when you had seen one, you had seen them all. But through a series of trials and complete errors, I finally realized that there is a difference in a right and a left feather and that each had its proper place in fletching correctly, so that our arrow would fly true when shot from a bow.

After a short conference with an old pro in the archery game, George Ferns of the Golden Arrow Archery Lanes, during which I explained my inability to get feathers to seat properly on the arrow shaft during the cementing operation, he examined my feather supply. I had been sold feathers from a box that was clearly marked "right" feathers when in reality they were "left" feathers. This resulted in the base, or quill section, being tapered to an angle foreign to that needed for a "right fletch." At any rate, after Ferns had pointed out this mistake, the feathers were exchanged for the correct type. I went home, and with renewed vigor, proceeded again to assemble all tools and other equipment necessary for the fletching of arrows. I might add that I now know a left feather from a right when I see one!

With the few tools necessary at hand, consisting of the Bitzenburger fletching jig, a sharp pocket knife, a pair of scissors and a tube of 24SRT-XO, the fletching cement distributed by the James D. Easton Company, I was set to forget my first abortive attempts and get down to some real serious fletching. I had the correct feathers as well as some invaluable information from Ferns concerning precautions to avoid again cementing the fletching jig, the clamp and feathers into a solid unit which had to be cut apart with a knife in my earlier attempts.

I am only mentioning these boo-boos in order to prevent their reoccurrence by those reading this article who might be as green at arrow fletching as I was. It is indeed quite easy to cement the aforementioned components into one unit, and I might add, it was gratifying to me when George told me that I wasn't the first to literally glue-up-the-works — nor was I likely to be the last. To prevent this, add a simple block of paraffin wax to your fletching equipment. This wax is rubbed onto the bottom edge of the feather clamp, thus rendering it unbondable to the fletching cement.



The first step in refetching an old arrow is to make certain that all old feathers and cement are removed from the shaft. This is followed by a light sanding with fine garnet sand paper prior to the actual installation of the new feathers. This sanding operation is particularly necessary on aluminum arrow shafts to assure a positive bonding of the cement to the metal. The sanding of the shaft is only in that area to which the feathers



are to be attached. It is wise to mention at this point that in refetching a glass arrow, great care should be taken in the "cleaning up" of the shaft to prevent cutting into the fibers of the glass, itself, should a sharp knife be used to remove the old feathers and cement. In the case of wood or aluminum shafts, the clean up operation is much simpler, but all must be perfectly clean before proceeding further.



With all shafts cleaned, the next step is to cut the feathers to the necessary length, leaving them slightly longer than will be the finished feather. It has been proven that the best feathers for fletching are those from turkeys. These come from the wings and are called pointer feathers, of which there are only five such feathers to each turkey wing . . . ten to each bird.

In my personal fletching operations I found that each cut-feather was to be approximately four-and-a-half inches in length, and to get perfect "vanes," it was necessary to cut each vane from the center section of each whole feather. This means that only one vane was obtained from each feather, but in the long run, it pays to utilize only the best part of the center section of each feather if durability is to be expected in the finished product.

Following the cutting-to-length of the feathers, we now adjust our fletching jig to the proper angle for the type of fletch desired. This fletch angle may be a right



or left helical "twist" or merely a straight fletch offering slight curve to the cemented feathers. At any length, it is well to remember to use a right feather for a right "twist" and a left feather for a left, otherwise the vaning qualities of your feathers will be completely foreign to all standards of aerodynamics, and the arrow, when shot, will be erratic in flight.



With the Bitzenburger fletching jig, I found that I could obtain a perfect right helical twist by using the proper helical clamp or by using the straight clamp and readjusting the jig so that the feathers set onto the arrow shaft at a slight angle. Choice is up to your own judgement. I used both methods for the sake of practice and experimentation.

After cutting the feathers and adjusting the jig to the correct setting for the type of fletch desired, the vane is placed into the clamp, allowing approximately one eighth-inch of the quill base section to protrude. This protrusion is to allow proper seating of the vane when the clamp is slid into place over the arrow shaft and it also makes the application of the cement an easier chore.

At this point, it might be wise to recall the reference to paraffin and its application to the holding edges of the clamp to assure that the cement doesn't bond to it.

With the arrow shaft seated in the nock rest, the clamped feather is given a light coating of cement. By "light coating," I mean that the base of the feather is

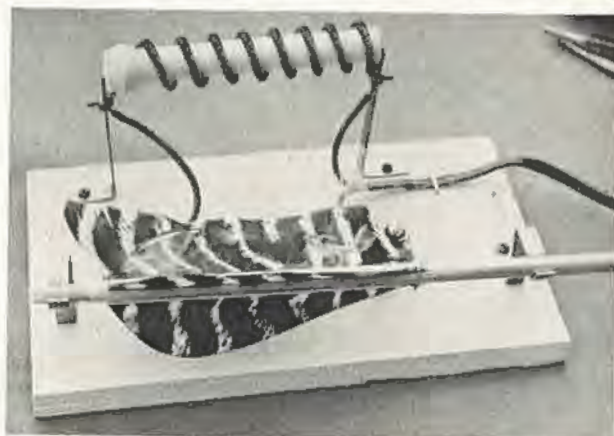


evenly covered with cement but not to excess. Over-dosing the feather with cement can present troubles, and mean a sloppy job, so care should be exercised here.

With the cement evenly applied to the quill edge, the clamp is slipped carefully into place against the magnets of the jig. It then is carefully pressed downward so that the base of the feather is firmly seated onto the arrow shaft. At this point it is time for a smoke or a can of beer, as the cement must be allowed to dry for at least fifteen minutes before repeating the operation with the next feather.

The directions supplied with the Bitzenburger jig are concise as to just how the various settings are accomplished for the varied types of fletching of which this tool is capable. Whether it be a right or left helical setting, a straight fletch or any of the "angles" or "twists" in between, the Bitzenburger can do it. After pre-setting this tool, the whole operation consists of merely turning the nock receiver to the next position for the next vane installation. All in all, it's a simple and fast way to get a perfect fletching job every time.

After cementing the feathers to the arrow shafts, comes the final operation, that of shaping the feathers and the skiving of them. There are a number of simple, well made and inexpensive electric feather shaping devices on the market. These devices consist of either a coiled wire or a transformer with a preshaped "burning wire" attached, utilized for the even and symmetrical shaping of the feathers. These commercially made burners are equipped with guides and shaft rests on which the arrow is turned by hand. The feathers, upon coming



in contact with the hot-hot wire, are neatly and efficiently burned off to the exact shape desired. The shape of the fletching can vary greatly as the wire must be bent to the proper shape by the individual, meeting his own requirements.

The burner that I am using is the efficient, yet inexpensive model put out by Fleetwood Archery Company, which sells for the modest sum of \$4.95. This device, while not the fanciest, is one that certainly gets the job done with no fuss or muss. It comes complete with extra wires that may be bent to your own taste for shaping the finished feather fletching. After the shaping of the burning wire, it is merely a matter of plugging the device into a 110 volt socket and the tool is ready to use.

The final skiving of the quill consists of trimming the ends of the base part of the new fletching, then applying a drop of cement to each feather-base end. This will prevent the feather from catching and tearing loose in the quiver or when being pulled through grass or straw targets.

Finally the raw edges of the feather are wiped over lightly in order to remove any minute ash residue left from the burning of the feathers. At this point the newly fletched arrows are ready for use. ●

FOLLOW THE LEADERS

(Continued from page 17)



If he uses a secondary arrow, the "kill" zone score drops to fourteen points or ten for a hit. And if a third arrow is required, he gets eight or four points, depending upon placement. Distance between shooting position and target on this course can vary from ten to eighty yards.

All of the contenders in this quartet used sights on their bows, and as they would come up to each target, they would judge the distance as best they could, take a few paces to use as a comparison, then return to the stake, adjust the sights and launch an arrow.

Also included in this course, if you are not familiar with it, there are several of the long range targets in which walk-ups are allowed. In other words, there are three positions, each closer than the one preceding, and the shooter launches an arrow from each of these.

Going into this final day, Cavallero was in the lead by a few points, and he was tabbed to win, since the animal targets were considered to be his meat. In the final stretch, Cavallero, certain he had won, went into a cha-cha step. Partin, an old pro in this type of shooting, seemed relaxed in the final phases, realizing he had done his best. He, like the others, used a level on his bow during this tournament. When asked about it, he explained that he had installed it to determine the cant of his bow on the vicious mountainsides, but he was not particularly enthralled with it. In fact, he declared it was "just one more thing to watch."

Jim Pickering, representing Ute Archery Lanes in his hometown, is described as "Mr. Moneybags" by his contemporaries. He seems to shoot best when the pressure is on — for money. For example, he not only took top money at the Ben Pearson Open in Detroit in the Spring, but also was top money man at the National Indoor Open held at Covina and Downey (California) lanes the week prior to the NFAA tournament. Finally, he was in the top money bracket at the \$20,000 money shoot held at Enchanted Forest in late July.

Bob Lorch was a dark horse indeed; this was his first outing in a major tournament, according to officials, yet he held up well against the best in the field.

As an example of the keenness of the competition — and the toughness of the course — here are the finals: Cavallero came up with an overall total of 2501, but this was 136 points less than his 1962 win in Arkansas. Bill Partin repeated for second place, scoring 2481 against his second place in 1962 with 2611 points. Pickering was in third place with 2477, while Lorch, already being touted as a potential winner for next year, had 2474 points. ●

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OPTIMISM OR OPTIMUM IN OPTICS?

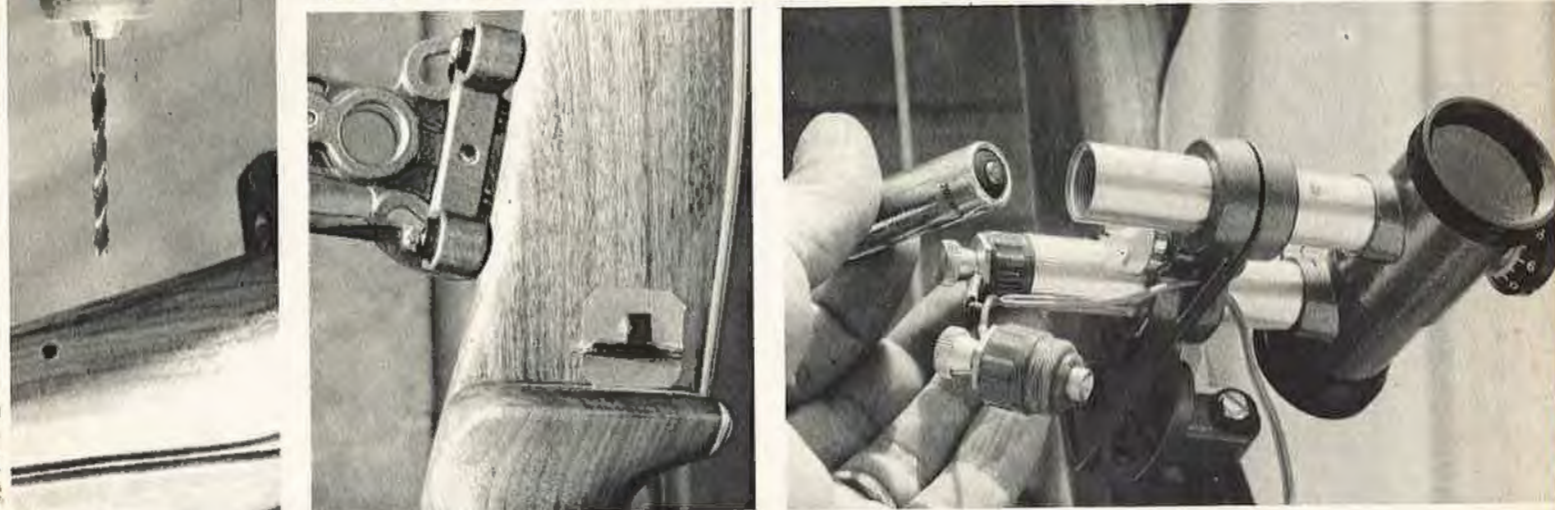
*This Electronic Sight Was Scientifically
Designed For Accuracy — Dependent Upon
The Archer's Abilities, Of Course*

WE'D heard a good deal of rumor about the Stiennon Telescopic Bowsight and the fact that it was supposed to upset archery circles, but we didn't get a first look at the sight itself, until last January, at the National Sporting Goods Dealers Show, in Chicago.

There, the folks from the Madison, Wisconsin, outfit had one of the sights installed on a recurve bow and were letting the curious try their hand. Lashed down as the bow was, it did right well, but we were more interested in learning how the sight would react in the hands of a bonafide archer on the target course.

