



BOW & ARROW

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BOWHUNTING'S GOLDEN TRIANGLE Bob Snelson
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DEPARTMENTS.

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imprint from recent issue.

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> VOL. II, NO. 1 MAY-JUNE 1964

ON THE COVER: Professional archer Jack Sauls uses Ben Pearson bow in instructing his wife, Barbara, in the art of scoring golds. She has become interested in archery and now is a serious competitor. *Photo by Ray Rich*.

BOW & ARROW is published bi-monthly by Gallant Publishing Company, 550-A S. Citrus Ave., Covina, Calif. Business and editorial offices: 550-A S. Citrus Ave., Covina, Calif. Single copy price: 50 cents; subscription rate: \$3 per year. Application to mail at second class postage rates is pending at Covina, Calif., with additional entry at Sparta, Ill. COPYRIGHT 1964 by Gallant Publishing Company. No part of this magazine may be reproduced without permission. Publishers can accept no responsibility for manuscripts or photos and all submissions should include return postage. CHANGE OF ADDRESS: Give six weeks notice. Send both old and new address, and address impoint from recent issue.



MISS ARCHERY Paulette Lollar

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OUR ERROR

I just bought your Jan.-Feb. issue of BOW & ARROW. In your article, Howard Hill: The Legend That Lives, I discovered a slight error in the text.

Bill Walker, the author, said that Howard Hill used a specially designed 117-grain broadhead to kill an elephant. According to the 1962 edition of the Howard Hill archery catalog, Hill used a 1700-grain broadhead.

Howard Hill uses blunts, weighing 140-grains to kill rabbits. He would therefore hardly have used a 23-grain lighter broadhead to go after a rogue elephant.

Allen Jacobs, Folsom, Pennsylvania

(You're absolutely right. This only proves that you can never trust a typesetter, and our proof reader goofed, too. The latter has been sentenced to shooting twenty sets with 1700-grain arrows.)

BACK TO THE FOLD

I have been inactive in archery for several years now but am attempting to get back in the groove. again.

This part of Texas has many garfish in its numerous bayous and canals. Garfish give archers a great deal of sport when shot with a bowfishing rig. The largest I have been able to shoot weighed twenty pounds, but there are many a great deal larger than this. One local man shot one which weighed in at a hundred pounds.

I was glad to see the article by Tommy Bish on the checkering of the grip on a bow. I had this same idea and was going to checker my Ultra bow, when I have completed it. It appears that the bow that Bish has checkered also is an Ultra. This seems a fine solution for the problem posed by one losing his grip on the bow, especially when bowfishing or hunting in the field where snap shooting is the rule.

Frank L. Vance Jr., 430 Avenue C, Port Neches, Texas

BOW & TERROR

Referring to the article, Bow & Terror, in your second issue, indeed, crossbows were used (and most efficiently) against the Japanese in the Pacific in WWII.

I was a trooper in the famed First Cavalry "Hell For Leather" Division. Unfortunately, for the Japanese, we came down out of Australia in '43 to help kick the enemy out of the Philippines. We were the first in Manila; first in Tokyo. The long bow was used for warfare, too, though.

When I went into the Service, I had been an archer for almost five years. I am part Cherokee, but the guy who taught me bowmanship is full blooded. I've seen him kill black birds at fifty yards. Any way, when these crossbow boys moved in, the subject arose as to the difference in crossbow and long bow.

As I have always favored a "free hand" bow, I stated that an archer could place his arrow with a long bow in as close a proximity as could a crossbowman.

I used a bow fashioned by the natives with about a forty-fivepound draw. It was about five feet long and camouflaged with berry juice. Arrows were comparable to those made of Port Orford cedar. also camouflaged. For arrowheads, I used empty .30 caliber cartridge cases, fitted, then filed to razor sharpness.

Believe me, there was nothing that threw fear into the Japanese as much as knowing there was an archer in their midst. A flashing shaft, seemingly out of nowhere, slicing into an officer's throat to disperse a whole company!

I believe that if we had used just one specially trained archer company in Korea, that action would have ceased posthaste!