So we began writing letters, most

Left: Three screw holes are necessary for mounting this sight and should be made with drill to avoid splitting the bow; (below), Mounting is a simple matter, but where mounted on belly of bow depends upon your length of draw; (lower right) optical system of sight is powered by small battery inserted as shown.



of which went unanswered. We tried a phone call or two and were told that the sight was not yet ready. So we settled down to wait.

That was all that really was required: Patience. Eventually the sight, looking something like an electronic computer left over from a guided missile, arrived in our office. It was packed with that kind of care, too, and after cutting, slicing and tearing at the carton and the plastic foam container, we finally got to the mechanism, itself.

The first thing that threw us was a pair of spectacles — but without glass. Instead, the frames carried what turned out to be a rear lens — with adjusting screws, et cetera.

In checking the instructions, we found that there were definite rules for mounting. For example, if you draw twenty-eight inches, and a five-foot field of view at a hundred yards is enough for you, mount the sight on the front surface of the bow for maximum magnification of the target. But if you prefer a wider field of vision with less magnification, you should mount the sight on the bow's belly. Archers with a draw of more than thirty-one inches also should mount the sight on the belly.

The sight has some similarities to a reflex camera wherein you are looking through one lens, but another is taking the actual photograph. When shooting extreme

close-ups with this camera, one has to make adjustments for parallex. The same is true with this bow. There is an adjustment knob which will change the point of impact of your arrow much as can be done with a telescope sight on a rifle. And it is necessary to make this adjustment so that your line of sight coincides with the line of flight of the arrow.

Also included is a range dial. We found that once you are onto the built-in features of this sight, it is small trouble to adjust your range dial to coincide with the changes in distance at which you will be shooting.

Within limits, it is even possible to mount this novel sight on a canted bow. However, to do this, you judge first at what angle you hold this canted position, then the sight has to be mounted so that it remains in a horizontal position. If this is not done, the batteries and projection barrel do not function properly.

As for the actual mounting instructions, it is simple enough once you have digested the parts chart and understand the proper identification of all of the instruments.

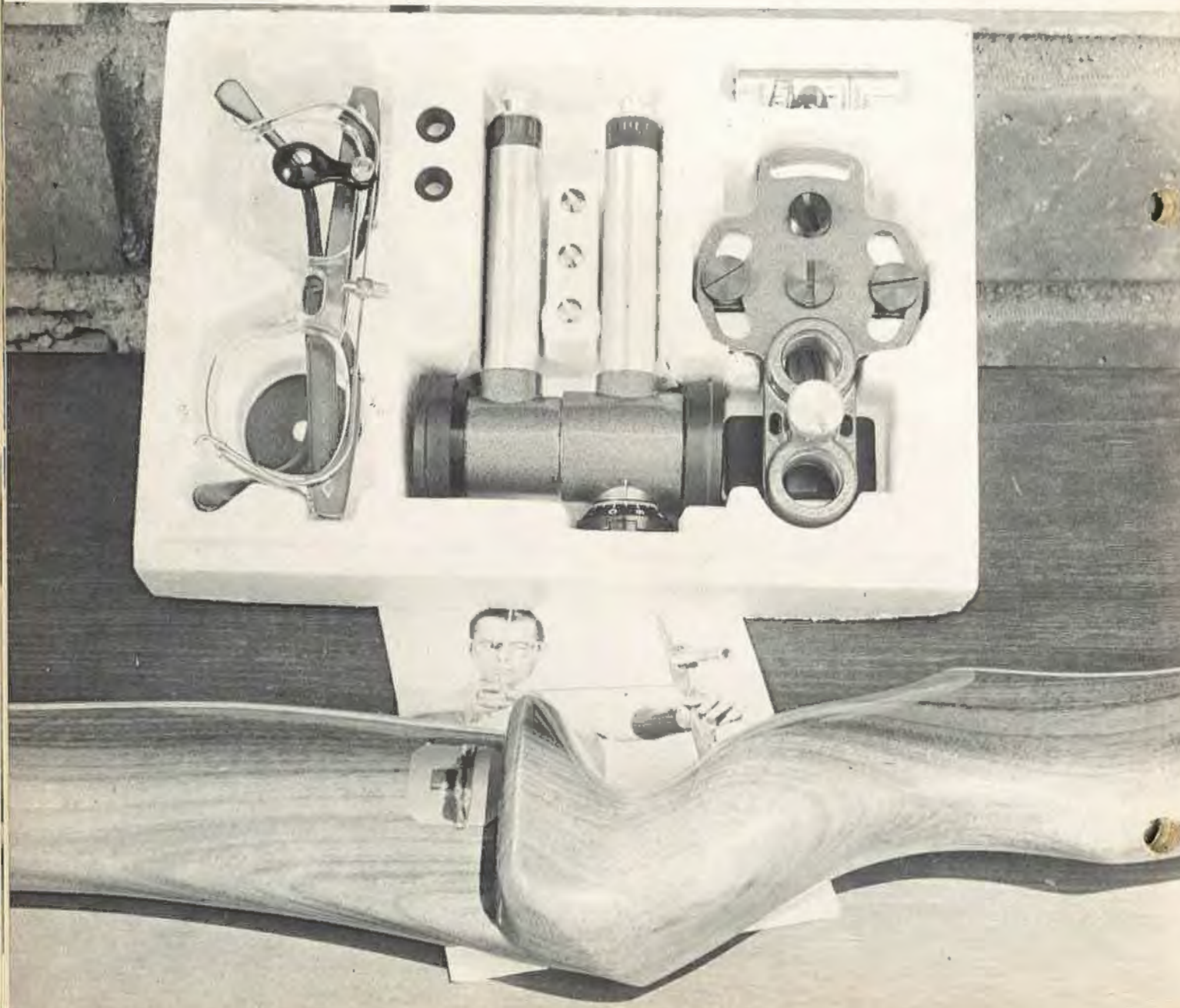
In actual tests, the sight is a dream on the target range, but our staff found that it takes some getting used to when you start going after game. It's a little like shooting beetles with an atomic cannon!

Below: Trigger for sight extends below and is activated by finger. It also can be installed for thumb use.



This Atomic Age sight comes packed as shown, but the booklet of instructions is explicit and easily followed. The rear sight is installed on frame.

Right: And if you don't go for peering through lenses spectacles, the rear sight can easily be adapted to a rimless frame as done here.



PROFILE OF A CHAMPION: LOUIS RANGEL

Left: Rangel's style and form is considered unusual by some standards. Instead of angling 90 degrees with the target, his stance may be as much as thirty degrees off, then he swings his bow to make up the difference. He also cants bow, but has learned proper compensations. Note that the angle of his head is same as bow's cant.

Below: In this series, Rangel has index finger in corner of his mouth as anchor point for eighty-yard walk-up. He feels this puts him exactly on target at seventy-two yards. For targets at sixty yards, he has his middle finger in the corner of his mouth, thus lowering point of aim. As shown at extreme right in this series, for shots in fifty-yard area, his index finger is anchored directly beneath his eye. He has learned to adjust shots at these distances, using circles on target as his gauge.



LOUIS RANGEL of Riverside, California, the 1963 Instinctive Champion of the National Field Archery Association, has a tendency to do things in a highly original fashion.

For example, if a survey were made, one undoubtedly would find that the average archer begins with target shooting, and eventually becomes a bowhunter. In Rangel's case, he got into archery by becoming interested in hunting, purchased a bow and took to the field after game. He didn't become interested in field or target archery until later. But this year, he has won the California State Bare Bow Champion, then went on to slay opposition at the NFAA tournament held at Running Springs, California. His score for this outing was 2269, or sixty-two points above Wayne Ward of Wichita, Kansas, his nearest competitor.

There are those who feel physical conditioning has a great deal to do with becoming championship material, particularly in field archery events, but Rangel insists he doesn't go in for weight lifting, yoga or even meditation while standing on his head.

"I just shoot a lot," he declares. "In practice, I try to think of only three things: A solid anchor; lining up my arrow correctly on the target, then a clean release."

Although, as expressed in Corky Johnson's *Tackle*

Tips in this issue (see page 10), he has done more than his share of experimenting with equipment, he has settled — for the present, at least — upon a Wilson Brothers' *Black Widow* bow. Bow length is sixty-six inches with a draw of thirty-nine pounds at twenty-eight inches. However, he uses a twenty-nine inch arrow, giving a bow weight of approximately forty-one pounds.

As far as stance and other factors are concerned, Rangel also has his own system, much of which he has developed through trial-and-error. For example, rather than standing at right angles to his target, he varies by some thirty degrees, then swings his bow into line. He cants his bow, which is frowned upon by the purist. But he still wins championships; with this, how can one argue with his technique?





The quiver which Rangel now uses is a trophy on which he had not counted. It was made and presented to him by Antonio Larre, considered the 'Howard Hill of Mexico.'

Rangel's originality of form is shown in the manner in which he tucks under little finger. He says this serves as a stop, causing him to grip bow consistently the same.



Left: While many top archers prefer a straight-fingered grip on bow, Rangel's fingers lightly touch the bow at all times, until release. (Below) Upon release of his arrow, his grip is relaxed, fingers loose upon the wood. This unusual action shot shows "snaking" of the string.



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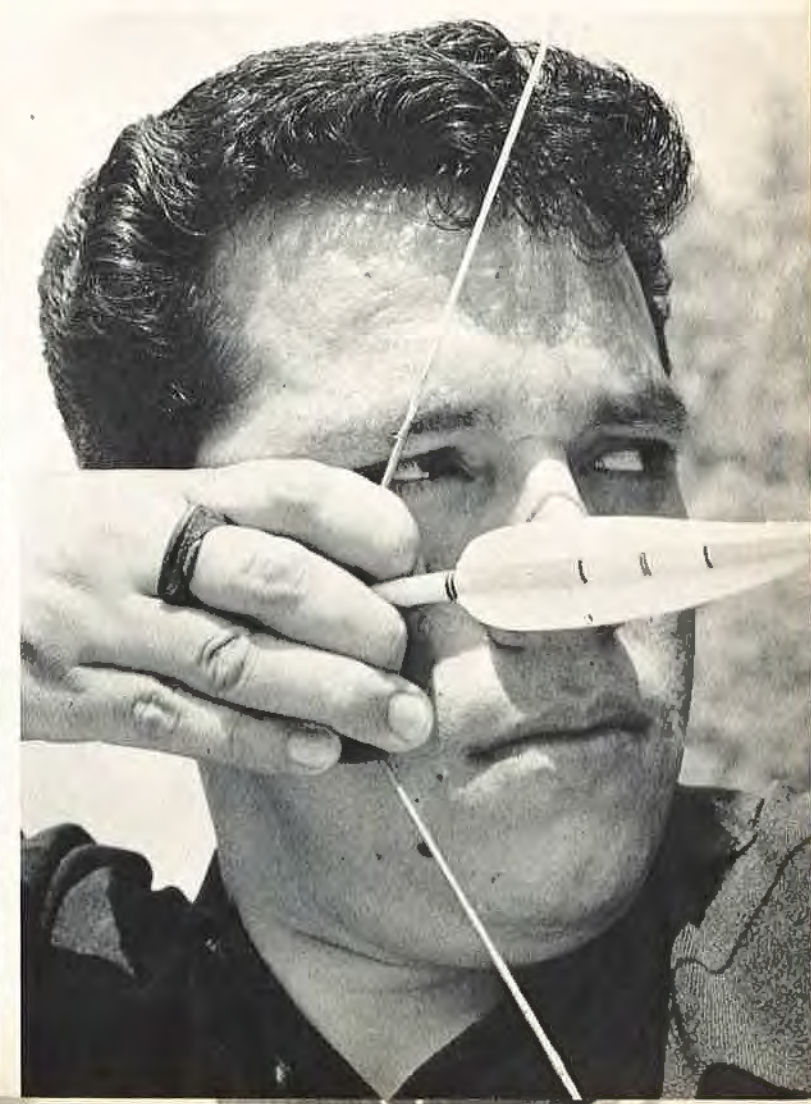
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HUNTING WITH KITTREDGE

(Continued from page 8)

A twig rubbing along your bowstring can make a very alarming sound which carries quite a way during a still morning. The sound of the arrow being drawn is a real attention getter, just at the wrong time. Every hunting bow should have a soft arrow rest and arrow plate. A piece of buckskin, bobcat hide, or simply a piece of mole-skin corn plaster will deaden all arrow noise, both of drawing and shooting.

Some years ago, I read Francis Sell's great hunting book, *Advanced Hunting*. A statement was made in the discussion on sounds to the effect that one of the most frightening to wild game was "no sound." There always is sound in the woods during any normal safe time. The only animals who move without making sound are those who are hunting such as a predatory lion or man, or those who are frightened and are quietly moving out of the area. When a deer feels something is about, yet there is no sound to identify it by, he immediately becomes frightened.