Al "Cherokee" Etris, Jr., Gainesville, Georgia

GOOD SHOW

Please allow me to compliment you on this fine publication. BOW & ARROW is truly a fine magazine and just the answer to the archers of the world. Your magazine forms a central point for all archers to communicate through and learn what is new in other parts of the world.

Gary N. Mark, Yakima, Washington (No other archery magazine can have that statement made for them!)

PICNIC SHOOT

We have formed a new archery club under the NAA entitled the Association For Practice and Improvement of Target Archery. We have arranged already for three tournaments for juniors in conjunction with the Nassau County Park. We also are making arrangements for indoor shooting facilities where our members will offer gratis instruction to the local boys club.

We are running an adult picnic tournament on May 10, 1964 for which arrangements have been (Continued on page 58)

Terrific Trio . . . from USAC!

Here are three masterpieces of the bowmaker's art, supremely accurate bows reflecting all the care and precision which have gone into their design and manufacture. All three give you velvet smooth draw, unsurpassed strength, comfort and speed.

(A) KENTUCKIAN King of the Hunters

With camouflaged glass built right into the bow, you get added strength, stability and tremendous cast. Precision made of tapered, rock-hard white maple laminations . . . true working recurves actually deflexed, reflexed and recurved beyond 90°. Absolutely no stack due to double tapering.

SPECIFICATIONS

Length—60" Draw—to 31" Weights—to 60 lbs. Sight Window—6" Fist Mele—7" to 8" (Add 10% for weights over 60 lbs.)

(B) CALIFORNIAN Modern Majesty of Archery

Perfect for all shooting specialties, the Californian has a full 90° working recurve which imparts more thrust, even to archers with shorter draws. Double tapers in the limbs (of "Owens Perma-Glass") give jar-free shooting. Turkish design, beautiful zebra wood handle, true-center shot.

SPECIFICATIONS

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(C) NEW YORKER All-Around Target Hunter

Here's power plus pleasure in a high quality bow. It's smooth and stable in any weight, insures your arrows to make their mark. Exotic zebra wood, pistol-grip handle with full center shot, fast cast compressed core for full working recurves.

SPECIFICATIONS

Length—60" Draw—to 30" Weights to 50 lbs. Sight Window—7½" Fist Mele—7" to 8" (Add 10% for weights over 50 lbs.)

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HUNTING WITH Doug Kittredge =

You don't have to worry about 'em biting when you fish with bow and arrow! Here is a guaranteed sure cure for those spring fever blues that will give you loads of outdoor fun as well as sharpening up the old hunting eye for the months ahead.

What fish you legally can shoot depends on the laws of your individual state. If you are not sure, better first check with your local fish and game department. Generally speaking, game fish such as trout and salmon are not legal, while rough fish like carp, gar and shark are. Some states permit fish hunting at night using lights.

Little equipment is needed for bowfishing. The whole works can be bought as a complete set of arrows fitted with barbed fishing head, heavy fish line and a reel for your bow, or you can buy the equipment individually, or make most of it yourself. Complete bowfishing outfits cost in the neighborhood of \$5 to \$7.

Most important is the fish head. A well designed head insures good penetration and the ability to hold on to the fish once caught. A fish head is like a miniature harpoon. It is of durable steel, has a sharp tapered point and is fitted with barbs to sink deep in the body of the fish. A wide vari-



ety of designs are available from which to choose. The decision of the type to use will depend upon the type of fish being hunted and the weight of your bow. If you are using a light bow weight, head types with long thin tapered points will give the best penetration. Heads with barbs which fold into the shank of the head also help penetrate. Big, heavy weight fish such as shark and big gar require a heavy weight, strong head.

Unlike a bullet, which mushrooms and will not penetrate water deeply or with accuracy, a fish arrow acts as a wedge penetrating a good number of feet with fine accuracy. The heavier the arrow the better the water penetration and the deeper into the fish the head will go. For this reason, good weight in the fish head is desirable.