Sound can be associated with an activity and the animal pays little attention when it occurs. Fishermen working along a stream, or hikers on a trail can be talking to each other and making all sorts of noise yet run onto deer who pay little or no attention to them. I've seen one instance and heard of others where deer are intentionally walked right up to just by appearing to pay no attention to them and talking in a normal manner or making some other sound normal to the situation. A nice buck used to frequent the side of a fenced yard where a fellow would mow the lawn two times a week. A local hunter heard of this and tried several unsuccessful times to stalk the deer. Finally he tried pushing a lawn mower in front of him as he moved up on the deer . . . result: Venison in the locker. The minute the hunter did something that fitted into the pattern the deer was used to, the deer paid no attention.

One time, I was working my way along a deer trail into a lush feed area during the late afternoon and was not paying too much attention to what I was doing. All of a sudden, I became aware of a number of deer browsing the brush ahead of me still too far to get a shot. The brush was thick. I couldn't move without making some noise. I was right out in the open where my movement would be spotted the minute I got close.

Remembering Mr. Sell's advice about no noise being frightening and noise which is familiar to the area being okay, I decided I'd become simply another deer and see how this idea worked out. Getting down on hands and knees so my human outline didn't show, I slowly moved along the deer trail towards the deer. Every so often I'd pull at the browse as though I were nibbling at it. I allowed my wool shirt to brush the branches a bit. Like a feeding deer, I'd move a little way, then stop and browse. Gradually I gained on the deer. They would look down my way every so often, but paid little attention and certainly were not alarmed at all. In time I approached within good shooting range and got a nice shot. Noise can be a bowhunter's friend or enemy . . . it all depends on how it's used.

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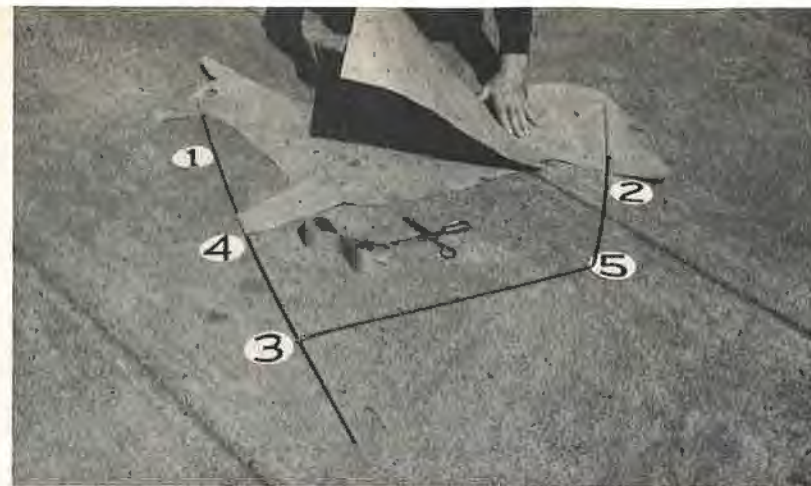
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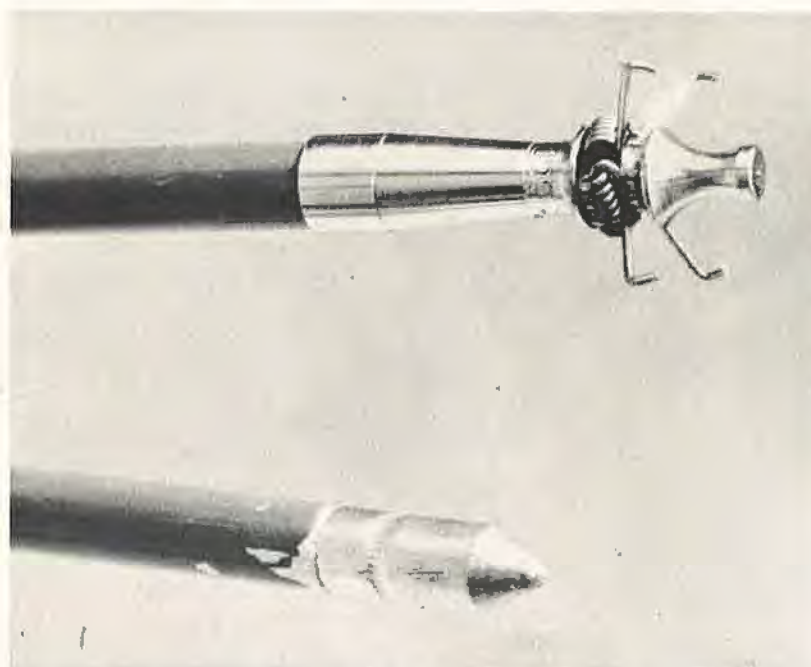
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TACKLE TIPS

(Continued from page 11)

jectory and he had to be right on the money for distance or the arrows would drop out of the target altogether. He felt that he could solve the distance problem so he decided on the 1820 Easton shafts. Actually I did not think that he could master this situation, but he shot his highest fourteen and twenty-eight field target rounds with them.

With everything seemingly under control, we traveled to Oakland for the 1961 state finals. And when it was all over, Louis was way down on the winners' list. There was always next year, but by then Louis had become so discouraged with his shooting that he quit altogether for five or six months.

When he started shooting again he came back with an entirely new approach and, believe me, it was for the best. He bought a Howard Hill recurve with arrows to match. To cut his point-on down, he went to an extremely high anchor which he should have done a year earlier instead of experimenting with the heavier arrows. His first scores, after coming back, were not too impressive, but within three months he had broken every field range record in our area.

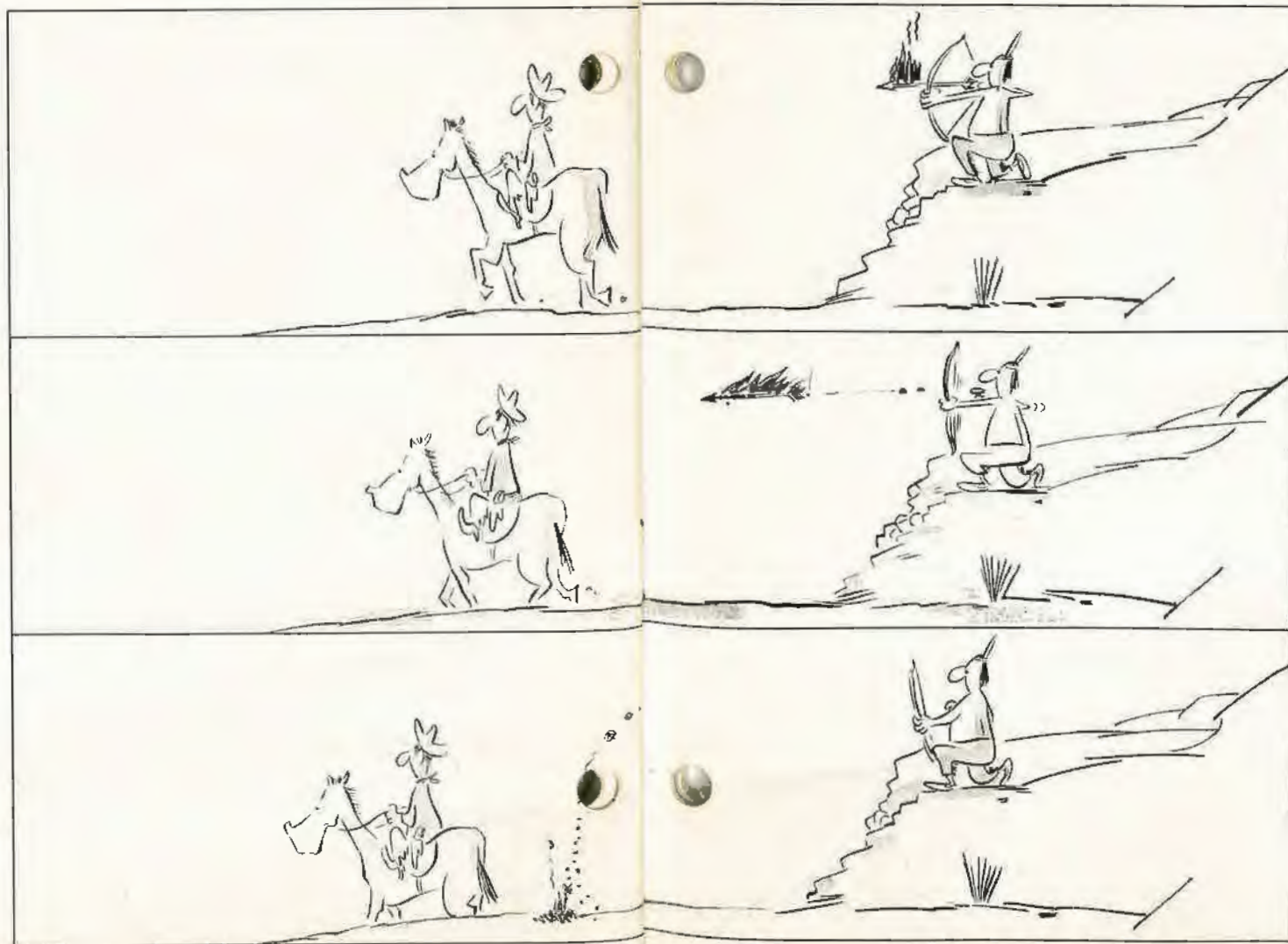
The 1962 state finals were held in Salinas and I felt that Louis should win the Bare Bow Division going away. But when the smoke had cleared after the battle, Les Speaks

had beaten Louis and me by three points as we had tied for second. They gave Lou second place, as he had the high field round between us.

A short time after the 1962 state shoot, Louis acquired a Black Widow bow. He reworked the handle to his satisfaction, then really went to town score-wise. By this time, he had worked the three anchor point system out to a fine degree. With it and his perfect shooting form, he was shooting the 500's for twenty-eight field targets. His average at this time was 587 for twenty-eight targets — also unbelievable for bare bow shooting.

As stated earlier, Louis went on to win his first State Championship this year, but he had to really knuckle down to do it, as he beat Matt Fagan by only two points. He got a slow start at the NFAA tourney this year, but by the last twenty-eight targets on the Hunters Rounds he was ahead and won it going away on Animal Shooting. He shot a 963 Target round in the Enchanted Forest money shoot, but had entered the handicap division and had to settle for thirtieth place. Had he entered the scratch division, he would have placed about sixth.

Louis has discussed going to a sight, but I feel sure that he will defend his bare bow title next year at the National Field Archery Tournament. But with or without a sight, should you ever have the opportunity to see him in action, you will be watching one of the smoothest and the best in the business — **FOR MORE, SEE THE LOUIS RANGEL STORY ON PAGE 34.**



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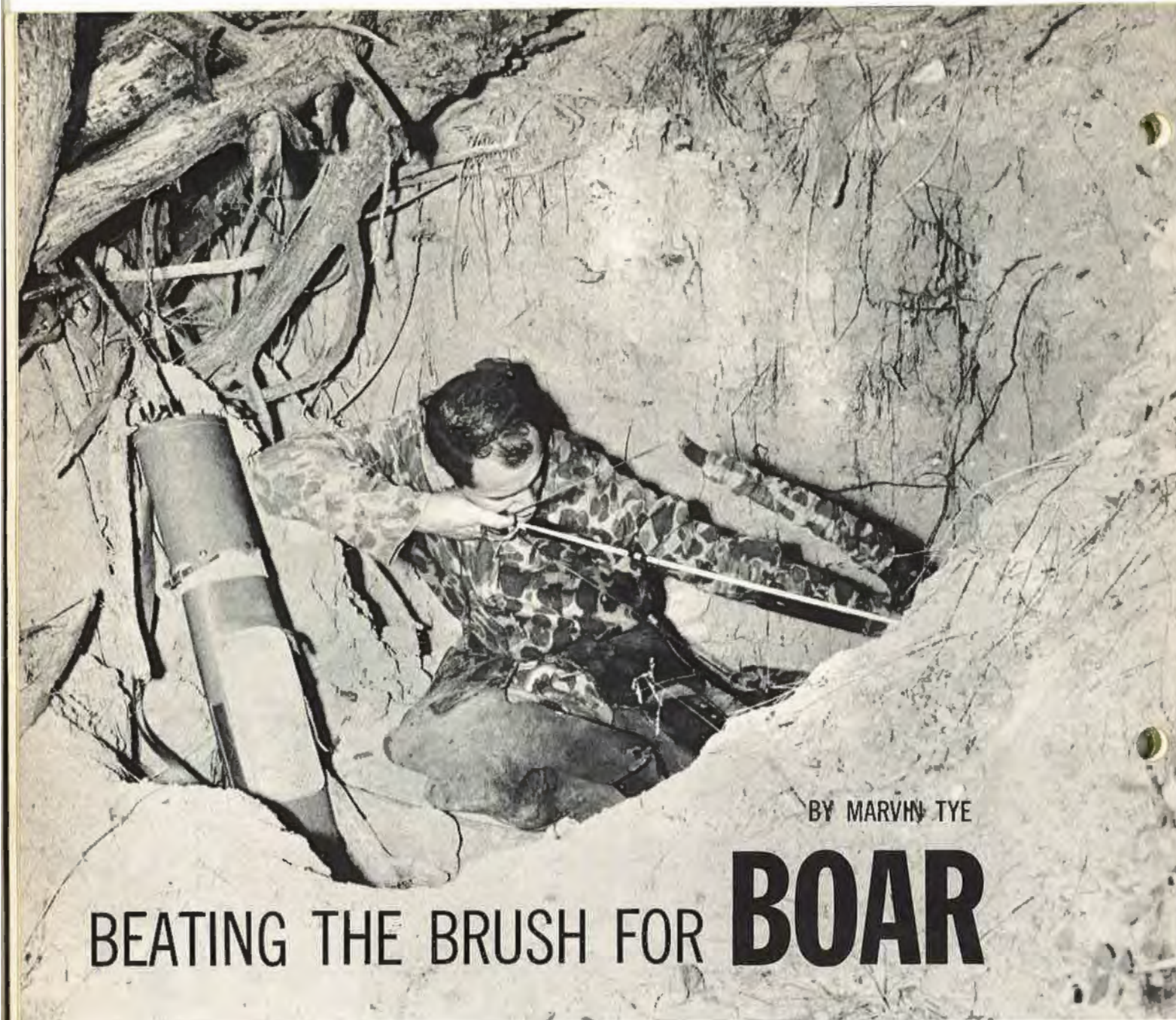
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BY MARVIN TYE

BEATING THE BRUSH FOR BOAR

IN THE TEXAS MESQUITE COUNTRY, THE TERRAIN IS TOUGHER THAN THE JAVELINA!

JAVELINA, the elusive wild pigs of the American Southwest, have intrigued me ever since I began bow hunting. Abundant throughout much of Latin America, their range north of the border is limited to parts of Texas, Arizona and New Mexico. The javelina is not a large animal. The average length, from nose to tail-less hams, is about three feet and a large boar will weigh only about forty pounds.

Its body is covered with coarse black hair. A white ring on the shoulders gives it the name of col-

lared peccary. Some hunters claim that this strange little animal is a vicious beast that will attack any man who comes near; others say that he is about as dangerous as a jackrabbit. The truth probably lies somewhere between these two extremes. The challenge he presents to the stalker readily is agreed upon. The javelina cannot see well at all, but his senses of smell and hearing are second to none. A hunter has a slight advantage in that he can sometimes hear, see and smell the animals — especially if he is

downwind. Tracking an animal that you can smell and hear but cannot see is an experience unique to javelina hunting.

At first I planned to try stalking the critters, but some friends told me about Tommy Timmerman. Tommy lives in Hondo, Texas, and for a fee of twenty-five dollars he will guarantee you a javelina. No pig, no pay. Tommy uses a pack of three dogs to chase the animals in the tangled brush country around his home town. The lead dogs, Mike and Tige, are Catahoula hounds,



Author was forced to crouch and shoot into cove once Texas javelina has been cornered. Camouflage on bow is for protection against brush. (Above) Dragging his trophy back to transportation was anti-climax of the hunt. Quiver is no longer being manufactured. (Below) Javelina averages 40 pounds and is native of the Southwest only.



imported from Louisiana where they are bred. Blackie is a mixture of Walker and Collie.

This section of Texas, near Hondo, is the only part of the country in which javelinas can be hunted all year. There is no closed season or bag limit. Tommy looked at my fifty-five-pound Bear *Kodiak* bow and razorhead-tipped arrows with apprehension.

"Some of the shots you'll get will be in close spots," he said. "You really need a shorter bow. Also you need a pair of chaps and a long-sleeve shirt or jacket. The thorns out there can be pretty bad."

An old camouflage jacket solved the problem of what to wear to protect my arms, and I slipped a Kamo cover over my bow for protection rather than camouflage. Tommy rounded up a pair of heavy chaps for my legs. One look at the terrain where we were to hunt convinced me that this equipment was necessary. On the edge of the Texas brush country, it's a tangled mass of *tasajillo*, mesquite, prickly pear, whitebrush, blackbrush and other thorny plants. Deep ravines and high hills add to the problem.

Shortly after daylight, we parked the truck. I picked up my bow, tightened my armguard and slipped a couple of rubber bands over my billowing sleeve to prevent it fouling with the bowstring. With the quiver on my back, I was ready. Tommy released the dogs and we followed them as they sniffed the moist soil. They wandered back and forth with us close behind. Tommy

stopped suddenly and pointed to the sandy ground. "Javelina tracks" he said. "We must have scared them. They can't be far away."

Suddenly the dogs began to bark furiously about thirty yards from us. "Come on!" Tommy yelled, running toward the commotion. "They're bayed already."

I fought my way through the tangled mass of *tasajillo* and mesquite as quickly as possible, pausing only to free my bow and quiver from the clutching brush. We found the dogs at the bottom of a small ravine, the javelina backed up in a shallow cave. The sound of tusks popping together like Spanish castanets could be heard above the howling of the hounds. The animal seemed to be challenging them to come through the narrow opening where it would have every advantage.

We couldn't see the game in the darkness of the cave, so I shed my quiver, gave Tommy the bow and returned to the pickup for a flashlight.

"Can you shoot from here?" Tommy asked, still standing at the entrance when I panted back.

"It'll be hard," I said, "But maybe I can manage if you hold the light."

The cave's mouth was less than three feet high. I had to kneel down and bend forward at the waist to see inside; canted at a sharp angle, the bow barely cleared the ground. The javelina's body was hidden by a bend in the cave. Only the head was visible. The razorhead-tipped shaft flashed into the cave and buried itself in the pig's snout. The second cut through the skull, but too low for a fatal hit. Now the javelina began to move and the sound of breaking arrows was added to the angry popping of teeth. Less than ten feet away, we could smell the pig's heavy musky odor. I remembered hearing someone say, "Javelina will fight when cornered or pressed too hard if wounded." This one was cornered and wounded and much too close. The pig made a false start for the entrance, turned and offered a good shot at the neck. The fourth arrow sliced through the lungs and the game was over.

As soon as Tom and I drew back from the opening, Mike leaped in and pulled the javelina out. Growling savagely, he bit into the lifeless body as though trying to tear it apart.

"Mike's had his share of battles," Tommy said. "He has reason for not liking pigs. Look at his scars."

The dog had several old wounds on his face and neck and one long gash on his flank. Now that the javelina was obviously dead, he again reverted to the same docile pet that had ridden into the hills with us a bit earlier.

I got my first good look at a dead javelina. This one — a sow — had tusks longer than the points on my arrows. Unlike most pigs, this animal had no tail. In fact, it is not a pig at all. Its highly developed digestive system places it a step higher up the evolutionary ladder.

"Did you ever hear of one of these things charging a man?" I asked.

"Yes," Tommy answered. "My Dad roped an old sow several years ago and she backed him up against a prickly pear. He dropped his pants on the spot and put his hunting partners to work picking thorns." Tommy's father, Conservation Officer August Timmerman, once captured several javelinas for his employers, the Texas Game and Fish Commission. They were traded with another state for other game animals.

By the time we had loaded our first kill into the pickup, it was only 6:30. "There's a small lake about a mile away," Tommy said. "We should be able to find more game there."

The lake was on the other side of a steep hill. The truck couldn't make it under its own steam so I got in back to add weight. The dogs jumped out and ran on to the top. When we got there, they were sniffing the ground and headed off to one side.

"Looks like we're going to have a chase," Tommy yelled. We ran to the edge of the hill and watched the dogs working in the valley below. Tommy seemed to enjoy this part of the hunt most of all. "Mike's got the scent now," he would say. Then it was, "Tige has it now. Blackie's taking the lead."

The dogs climbed up the other hill and we ran after them. Breathing hard, I was ready when Tommy paused again to watch the chase. Finally it ended in a narrow ravine about two miles from the starting point.

This time there were two javelina. They chose to make their stand in a cave smaller than the first. Shooting into this one would really be hard. I edged up to the opening and saw an angry old boar less than five feet away. It was impossible to come to full draw without fouling the long bow limbs. I drew back as far as I could and shot the

boar right between the eyes. It fell and the second took its place.

I shot it twice in the head but the arrows had little effect. Mike heard the popping teeth and breaking arrows. With a savage growl, he bounded past me into the cave. He met the boar head on and decided he wanted no part of that kind of fight. I was several steps in front as he retreated.

While Tommy held the dogs, I went back to the job of killing the old boar. He was nearer the entrance now and there was a clear shot at his chest with plenty of room to come to a full draw. The boar was dead less than a minute after the arrow hit. Mike pulled the old boar out and we examined the long, triangular tusks. It was easy to see how this animal's reputation for ferocity had been obtained.

The dogs couldn't reach the first pig. The cave was too narrow for us to enter, so we left it there. It probably made some coyote pup happy.

"I'm glad you didn't get them both out," Tommy said as we took turns lugging the heavy body to the truck. "After running two miles, one is heavy enough."

Examination back at Tommy's ranch showed that none of the arrows had penetrated the pig's brains. The brain takes up only a small space in a large head. A shot at the chest is much more likely to bring a quick kill.

So there you have a picture of javelina hunting — Texas style. Perhaps it doesn't require the same skill as stalking, but after you chase them for two miles through that country, you'll have earned your trophy.

You'll need sturdy boots and thick clothing to protect you from the thorns. Bring the shortest bow you own. Mine is sixty inches and I would have welcomed one much shorter. When using dogs, the shots are usually at very close range.

My arrows were cedar shafts tipped with razorheads. They were custom-made by Charles Beavers of Birmingham, Alabama. The quiver I used is an old center-back model by Bear that is no longer being made.

The country around Hondo abounds with game. Deer, quail, turkey, doves and other animals can be taken here in season. For a twenty-five dollar license, the non-resident can try his luck at all these species plus javelina, coyotes, and other unprotected animals. I'd call this a hunter's bargain. ●

BEATING (AND EATING) EUROPEAN BOAR

BY JIM DOUGHERTY

UNLIKE the highly overrated and truly timid javelina of our Southwestern states, the European wild pig or boar is a true pig. The javelina is not a true pig at all but a peccary and the only similarity is purely physical. Both of these game animals however do have similar habits and characteristics and the javelina is most often referred to as a "pig."

Throughout the desert country frequented by the javelina or "grey ghost," the nimrod is constantly harassed with the stories and legends of droves of javelina rabidly charging the hunter and scattering him throughout several counties and leaving him to bleach in the sun, in true Western tradition. These fantasies amount to nothing more than figments of highly imaginative yarn spinning.

A wounded boar javelina can give a hunter a thrill when cornered with his teeth popping like a vicious exchange of small arms fire, but if caution is exercised and the hunter does not put his foot in the pig's mouth, the whole issue can be settled quite calmly.

With the European wild pig (*Sus scrofa*) such stories of charges
(Continued on next page)



Above: Doug Van Howd takes aim at hard-charging Russian boar. He has been charged as many as 14 times by same animal. (Below) Van Howd and his wife, Nancy, have their share of trophies as a result of rigorous hunts.





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and counter-charges have a stronger basis of fact, as such violence is frequent when hunting this particular breed and all of his subspecies cousins. The European wild pig is a descendant of the Old World and most of the breeds found today are descended from this variety from many years past. In comparison to his domesticated in-laws, the wild boar is a long legged critter that will attain a maximum length of five feet and a record class weight of 600 pounds. The average would be 200 to 300 pounds however, which is a heck of a lot of pig, especially if he is trying to eat you.

While the true European wild pig is found only in isolated portions of North America, his cousins, generally referred to by Fish and Game Departments as "feral pigs" are considerably more common and frequent the entire continent from one end to another. Most often it is the "feral pig" that is hunted and talked of as "wild boar" which in truth they are — but not in the pure ethnic sense of the word.

No matter the variety, the wild pig is going to give the hunter a rough go and the maximum in thrills as he attempts to render him into pork chops. Both varieties have tusks and extremely mean dispositions toward one another as well as any intruder upon their secretive existence.

If pigs could see to any great degree, it would be a rarity for one ever to be taken by the bowhunter. They have, however, notoriously poor vision which is their one failing and the key to successful hunting. Their acute sense of smell and hearing evens up the score and great pains must be employed by the man who stalks his prey in its own habitat. It should be pointed out that this lack of sight sense also is true of the javelina, while their other faculties remain as acute as those of their distant relatives.