Most fish heads have a parallel hole into which the arrow shaft is fitted snugly, but is not glued to permit removal of a broken shaft easily for immediate replacement. Personally, I prefer a long thin head with double folding barbs and a standard five-sixteenths-inch shaft hole. I shy away from points having too blunt an end and from those with fixed barbs.

Fish arrow shafts are best made of solid fiberglass rod. Shooting is at such close range that spine matching is not important, but the heavy physical weight of solid fiberglass gives great water and fish penetration, while the resistance to breakage gives long life even with the death struggles of big fighting fish. The most popular size is five-sixteenths inch in a length long enough to keep the fish head well in front of the bow.

A fish arrow does not need fletching to fly straight. The fish line trailing from the rear of the arrow will provide all of the guidance needed for this close range shooting. However, you will find the majority of commercially produced fish arrows are fitted with special rubber Lay-Fietch to give them that "arrow look."

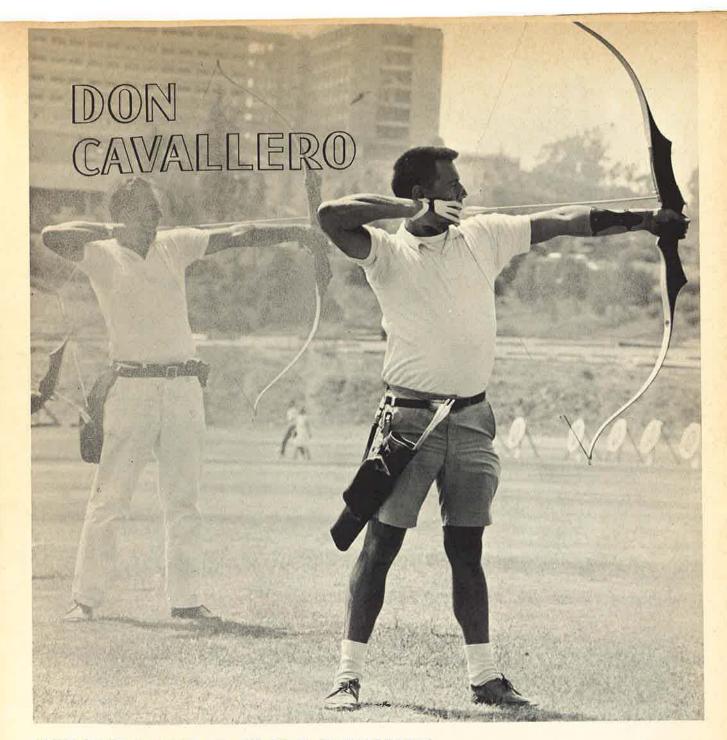
A fish arrow shaft will often have a hole drilled just below the nock. For small fish which cannot break the shaft the line can be fastened here, but with big fish it is good insurance of keeping the fish and not losing the head if the line is fastened direct to the fish head.

The bowfishing reel acts as a storage for the line and a point located directly behind the arrow flight path from which the line can be pulled without deflecting the arrow. The fish is not played from the bowfisherman's reel and most reels have no moving parts. In the old days, the archer made his reel from a coffee can mounted on the bow and this can still be done with good results.

There are two general types of bowfishing reels . . . those with a solid faced spool like the coffee can, and those with an open spool permitting mounting on the bow so the arrow is shot through the hole in the center. Which type to use is personal opinion. Solid spool reels are usually mounted just below the hand grip of the bow and are thus well out of the sighting plane of the archer. Open reels are mounted just in front of the arrow rest with the feeling that the line will more closely follow the path of the arrow.

Unless the bow is to be permanently used for fishing, the reel is simply taped to the bow limbs so it can be removed. Scheib produces a handy reel which has the spool removable with a small thumb screw from the mounting.

The reel will have a line holding clip to prevent the line from uncoiling as the archer bends over to shoot. This is either a piece of slotted rubber or a small spring steel clip into which the line is placed after wrapping on the spool ready for the shot. This is a most important feature and the home craftsman should be sure to include it with his product. (Continued on page 57)



CHAMPIONSHIP PERFORMANCE

Don Cavallero—Champion. For the past two years Don outperformed all competitors to win the NFAA Free Style Championship. Along with this, he has earned the respect and admiration of all that know him.