There are three good ways to hunt wild boar: The most satisfying is stalking him on his own ground in the early morning or late evening hours. Generally a nocturnal animal, he can be found moving and rooting for food all day if the weather is cool and overcast.

Extreme caution must be exercised when stalking the boar and the strictest attention paid to wind currents and direction. The huge old trophy boar is most likely to be found alone, being a hard to get along with sort who prefers his own company except during the time of rut. This, of course, makes him easier to stalk than a group of younger pigs with a big sow,

(Continued on page 52)



BUTTONS & BOWS

Here's A Mystery That's Driving Researchers Frantic . . .
But Perhaps You Have The Answer

BY WILLARD E. BISHOP
U.S. Representative,
Society of Archers Antiquaries

THE "Bath Archery Club — 1821" hutton was obtained from Mrs. Alice T. Tarbox, a well known hutton collector in Arlington, Massachusetts. Her request for some information about this archery club has presented a very interesting pursuit. Thus far no concrete evidence of such a "club" has turned up. Should any reader have information concerning this, the Society of Archer-Antiquaries would appreciate hearing about it.

Initial investigation through my archery library had me visualizing that should specific and authentic reference be found there existed a Bath Archery Club in the year 1821, either in England or America, a little history of archery could possibly be changed. The date "1821" is earlier than the time the United Bowmen of Philadelphia was organized. Dr. Elmer's book *Target Archery* has them as the first club in America in 1828. Their book, *The Archer's Manual*, published in 1830, also is considered the first one on the subject of archery in this country. So, if this club should turn out to have been organized in this country prior to the year 1828, more research naturally would have to be done in the field of its activities.

Turning to English publications: — Hargrove's *Anecdotes of Archery* (1845) has, starting on page 81, three

lists of archery societies as "Existing," "Doubtful" and considered "Defunct." No mention is made of any "Clubs," Societies, etc. in Bath.

The first volume of *The Archer's Register* (1864), page 64, does not list this club. However, it does have THE BATH ARCHERS (Somersetshire) founded in 1857.

There is only one Bath in the United Kingdom. A trip to the local postoffice revealed that there are twelve states that have a town or city of Bath. They are as follows: Illinois, Indiana, Kentucky, Maine, Michigan, New Hampshire, New York, North Carolina, Ohio, Pennsylvania, South Carolina and South Dakota.

One person wrote that he suspected that societies have been formed with some enthusiasts for short periods, during which time badges were designed, uniforms made, rules printed and possibly very little shooting done. Organizations formed possibly for the social aspect under a title of what is currently popular 'clubwise.' This may be the answer to the "Bath Archery Club."

Another thought is that it may well have belonged to the British "Bath Archery Club" which was perhaps not officially recognized until the year 1857 as "The Bath Archers." It does not seem unlikely that such a club would go unrecognized for a period of

thirty-six years. The older clubs certainly had buttons of this kind.

There is also the feeling that there might have been a number of unaffiliated clubs, just running on their own and as a result there is no official record of them. This could be the case of "The Bath Archery Club — 1821."

The button is made of horn, is 1-13/16 inches in diameter and is similar to a type of English button of that era. The design was incised by using a chisel-type instrument 1 mm. wide. A peculiar feature in the design is the direction in which the arrow is pointing. Most motifs have the arrow pointing away from the handle of the bow, while on this hutton it is just the opposite.

Several years ago, I had the occasion to pass through a town in Maine. I think the name of it is Alfred. In the center of this town is an old house on top of which are two ornamental iron fixtures having a crossed bow and arrow. Conversation with one of the older inhabitants disclosed that this particular motif of the arrow pointing downward was to designate to the Indians that the residents of this particular house were friendly and welcomed the Indians to visit the household. Whether the person who made the design on this button was aware of this symbolism can only be conjecture. ●

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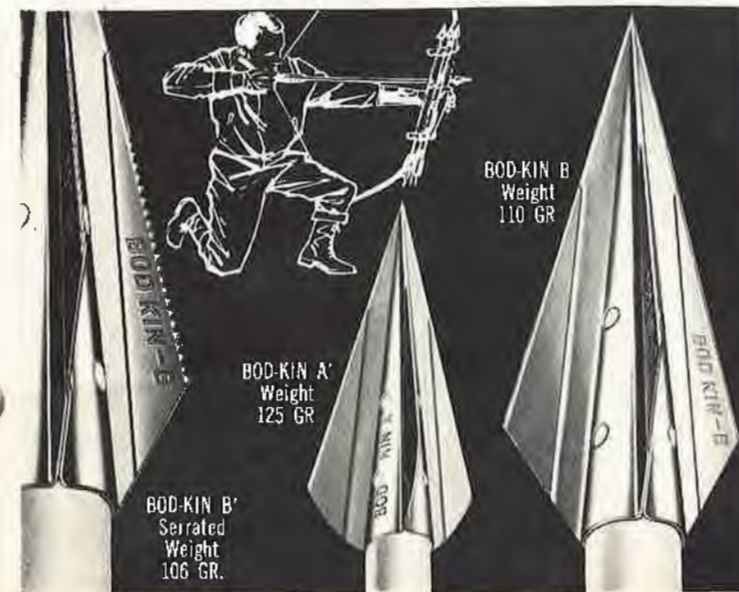
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INDOOR ARCHERY: WHAT IS THE FUTURE? BY DOUG MORGAN

(Morgan, a long time archer, has been associated with indoor lanes virtually from their beginning. As the first manager of the Downey Archery Lanes in Downey, California, a pilot project in the field, he had ample opportunity to observe success — and learn from mistakes!)

INDOOR archery has seemingly captured the imagination and enthusiasm of the consuming public where it has been installed on a sound financial basis and where it has been in operation for at least six months.

As a sport, indoor archery is one that is promotable; one that is relatively simple in which to interest people on a participation basis.

As a business, it is like many pioneering ventures. The ratio of failure is about the same as any new type of retail business that needs to be introduced to a consumer before it becomes profitable.

From the experience with the new automated indoor archery lanes on the West Coast and elsewhere, it

is apparent that a period of about six months of promotion must be sustained before an indoor archery center begins operating on a profitable basis.

Indoor archery has many advantages over other new businesses with comparable investments. The population explosion coupled with more leisure time, more recreation money from the family budget and the current and perhaps, enduring trend and concept of physical fitness, all point toward the eventual howling success of indoor archery.

One of our new archery families mentioned to me that the reason they like archery is that they do not have to shoot indoors all the time. Throughout the nation there are several outdoor tournaments taking place every weekend. "Our whole family can pack-up for the weekend and have lots of fun. They are able to participate in an outdoor shoot while camping out and meeting other families from out of state."

When I came to know this family better, the wife told me that since they took up the sport of archery it has brought the whole family closer together than they had been in fifteen years. At the present time, even



Indoor archery centers with automated equipment afford the professional such as Don Cavallero (above) to keep in top form for competition even during poor weather.

Left: Novice gets off to a good start with instructors such as Mory Harning paying close attention to even minute errors in form. If corrected, archery may have a convert; if not, the neophyte may quit in disgust.

Right: Shoots for cash prizes have been done much to arouse interest among all categories of archers. Marcie Bangert of Oregon traveled 1000 miles to win first place in Annual Indoor Archery Championship Tourney.

Below: And here's a sport, too, in which husband and wife, even the entire family may compete. Eva and Fred Francosa ore evidence of the trend toward such pastimes.

*This Writer,
Experienced In
The Field, Offers
Some Suggestions On
Success Formulae*



their five-year-old is shooting, and quite well, I might add.

Although present indoor archery executives wince when bowling is mentioned, many of bowling's successful ideas have been borrowed and put to work in indoor archery centers. It is obvious that the most significant of these is the league concept. Other promotion techniques used in bowling have proved to be beneficial to indoor archery centers.

Undoubtedly, archery will combine with bowling, billiards, swimming and other participant sports and games to meld together into huge recreation complexes throughout the country. Several are in the construction or planning states at the moment.

The existing archers are having a fine time shooting indoors in a league. Leagues offer them an opportunity to practice during the week and meet with friends. They also have time to discuss shooting problems and new methods of making accessories. Being an archer myself, I know that the majority of shooters enjoy shooting indoors one night a week. Most of the archers look forward to shooting the novelty games and different targets that the indoor lanes provide. Also, the money shoots, pot games, and sweepstakes are quite popular. In well operated lanes, such activities take place at least once a week.

It has been the experience of many indoor archery managers and operators that existing archers must form the nucleus of the center. However, in most

cases, this does not provide enough dollar volume to allow the center to operate on a sustaining basis.

Thus, the only answer is to put the center on a promotional basis; offer free lessons, and train those who want to shoot a bow and arrow to the degree that they enjoy shooting regularly.

I had a lady tell me she would never bowl because she didn't like it. But she loves archery and has become what we call an "arrow-coholic." Her husband

came in to try the free lessons, as he always had wanted to shoot a bow. His wife came along to watch him, and one night she picked up the bow and within fifteen minutes she was hitting the bullseye. In July, she entered the \$5,000 indoor tournament with her husband. After it was over she couldn't wait for the next one to take place. During the time I have been instructing, I have only found three people I could not teach to shoot in twenty minutes.

A new indoor archery center will train between 4,000 and 6,000 people to shoot in its first nine months of operation. This points out a fundamental requirement for any indoor archery center. From the beginning, the new installation must have a mass of people from which to draw before it can even begin thinking of profits.

As reported in the July-August edition of BOW & ARROW, the first indoor archery center was conceived and constructed at Mount Ephriam, New Jersey. It opened in 1961.

However, it took the imagination of Bryan Dickinson, former president of West Coast Engineering, Inc. of Seattle, to put indoor archery equipment on a fully automated basis and to place the sport on a business-like basis.

Less than two years after West Coast Engineering, Inc. installed its first sixteen lanes of Archermatic target returns at Burien Archery Lanes in a suburb of Seattle, twenty-two manufacturers of indoor archery equipment are competing for a fair share of the investor's dollar.

Although there have been a few failures among indoor archery centers in the initial months of the new sport and business, the amount of money being invested in equipment, buildings and locations today would indicate the sport will continue to grow. It will be many years, of course, before indoor archery will have saturated the indoor recreation market as bowling has done. In the meantime, I feel that many investors who jump on the bandwagon early enough will have made excellent profits pioneering the industry.

One of indoor archery's most comforting assets is the fact that every member of the family can partici-

pate at the same time. Matter of fact, indoor archery's unique handicapping system allows each member of the family to compete on an equal basis. Father can shoot against son, using different equipment, but shooting on the same target. Handicapping will provide a score for each that can compare their individual skills.

Mother and daughter has been attracted, too. There is probably no other sport a woman can take part in where she looks as graceful and poised as when she is at full draw.

And women take to archery like a duck to water. During a television promotion at Downey Archery Lanes, twelve teen-age Adrian models were issued equipment and given a half hour's class instruction before the show went on the air. By the time Jack Barry, KTLA's host of *L.A. Today*, went on the air, all twelve were shooting well enough to appear as archers on camera. And they looked good, too!

And I can certainly attest to the fact that women can be top-notch archers, as the largest trophies in our house belong to my wife.

In July, three days before the \$5,000 National Indoor Tournament, a man and his wife entered the Downey Lanes and asked to learn how to shoot a bow and arrow. They wanted to shoot in the tournament, and they had an eye on winning money! The thrill of shooting archery acts like a magnet; one cannot watch people shooting and having fun without wanting to try it themselves. In this case, though, the prizes were an incentive, too.

Today housewives leagues are doing well. The ladies like to get out from daily pressures, so they leave their children in the nurseries while they practice up and try to get an edge on their husbands.

In the last six months, we involved in indoor archery operations have gained a tremendous amount of knowledge. This knowledge is being put into practice and is working out very well indeed. The old saying is that one can only profit by his mistakes; and we have made our share.

Management in the lanes marks the success — or failure — of the operation. The manager must have

that special feeling for the existing archer as well as the newcomer. This knack might possibly be the missing link of success. No matter what is done, or how it is done, without this feeling, problems arise.

In preparing this article, I talked to Bob Blair, a veteran in the short history of lanes management and a member of the Professional Archers Association, seeking his views.

"The most gratifying part of the job from our side," he contends, "is being able to work with people who have had no previous contact with archery. To take these people and help them choose their first rental bow, show them how to put on the arm guard and glove, then help them to shoot their first arrows offers a feeling of accomplishment. I feel that I've done something for archery by making another introduction."

Blair also recalls the night when a fellow came in with an old straight end yue wood bow and wanted a new string. Blair looked over the bow to determine the length of the string and noticed a long longitudinal crack in the upper limb. He pointed this out explaining that the bow was a collector's item and that he would hate to see it broken, a certain result if it were used.