Don shoots a Wing and like Don, Wing Bows are Champions all the way. Those that know quality and want consistent top performance insist on a Wing Bow. Wing is the choice of champions. Why not make Wing your choice.



TECH

QUESTIONS & ANSWERS

WEIGHT PROBLEM

Could you name me the lightest (in weight) aluminum arrow, lightest fiberglass arrow and the lightest wooden arrow? Also the diameters? I am looking for the lightest arrow made.

Joe Kernel,

Indianapolis, Indiana (One point that was neglected and which has us curious: Why is he looking for the lightest arrow made? This is likely to bother us nights.

(But on to answers: The weight of an arrow, of course, depends to a great extent upon the bow weight for which it is designed and the length of the shaft. The controlling factor is the "spine" or stiffness of the shaft, in order to give resistance to the bending of the arrow as it is shot past the bow. Naturally, the larger the shaft diameter, and the thicker the wall in the case of fiberglass or aluminum tubing, the

greater the stiffness. As the bow weight increases and as the arrow length increases, the spine must also increase.

(The smallest commercially made aluminum arrow shaft is size 1416 which is 14/16ths inch in diameter and has a wall thickness of .016. But it is suitable only for the lightest bows and in arrow lengths to about twenty-two inches.

(The smallest fiberglass arrow is the size "0" made by Microflite. This is approximately one-quarter inch in diameter and again is suitable for only the lightest bows and shortest of arrows.

(In wood a 9/32nd inch diameter is about the smallest commercially available and is difficult to find in most tackle stores. A one-quarter inch shaft used to be available but was difficult to get to shoot.

(Now why do you suppose he wanted this dope?)

SWITCH PROBLEM

I have become cognizant of a definite problem in switching from field point to broadhead arrows. Using a bow sight and the same bow, my broadheads shoot an appreciable distance to the right from my field points of similar weight. By appreciable, I mean approximately two feet at thirty-five yards.

This is particularly noted with Bodkin points. The double blade points such as Bear do the same thing but to a lesser degree.

I have tried to analyze the difficulty, but have not come up with any answer other than that the points, themselves, could cause the variance.

Has this been the experience of other archers, and have you any suggestions as to how my technique or equipment could be at fault.

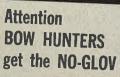
D. E. Predaw. Englewood, Colorado (Your conclusion that broadheads do not shoot exactly the same as the same arrow with a field head is correct. Here are some thoughts to give consideration:

(A broadhead normally will not follow the same right-left flight path as a target arrow which is of shorter overall length, even though both are of the same suitable spine for their arrow weight and bow weight. This is due to the difference in which a broadhead bends and whips when shot. This is caused by the heavier head and the fact that the broadhead extends past the bow, while the target point does not. A target arrow fitted with field point (heavier than target point) but of target arrow length, also follows the above but to a lesser extent.

(This is much further reduced when the field and broadhead arrows are exactly the same in all respects, but for the heads, and these are of the same weight give or take a few grains. Such a situation is achieved when a broadhead is removed and a taper-hole field point installed and is the reason many practice field arrows are of regular broadhead length, fletch, spine, et cetera. The difference in flight is normally not enough to cause trouble for practice, but sighting in a bow using a bow sight should always be done with the regular hunting head in place if you plan to hunt.

(A difference in flight will sometimes come about due to the fact that a broadhead arrow is more sensitive to shooting error than a field point arrow because of the air surface of the broadhead causing more resistance to returning to a flight path when a shooting error causes the arrow to flip. The way to tell this is to shoot a good set of matched broadheads and, if close grouping of your normal accuracy is not achieved, shooting error is often at fault. It also is possible that a set of arrows, broadheads and field points, are a borderline case of correct spine. The field arrows will not show up the slight flipping as the arrow leaves the bow, but the broadheads will with vastly different flight paths.
Usually the difficulty is the shaft being of too weak a spine, as it is difficult to obtain as much stiff wood as the industry needs.

(Continued on page 50)



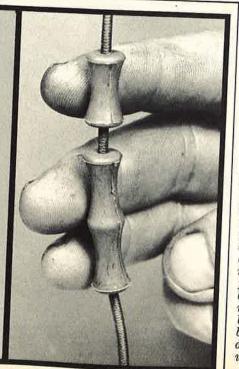
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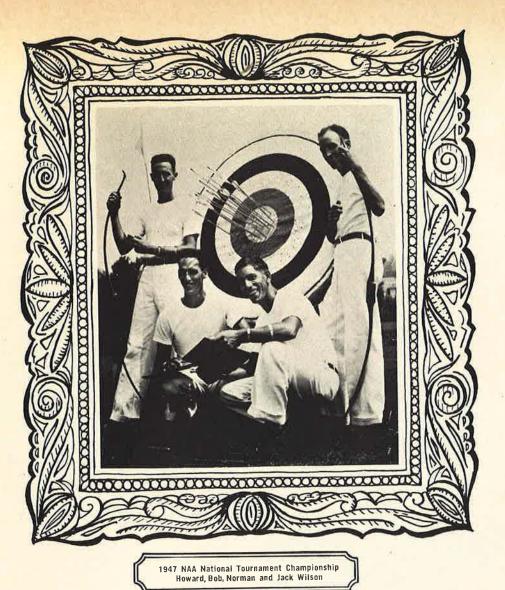
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REMEMBER WHEN...

Remember when Jack Wilson and his brothers won the 1947 NAA National Tournament and National Team Championship in Amherst, Massachusetts? Well, the Wilson Brothers were making outstanding bows of exceptional quality before this. In their younger years the Wilsons recognized the importance of using the finest ingredients in the manufacture of their bows. With their years of experience the Wilson Brothers insist on using BO-TUFF. The results have produced a shooting instrument that is the "champion's" champion. To achieve superior bow performance in their Black Widow bows, the back and face surfaces are of exactingly fabricated Gordon Glass. Unsurpassed in strength, BO-TUFF will provide the durability, speed and remarkable consistency every archer desires. When you select a bow glassed with BO-TUFF, you get something extra. The tournament champion, the discriminating archer and the man who simply enjoys something better all choose a Black Widow bow, backed and faced with Gordon glass.



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TACKLE TIPS

Tom JENNINGS

WHEN THE NEW ARCHER WALKS INTO MY SHOP, this question invariably comes up within the first five minutes of conversation. Only a few years ago, in the days of self bows, this question was a cinch. All you did was ask the fellow how tall he was and there was your answer. The old rule of thumb was never shoot a bow shorter than you.

Bows were made out of wood which had a low tensile strength and the limbs could not be bent in nearly as sharp a radius as is possible with the new fiberglass faced and backed laminated bows. The length of the bow is no longer a factor in the height of the archer or his draw length. All you have to do is witness the ready market for bows from three feet six inches to seventy inches. In most cases, the manufacturers of the very short bow do not even put a limit on the draw. As far as they are concerned, you can pull thirty-six inches if you want to.

Of course there should be some consideration for the stature of the archer, because it would be ridiculous for a six foot six archer to shoot a three foot six bow. However, archers in the average category of height from five six to either breakage or durability. There are many other factors to be considered.

There is little dissension among the target and target field shooters as to the length of bow that should be shot. Ninety percent of your target and target field shooters will shoot a bow in excess of sixty-six inches in length.

SMOOTHNESS OF DRAW. A bow that is smooth on the draw is one that has an even buildup from string height to your draw length. A bow that draws smooth (forty pound bow) will have the weight distributed quite equally from the very beginning of the draw to the end and will not stack. Stack is when the bow gains the predominant amount of weight in the last few inches of draw. This is particularly offensive to the target shooter because he realizes that if there is any variation in his draw length, he will get vertical misses. The bow with the least amount of buildup at the end of the draw will gain you points on the score card.