Blair refused to sell the man a string on this basis, and the wouldbe customer went into a minor rage, declaring, "This is a helluva place. Try to buy a little thing like a bowstring and they won't sell it to me." He stormed out of the shop.

But in ten minutes or so, the same man was back. He explained that if the bow was truly a collector item, then perhaps they would like to have it for display. He handed the bow to Blair and walked out again. To this day, the bow still hangs on the wall of the pro shop, a conversation piece and a curiosity.

But I feel that this aptly reflects some of the thinking and the type of judgment that must be utilized in handling people. Public relations and personal contact is a big part of the job.

Let us not misunderstand that business management is of the utmost importance too. This combination is a must for success.

Ours is a new venture, with new problems for which answers are not readily available. However, you can look forward to our being on the right path to success and we are enjoying the prospect of making you the merry archers of Sherwood Forest.

The future of indoor archery? Only time will tell. However, interviews with investors, lanes managers throughout the country and many archers lead one to believe the sport of indoor archery is just getting off the ground. Indoor lanes in Washington, Oregon, California, and Colorado report they have signed up more league members this fall season than they had when the regular season closed last spring.

The American Indoor Archery Association also has progressed rapidly and has more than matched the pace of its sport. Bob Hendrickson, president of the American Indoor Archery Association, after a swing through Oregon and California in July, said that he expected a twenty percent increase in the number of sanctioned archery leagues this fall.

Equipment manufacturers are equally optimistic about the 1962-63 fiscal year. Several report they have more orders for lanes equipment than were anticipated. The sale of bows, arrows and accessories already is ahead of projections made earlier in the year.

Historically, indoor archery has no past. But all involved point with pride toward the almost unbelievable potential offered by indoor archery. It is a business sure; but it is a business in which many thousands, and perhaps hundreds of thousands, of people can take pleasure from knowing their recreation time is well spent. ●



Upper left: Indoor archery is sport in which housewife can indulge on few moments notice and without elaborate preparations. Heavy concentration (left) and attitudes of determination (above) are common denominators among women enthusiasts, while their children (right) follow their own pursuits in archery lanes' supervised nursery.

BOAR HUNTING

(Continued from page 46)

as stalking any group of animals limits your chances of success.

When closing for a shot, a rearward approach is best, so that the arrow can be placed to angle forward into the chest and bypass the armor plate that lies along the sides as far back as the last rib. This is an unusually heavy layer of muscle and skin sufficiently stout to stop heavy arrows from ultra fast hunting bows.

To *way* a big boar at ten yards broadside and see your arrow stop after penetrating six inches is upsetting, but more so to the pig. Upon smacking one of these irate porkers, the wise hunter is prepared to move in any direction — including straight up — as the boar will quite likely want to get in his two bits worth next.

Doug Van Howd, one of the country's finest wildlife illustrators and bowhunters, is a past master at the art of boar hunting and boar dodging and is probably the foremost authority on hunting wild boar with bow and arrow on the West Coast.

Doug has personally been charged up to fourteen times by one boar,

and needless to say, this will give even the coolest a few bad moments. In taking over a dozen of the big boar, he has had to do everything from jump right over them to fending them off with a whack of his bow when a tight turn didn't allow time to nock another shaft. Imagine yourself in this situation and you can appreciate the type of heart-stopping action to which I'm referring. A bellowing boar with a face full of six-inch tusks shaking back and forth is enough to make a fellow realize a bow is a pretty puny weapon. Obviously, those responsible for the discontinuing of Big Game Awards for wild boar in the NFAA have never had a pig try to eat them from the ankle up!

Both sexes sport tusks, although those of the boar are invariably longer. Sows are excellent mothers and will protect their young from intruders for months after they have been weaned. It is a wise man who by-passes a sow with a batch of potential sausages.

The most successful way to hunt wild pigs is with dogs. A spooked pig will brush up, and locating him, even within a confined area, is a losing proposition as they will lie tighter than the wisest buck or

the smartest cottontail and even the bouncing of a rock off of his tusks will sometimes fail to dislodge him. But a well trained pig dog, usually of the bulldog family, can locate him and engage him in combat upon which boar seem to thrive.

With a good dog to locate the game and bring it to bay, the hunter has a better chance to close for a killing shot without as great a risk of becoming incapacitated.

An old pit bull with which I hunted several years ago in Los Padres National Forest dearly loved to mix it up with the big boys and was a holy terror on any smaller pig that crossed his path. Battle scarred and greying, he sported a fiberglass collar to protect his throat from the slashing tusks as he closed for a firm ear hold. Even in areas of high pig concentration, where the turf is torn literally to shreds and the tracks are so thick as to corrugate the ground, a man could hunt for days and not see one sign of a boar in the flesh. But a good dog will have one at bay in scant minutes; then the hunter should close fast to prevent injury to a good animal.

Drives comprise another fair method of hunting pigs but this

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requires excellent terrain in order to funnel the animals to the standers, who must be absolutely quiet and motionless. Although not the best method, a few good boar will be taken in this manner. Usually the smaller, eating size pigs will fall into the sack with this type of tactic. An old boar is loath to leave his hiding spot regardless of the confusion, and most drives will pass him by.

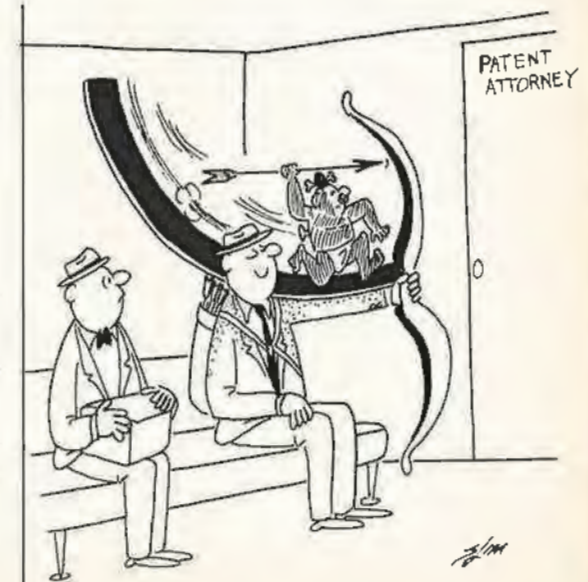
When it comes to what to do with the porker, the bowhunter-gourmet has a lot of fine eating in store. As a rule the wild boar is not fat and his meat has a distinct taste unlike anything else I personally have tried.

The most delectable method of preparing a wild pig is the old pit method and it is really top notch. Garnish the meat with a few carrots, potatoes, onions and a clove

of garlic and wrap it tightly in moist clean burlap that has been salted and place it in a pit on a bed of coals. Cover the whole kaboodle and go about your business for the rest of the day, as it should run about six to seven hours on a medium boar.

When done, you have a meal that will make a confirmed boar hunter of you for the rest of your days. Open pit barbecue is also a terrific way to fix any wild meat and not enough can be said about wild pig, marinated in a light wine sauce and basted with a spicy butter.

A big boar's head makes a trophy that will draw comment from all of your hunting partners, as he leans at you from the den wall with his razor sharp tusks prominently displayed. All in all, the wild pig makes a top notch game animal anyway you look at it.



By Robert H. Booth

yabusame: nippon's cavalry archer

THE pounding of horse hoofs on hard ground! The twang of a bow-string! A short rebel-like yell, and the soft *swosh-h-h* as an arrow heads straight for its target!

The archer on horseback quickly places a second arrow in position, draws, aims, and releases . . .

No, this is not a classic Apache,

Sioux, or Mohawk attack — circling a terrified group of white settlers perhaps for the benefit of TV or film cameras! It is Japanese archers shooting Far East style at an annual *Yabusame* shoot — somewhere in Japan!

To the American, Japanese sports conjure up a hazy vision of judo, karate, swimming and ping pong. Or a

veteran of World War II with shrieks of "bansai" still ringing in his ears will visualize the Japanese warrior with swinging *samurai* sword in hand, and waves of human attacks!

The student of Far Eastern history and modern-day Japanese art films, will likewise visualize the Japanese warrior as a sword-wielding figure —

such as the Japanese actor Mifune Toshiro in the award-winning *Rashomon*.

However, archery is very much a warrior's arm in the battling history of the Japanese — and the *yabusame* ceremonial meets which are just as popular in Japan today as a judo or sumo bout are held under rigid stand-

ards nearly a thousand years old.

English written historical records of Japan carry little of the history of Japanese archery — that is, in comparison to the much more publicized sport of judo or kendo (sword play, or fencing). However, Japanese language histories record the specific ceremonial sport of *yabusame* as having been started during the reign of the Emperor Temmu (the fortieth emperor) which would place the event very close to a certain event in a manger at Bethlehem.

Definitely the ex-Emperor Shirakawa (the seventy-second emperor) did, in the fourth month of the year 1096, hold a *yabusame* event. *Yabusame* means literally "shooting from a running horse!"

This means it is highly possible that certain unclear legends of Japanese warriors riding with the legions of Genghis Khan several centuries later may have been true. The Mongol conqueror was famous for archer-cavalrymen.

What is true is the definite ability of the Japanese archer on horseback. He would have been a formidable foe to meet on a field of battle. He was both an excellent horseman and excellent archer.

Unfortunately (or fortunately) due to the geopolitical confines of the Japanese islands, Japanese archers were never in combat except against other Japanese. However, in the Thirteenth Century, the archers were mounted and ready to meet the expected invasion of the Mongolian hordes under Kublai Khan who were sailing in a vast armada towards the Japanese islands. A typhoon destroyed the armada — and became known as the divine wind — or "kamikaze" — to the Japanese.

The classical ceremonial shooting of *Yabusame* had 16, 10, 7, or even 36 shooters in former days — a grouping which could be symbolic of a cavalry

troop. However, nowadays there are generally three shooters dressed in appropriate costume and mounted on horseback.

(*BOW and ARROW* in an earlier issue described the Japanese bow and arrow. The same standard off-center bow with arrow quiver hanging on the back is *Yabusame* equipment, a difficult bow to aim accurately, but otherwise equal to the English longbow.)

A *Yabusame* shooting course of two cho is laid out. One cho equals approximately 119 yards — a little over a football field's length. The three horseback archers work as a team.

At a given official signal, they gallop along the course in tandem — or one after the other. They shoot at

Little
Has
Changed
Except
Time
In
The
Centuries
This
Ancient
Sport
Has
Been
Practiced!

A modern touch is added to the traditional dress of *yabusame* archers with glasses, as they prepare to compete in this sport at Kamakura shrine.

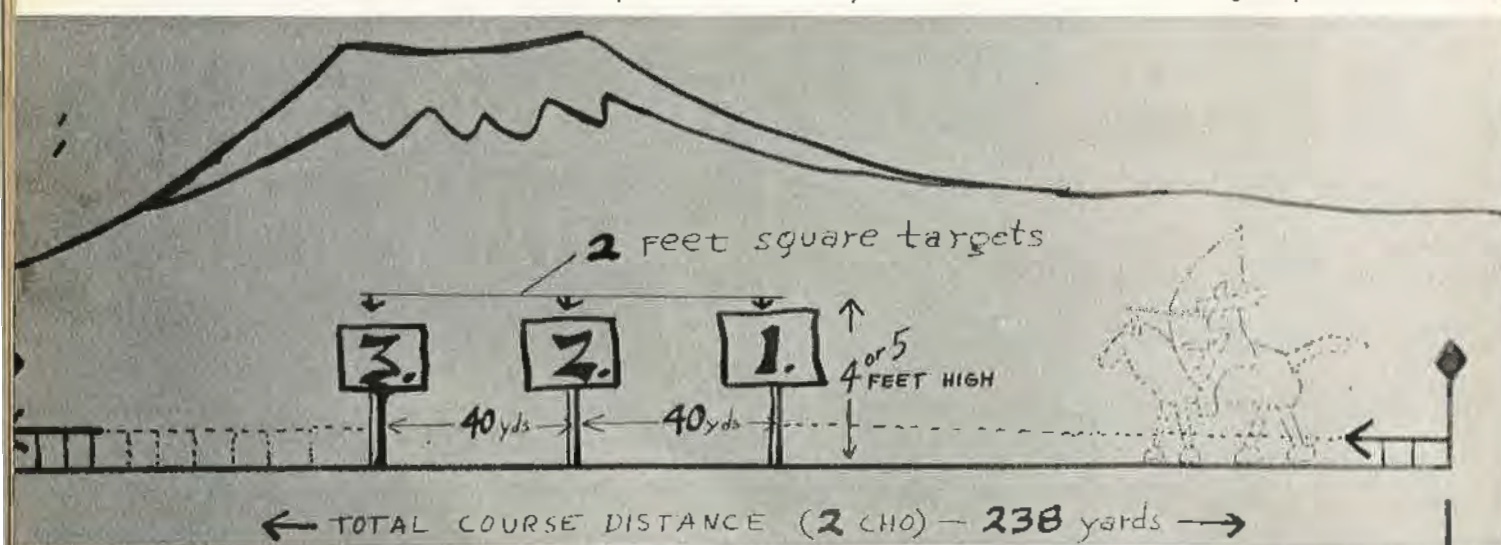
These Japanese characters designate that country's spelling of "yabusame" and are literally translated as "shooting from a running horse" by author.





Author's impression illustrates the running course for Japanese cavalry shoot such as is conducted in this sport even after many centuries.

Below: Is typical yabusame course but spacing of targets may vary, according to needs for a tougher course. Wooden targets split if hit in center.



three targets, two feet square each. Each target is put on a pole three or four feet high, and posted at approximately thirty yard intervals.

Notice of course the similarity of a two feet square target atop a three or four-foot pole to the body of a man. Also, to test yourself for sheer archery skill, employ one horse, saddle, three targets, a stretch of ground equal to 238 yards, and a box with a quiver of arrows on your back. Then, set said horse a-gallop in a direction somewhat parallel to the three targets, then aim!

shoot! re-string! aim! shoot! re-string! aim! shoot!

If you can imagine yourself doing the above in the time it takes you to deliberately read aloud the "aim! shoot!" sentence, then you know just how fast on the arrow-draw you have to be to hit the "Yabusame" style target. Naturally, expert Yabusame horsemen rarely miss.

Students of Japanese cinema — the films usually shown in art houses — will recall seeing some Japanese costume drama where horseback archers

do engage in combat. As indicated in the original "platoon" arrangement of Yabusame, and the present three-man team shoot, the archer-cavalry men did have cavalry values for battle.

However, most of the individual glory has gone to the sword-wielding samurai who meets his rival at sun-up or sun-down in the wide open paddy fields or deserted village main street.

But the ceremonial Yabusame shoot has more historical and costume value than a judo meet.

The ceremony itself was adopted



Mounted samurai warrior of old Japan wore plated armor as protection, horned helmet, and gourd over back.

by Minamoto, one of the two military families of feudal Japan. In uniting the various Japanese clans, Minamoto obviously used his archery-cavalrymen to distinct advantage. Then, for many generations the Minamoto clan held the annual Yabusame ceremonial-shoots.

In 1266 it became an annual affair at the famous festival of Hachiman Shrine at Kamakura. Kamakura is the ancient seat of the Bakufu, or "camp" government about sixty miles below Tokyo on the seashore. It is most famous in travel folders of Japan for the huge bronze statue of Buddha pictured there.

Visitors to Japan lucky enough to be at Hachiman Shrine at Kamakura in mid-September may see this exotic display of ancient archery skills any given year.

The ceremony also was held at other shrines throughout Japan in the ensuing centuries, and equally famous was the event at Kasuga Shrine at Nara. This was held by Ashikaga about the same time that Yoritomo, the first Shogun of Minamoto, in 1186, was holding the festival at Kamakura. But the Nara ceremony fell into disuse during the latter part of the Ashikaga Shogunate (1338-1573).

When Iyeshige, the Shogunate heir, fell victim to smallpox, his father ordered Yabusame to be restored after

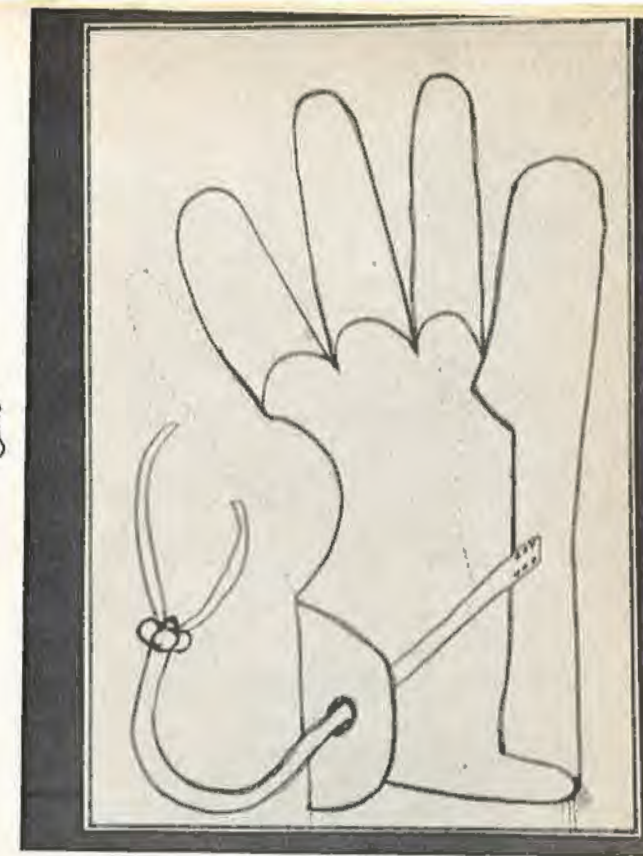
the style given in the old records, and the ceremonial shooting was performed as an offering before the Shrine at Takada, Edo, on the fifteenth of the third month, 1728, with a prayer that the Shogunate heir might be restored to health.

In 1875, seven years after the Restoration of 1868, Viscount Masanori Honda restored Yabusame which had all but died, and Prince Tokugawa gave it at his private residence in 1887 when the Emperor Meiji — often called by historians the "Lincoln of Japan" — was present at the performance.

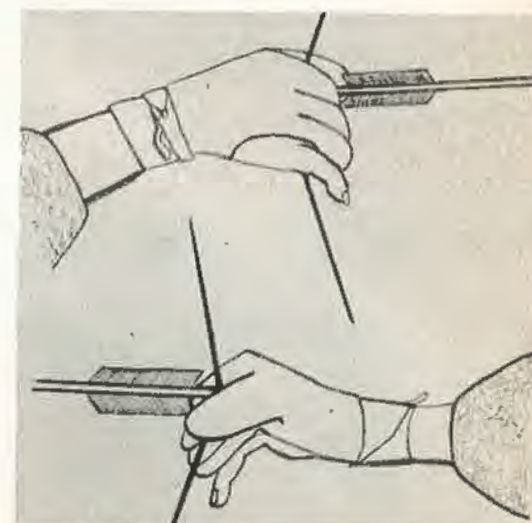
Other than at Hachiman Shrine at Kamakura, Yabusame is also held throughout Japan on certain felicitous occasions or at the yearly festival of any given local shrine. It is a ceremony-shooting match of great interest, typical of ancient Japan, and many foreigners make a special visit to shrines to see it.

For the archery-historian-linguist who would be accurate, we offer the definition of the word, ya — an arrow. In the illustration, one will notice the obvious similarity of the character to a man with a bow. As explained: "shooting an arrow from horseback."

BOW and ARROW now makes the tongue-in-cheek suggestion that Yabusame is a sport with specific possibilities for Olympic game standards.



Glove used in the Japanese sport (above) was of leather with thong to tie about the wrist. Thumb was thicker than fingers and was padded. Below: Yabusame grip is shown in this sketch by an 1868 American tourist.



Certainly, as a sport, it stands as one of the most ancient, with horsemen riding today in Japan costumed and dressed exactly as they did a thousand years ago.

And for those who think it doesn't take skill — both as a horseman and archer — then dare to try the little test we outlined previously . . . gallop horse, aim, shoot, re-string, draw, aim, shoot, re-string, draw, aim, shoot . . . now you try it! ●

BOW BITS



This new record elk, shot with bow and arrow, was bagged by Duane Johnson of Coeur D'Alene, Idaho in that state's Shoshone County. Shot was made at 35 yards, using a 52-

pound bow and 500-grain cedar arrow with a four-bladed Bear razor head. On left is Gary Swanson of Swanson Brothers Taxidermists, Yucoipa, Calif; at right Doug Howd.



ONLY PROS

The only two pros in the state of Oregon have found a home. Dale K. Marcy (left in photo) is the newly appointed manager of Portland's Archeryland indoor archery center, while Howard Valentyne is manager of the installation's pro shop.

Until recently, Marcy was master bowyer for Howatt Archery Company in Yakima. He is four time winner of the Northwest Archery Golf Championships and is former president of the Washington State Target Archery Association as well as vice-president of the Washington Bow Hunters.

NEW EASTON CATALOG

Doug and Jim Easton, pioneers in the manufacture of aluminum arrow shafts, have come up with a brand new catalog that is more than that. This quality publication offers information on shaft selection, specifications of the various aluminum shafts which the firm produces, and a good deal of general archery information in the self-help category.

Information includes several pages on hunting arrows as well as specifics on attaching nocks, cresting your arrows, fletching aluminum shafts, the proper means of straightening them, et al.

For a copy of this compact little guide on improving your scores or game take, write to James D. Easton, Inc., 15137 E. Califa Street, Van Nuys, California.

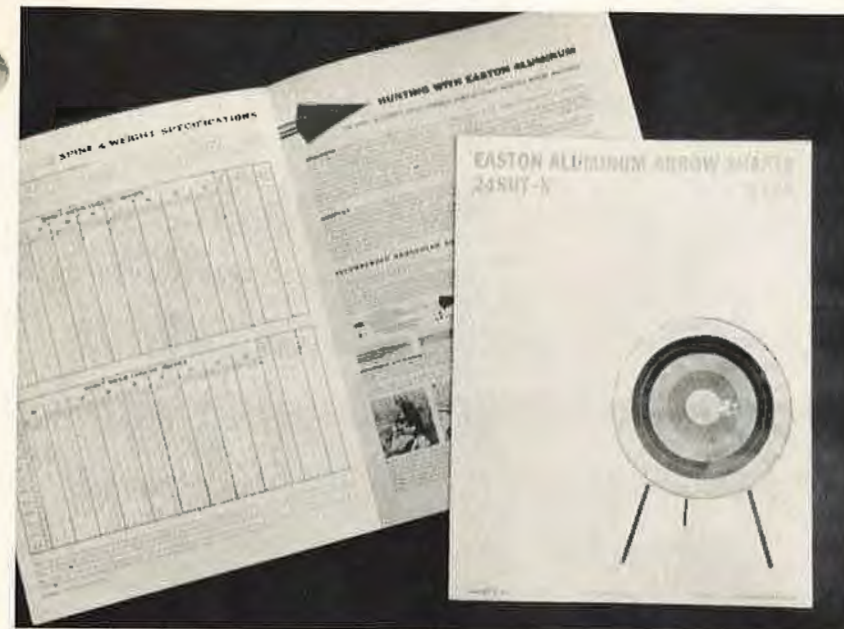
RADIO-CONTROLLED BOWHUNTING

Here's a little package that could prove useful to archers in the field. It's a pair of walkie talkie radios that are being offered in a kit by Allied Radio Corporation. The item is known as the Knight-Kit C-100 and, once assembled, is good up to a quarter of a mile. It comes complete with carrying cases, batteries, and the electronic gear necessary to put it together.

So, if you're going into the field with a friend and want to keep in contact during the stand for deer or other game, letting him know what you've spotted or where the game is, this could be ideal. The kit sells for \$24.95. For information, write to Allied Radio, 100 N. Western Avenue, Chicago 80, Illinois.



Sue Anderson, Miss National Field Archery, checks the newly designed target bores being made by the American Excelsior Corporation. These bores were used throughout the 1963 NFAA Tourney, are compressed fiber.



NATIONAL'S NEW MODEL

The new National Bow Quiver has come out with a new model of its "Snap-On" that holds five arrows rather than the conventional four. It not only holds the arrows securely, but allows instant, silent finger-tip release, yet can be fitted to virtually any bow without cutting or drilling.

This quiver is constructed of 100 percent specially compounded rubber. This is supposed to avoid warpage and breakage, and of course, do away with the possibility of rust. The retaining band remains permanently attached to the quiver, and cannot be lost or broken.

This one according to last report, is selling at \$2.95. It can be obtained from National Archery Company, 2700 Riverdale Road, Minneapolis, Minnesota.



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Bert Popowski beams happily over the mighty muley buck lured to within easy range with North American Deer Lure.

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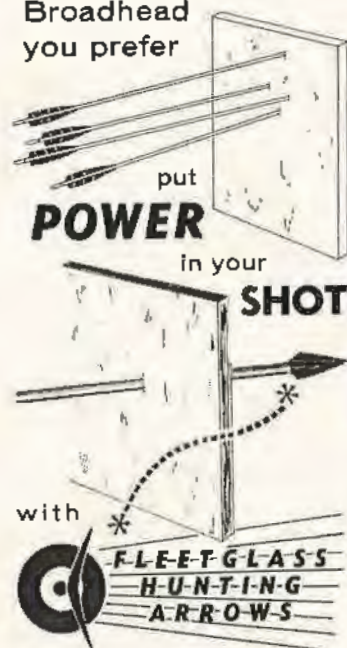
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MAIL POUCH

(Continued from page 6)

beginning. A national moratorium
declaring all who will qualify, as
amateurs of that date, and classes
for amateurs, while the semi-pro-
fessionals (non-amateurs) and pro-
fessionals shoot for the top ten
places in their divisions might also
be worth consideration.