WIDER STRING ANGLE. The target archer likes the long bow because of the wider string angle at full draw. This is more comfortable on the fingers. Also, it facilitates a smoother release. Your fingers do not get as sore and you could shoot a three or four day tournament in comfort.

is more stable. The word "stable" is an all-inclusive word that takes in the overall performance of a bow. It is quite hard to define. The old term of a bow being "forgiving" fits in this stability class. Everybody has had a bow sometime in his career that he felt he could get away with worse releases and still shoot a respectable score.

Stability and forgiving bows are rather intangible things but, nevertheless, they are with us and must be considered. The target shooter claims that the long bow is much more stable than the short bow.

NOW WHERE DOES THE SHORT BOW FIT? The very fact that there are many, many thousands of bows less than sixty-six inches sold in the United States indicates there must be something for the short bow. There is little doubt

(Continued on page 40)

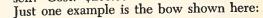




Design . . . craftsmanship . . . quality . . . durability and beauty: all characteristics of the many archery accessories manufactured by Darton, and now continued in our newest products, a complete line of bows!

The Imperial. The Imperial is a limited production model that features refinements you would expect to find only in a custom bow. Grasp the full, flat grip with adjoining thumb rest. Feel the customized checkering. Aim through the unique Darton inlaid sight. Run your fingers over the Brazilian rosewood and white glass. You'll immediately know that the Imperial is the

bow for professionals and discriminating amateurs. It'll be difficult, but when you're through looking at the Imperial, place it in its matching leader, full-zipper case. The price? Well, it'll cost more than other bows made today. But then, it's worth it. The Imperial is in a class by itself! Cost? \$200.00





The Darton line of fine bows also features 6 other models ranging in price from \$19.95 to \$115.00. Write for catalog or name of nearest dealer.



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212 W. Colorado, Pasadena, California

SUCAR SHOOT

IN VEGAS

Here's One Way To Get Paid For The Memorial Day Weekend!



This year's Las Vegas Money Shoot is expected to equal that of Sahara-Colt National Open Indoor Tourney, which drew some 600 archers from 32 states. Winners in that outing were Matt Yurick (left) of Woodland Hills,

Calif., and Lon Stanton of Lake Ozark, Mo., who won \$700 each, and Lou Shine (right) and Theressa Carter, both Californians, who won \$500 each. Some of these same winners again will be shooting for sugar.

THERE are few opportunities that one has to take money out of Las Vegas, but such a chance is on the docket for the coming Memorial Day weekend, May 30-31.

The Loot Shoot for those in the professional class as well as amateur matches for the less money mad has

professional class as well as amateur matches for the less money mad, has been set up between Archery, Incorporated and the new Castaways Hotel on the Las Vegas Strip.

The tournament will be held on a thirteen-acre parcel adjoining the hotel. A PAA Round will be featured with only twenty fargets shot on

with only twenty targets shot on Saturday and twenty more on Sunday, with trophies and medals being awarded to top shooters in different classes

classes.

Immediately following the Sunday competition, a special "short round" pro-money shoot will be held for those interested in making their expenses plus. The money, according to Red Slack, president of Archery, Incorporated, already has been banked and winners will be paid at the end of the shoot and as soon as scoring is completed. First prize will be \$200 with money being paid through twentieth place.

CALLING CONTEST SET

The 1964 National Varmint Calling Contest has been scheduled for Me. morial Day weekend in Las Vegas,

Handling the contest details for the national organization will be the California State Varmint Callers As-California State Varmint Callers Association. According to CSVCA officials, several class divisions are planned to afford all callers and opportunity to compete with individuals of equal skill. Awards are planned for each division ned for each division.

Manufacturer displays, how-to-do-it movies, calling exhibitions and demonstrations are also part of the weekend schedule.

For archers, the Castaways is making up a special weekend package of \$30 per person which will include all meals and beverages, two

be \$20 per person, less from the other points. Planes will return to the California cities late Sunday

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The Great New 1964 Line from HOWATT

The 1964 Catalina characterizes the newly designed family of fine bows from HOWATT—world's largest producer of true custom bows. There's a definite hint of the classic lines of the renowned Del Rey. The same subtle curves and overall richness that won the Del Rey the acclaim of archers everywhere. And each new 1964 design has been carefully engineered and tested to meet the traditionally strict performance standards for which HOWATT bows are known. Beauty, performance, value—that's the great new 1964 line from HOWATT.