Chuck Morrison, Pres.,
Progressive Archery Assn of
Southeast Michigan,
Monroe, Michigan

FOR THE BEGINNER, TOO

I am a beginning archer and was
having a hell of a time spotting
books or magazines that could help
me in the selection of equipment
and places to purchase the equip-
ment.

After a three-week search of the
magazine racks in many stores, I
found the first issue of BOW &
ARROW. It was like finding a map
to some lost treasure. The magazine
was full of information and the
articles were very good, especially
Bow & Terror. I was once working
with the Special Forces and found
this article of great interest.

Allan Kahn,
West Los Angeles, Calif.

KNOWN BOOSTER

Permit me to offer my congrat-
ulations on the production of a
magazine that has long been need-
ed in the archery world, both here
and abroad.

BOW & ARROW obviously is a
publication to which archers of all
categories can look forward with
confidence and the anticipation of
complete authentic coverage of all
phases of the sport without the
feeling that any compromise has
been made in any way whatsoever.

Frankly—I'm impressed.
J. W. (Andy) Anderson,
Formerly Editor & Publisher,
TAM — The Archers' Magazine,
Philadelphia, Pennsylvania

HE'S PUZZLED, TOO

Give this thanks to Jack Lewis.
It's good to know the NAA, NFAA
and PAA are as confused as I am
on the amateur and non-amateur
status. I think I'm the latter, but
it's a hot item here, so don't let
this topic cool. (See *Gone But Not
Forgotten*, July-August 63 issue).

Robert P. Lackner,
Monroe, Michigan

PLASMA, PLEASE

Maybe this magazine of yours
will get a little life back into arch-
ery around here.

Howard Stegmaur,
Marshalltown, Iowa

NOW WE'RE PROS, HE SEZ

Selection of bows, in all probabili-
ty, presents the largest single
problem to all but the best archers
and those who have access to pro-
fessional advice. Your publication
now offers this professional advice
to all who seek it.

Louis Barbeau,
Edmonton, Alb., Canada

books
for
bowmen



HERE IS YOUR HOBBY . . . ARCHERY
by Bernhard A. Roth; G. P. Putnam's
Sons, \$2.52, 128 pp. This is a volume
that is obviously meant for the begin-
ner in archery, but it contains a wealth
of information for the experienced bow-
man, too.

The author was editor of *Hunting &
Fishing* magazine for three years and
is a winner of the annual award of the
New England Outdoor Writers Associ-
ation.

For the beginner, this book begins
with basics. It takes him through the
evolution of the bow, then the author
describes and amply illustrates all of
the techniques the beginner needs in
order to develop himself into a com-
petent bowman.

And Roth will endear himself to the
hearts of that gentry known as the
do-it-yourself clan. He devotes a num-
ber of chapters to the subject of how
to save money by making your own
equipment or repairing what you have.
There also is a section devoted to the
progress made in materials for bows
and arrows both and the technical
gains in tackle manufacture.

There's more, too: Rules and tech-
niques for different types of archery
competition, tips on hunting, and even
a chapter on safety with a bow.

If there is any fault at all with this
volume, it is the fact that Mr. Roth has
attempted to pack too much into the
text, not spending sufficient time or
wordage on the individual phases. But
for the beginner — one who is vaguely
interested in becoming an archer —
the information herein could easily
lead him to look for more answers. MH.

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Champions On Parade

*What Typifies A Winner?
These Photos Offer
Some Of The Answers*

IN looking for a common denominator in the shooting form and technique of champions, we went to the National Archery Association Tournament held this year at the University of California at Los Angeles for these photos.

And in studying the results, I would have to say that there are only two common denominators. At first glance — and in every case — the concentration is reflected in the facial expressions of the individuals; this is far and away the outstanding feature.

This typifies a real champion. Notice the eyes, the set of the head, the general picture of confidence;

you soon begin to realize that there is a great deal more to the art of archery than simply aiming and releasing the arrow. In this photo study of the top champions, both national and international, we will attempt to point out various phases of form and technique that have made them great.

NANCY VONDERHEIDE, for example, has proven her talent, but anyone who ever has seen her shoot realizes that her ability to concentrate is one of her greatest assets. A young lady with full recognition of her faults (whatever they may be), she also has a tendency after each shot to stand with head lowered, talking to herself in low tones. She frankly admits that this one-sided discussion concerns an evaluation of the preceding shot and what she could have done to improve it.

ED RHODE, the Iowan who won this year's professional men's title, is a gentleman who never lets up in a tournament or on the practice field. His scores in this and past tournaments are reflected in his form

Left: Note the perfect three point anchor of NANCY VONDERHEIDE, using tip of nose, center cleft of chin, supported by web cup in release hand. This provides perfect uniformity in that rear anchor point, responsible for elevation, and dual alignment of string also controls the lateral flight of arrow. Perfect follow through is reflected with release hand slightly to rear but still in tension line.

Right: ED RHODE affords study of the perfect line in power train of bow hand to anchor point, to right elbow. This follows physical theory: If we draw in line, release in line, the arrow of necessity must fly in line. He uses the low or chin-to-nose-to string anchor and the flat or low grip so bow centers itself in the hand.

JACK SAULS, like many fine target shooters, uses the low or chin anchor. Note small piece of black tape placed on string in line with the right eye of alignment. This affords definite point of string-to-bow alignment necessary to perfect shot. His follow-through typifies tension factor of power shooting; the release hand moves to rear, parallel with face.





DAVE KEAGGY, JR. (below) illustrates perfect power train in the straight line extending from his bow hand to his left elbow. There is no greater testimonial to his father's teaching techniques than the records he has set.



and, in turn, reflects the long hours of aiming and letting fly.

JACK SAULS is the third member, in sequence, of our Parade of Champions. Jack is a man of many talents, being a fine professional dancer in his home town of Hollywood, Florida, and one of our top competitors in any and all major tourneys. For a man who works as hard to win as he does, I never have seen a finer sportsman on the top target.

A man whose form is displayed here and who truly deserves the up-state position for his recent accomplishment in winning the International Championship at Helsinki, Finland, is CHARLIE SANDLIN. This mild-mannered man is truly one of the great students of the game of archery today. A tireless worker, never satisfied with his accomplishment, he is — outside of his coach, Max Hamilton — his own worst critic.

In his finest shooting form at the UCLA meet was our finest young archer today, DAVE KEAGGY, JR. This well-mannered and modest young man takes his place among the great archers of all time at the ripe old age of sixteen years. Dave, a member of our recent FITA team and holder of every title an Intermediate can hold, always is a constant threat to any and all adults.

Last in our group of champions, but truly first, is one of the truly lovely ladies of our time in the great game, MRS. ILDA HANCHETT.

Ilda was a champion in 1932 and today still takes her place among the current greats in this growing field. Her style of follow-through is a trademark all her own, but it scores Golds. ●

CHARLIE SANDLIN uses side version of low or chin anchor, usually referred to as "western" anchor. Also note the addition of a small kissor, or button, that fits the lip line on right side. This makes for perfect elevation; in large part, controls string alignment. In release, his right hand moves just slightly to the rear with fingers cupped, still in same primary position as in release. This insures some amount of energy off the string each shot, eliminates plucking movement causing high arrow.



ILDA HANCHETT was national champion in 1932, then did not touch a bow from World War II until 1963, but still she retains same perfect form and technique observed in the other champions. Her own mark of identification is the type of follow-through used for years by accomplished students of the game. Note that the arm travels all the way to the extended position, completing release.



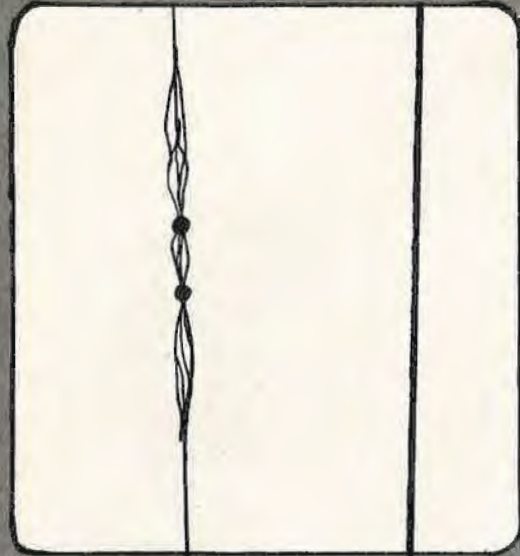


STRING TALK

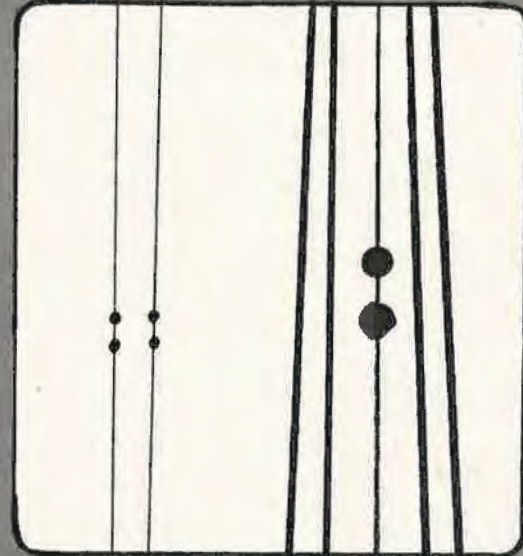
BY JACK NICHOLS

If you've taken time to look at these offbeat cartoons, you've no doubt guessed that John Stuart Nichols is an archer. A 1962 graduate of the Ringling School of Art in Sarasota, Florida, he says he became an archer through necessity, as he was a junior counselor at the New England Music Camp at age 16. There he had a choice of supervising lads on K.P. duty or becoming an archery instructor.

We'll see more from him after he finishes remodeling an 1880 house for his bride to be.



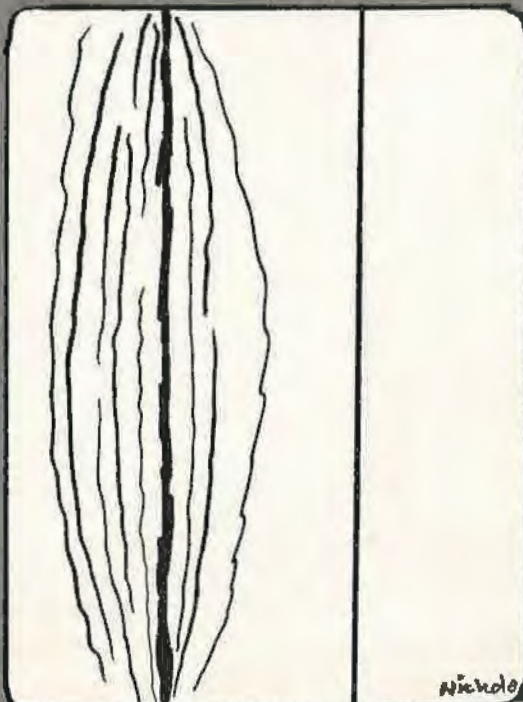
"I washed it today and can't do a thing with it."



"She doesn't shoot. She just stands around."



And then he says . . . "You don't need matches to build a fire. I know a trick with a bow."



"Ya'll shoot in this weather all the time?!!"

ARCHERY CHAMPIONS - 1

DON CAVALLERO

Repeating his 1962 championship when he set many new records (Field 540, 515—Hunter 534; 507—Animal 532), Don Cavallero of Los Angeles won the 1963 National Field Archery Freestyle championship at Enchanted Forest. Don again averaged over 500 per round for an equally impressive win on an extremely difficult set of courses (Field 490, 486—Hunter 504, 507—Animal 514).

In addition to his consecutive wins at the NFAA National Championship, Don has won the California State Championship in 1962 and 1963 and placed a close third in target competition in the 1963 NAA

Championship at UCLA (Professional Division).

During his pre-tournament training, Don shot a witnessed 800 practice American. He shoots a 44# White Wing 5'9" bow and Easton 24 SRT-X #2013 x 29" Aluminum Arrow Shafts. His arrows are fletched with 3-1/2" helical white feathers and are fitted with 9/32 mid-nocks. He incorporated a level bubble on his sight which proved especially helpful while shooting on the rugged terrain of this year's NFAA.

Don Cavallero—another champion who shoots Easton Aluminum Arrow Shafts—the finest arrow shaft in the world. Write for complete new catalog.



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