Archery Manufacturing, Inc. ROUTE 8, YAKIMA, WASHINGTON



NEW 1964

catalina

66" and 69"

\$85.00

Send for FREE FULL COLOR BROCHURE

clude all meals and beverages, two nights lodging with two persons to a room, a floor show, special cocktail party for presentation of awards and a late checkout hour. Plans also are being made for those who want to rough it. A camping area will be prepared with up-to-date facilities adjoining the hotel.

Chartered airliners will fly round trip between Las Vegas and the California cities of San Francisco, Fresno and Los Angeles. The planes will depart about 9 p.m. on Friday night, arriving in time for the late shows. Round trip from San Francisco will be \$20 per person, less from the other points. Planes will other points.

night.

For further information and preregistration blanks contact Archery, Incorporated at 731½ North La Brea Avenue, Hollywood 38, California.

BY JET. YOU CAN HUNT AXIS DEER IN HAWAII, BLACK BEAR IN ALASKA IN THE SAME DAY! On photographic assignment for Pan America World Airways, my guide, Ed Builderback of Cordova, and I were hunting black bear in Alask from Hawaii to Seattle, Washington on the West pound Bear hunting bow, we stalked the tidal flats of prince William Sound. Ahead we could see the broke from the biggest black bear I had ever seen. Ed an era set! Here we go!" Ed dropped into a clear position. ready to film the action.

I felt naked as I stepped out from the covering of the thick tidal grass to the open gravel bar. The big of spawning salmon Quartering away for spawning salmon quartering salmon quartering away for spawning salmon quartering sal of spawning salmon. Quartering away from me with a fish in his mouth, the bear stopped and lay the fish down to eat. As he stopped, I inched forward to within fifteen yards of his great bulk. Taking a solid stance I began my draw. The fiber glass arrow tipped with four bladed razor sharp head came back on the bow string ready to fly.

But I'm getting ahead of myself. Let's go back to the Hawaiian Islands where this story really begins. As incredible as it may seem, a big game hunt can begin in Hawaii stalking an exotic axis deer at day-break and end several hours later in Alaska chasing a

era set! Here we go!" Ed dropped into a clear position rendezvous in Anchorage, Alaska. Now we gain back ready to film the action. those precious hours lost because of time difference

In Anchorage, a bush pilot can have you looking across the bowstring at any number of big game in

I like to call this race with the sun the Golden Triangle. It's the greatest hunting package on the globe today. Whether you hunt with the bow and arrow or the rifle, the Golden Triangle can be flown both ways. Hawaii first, then Alaska. Or the Land of the Midnight Sun for the big ones you always dreamed of bagging, and then on to Polynesia and the ever exotic game of this great hunting country.

Hawaii today is a hunter's paradise. If you shoot with the one string ukulele as I do, the season never closes. At any time of the year you can hunt wild

boar, axis deer, feral sheep and goats on as many islands in this great archipelago.

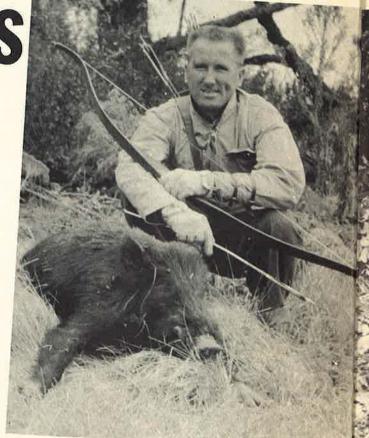
If your wife doesn't hunt, bring her along. She can relax on the beach at Waikiki waiting for you to fill your tags. Expensive? How does ten dollars for a license sound with no trophy fees or tag costs? There are ranches in Texas where an axis deer hunt comes at \$500 an animal with plenty of takers.

You don't need a guide in Hawaii, but some areas are closed to non-guided parties. Guide fees are extremely reasonable and the white hunters of Hawaii tremely reasonable and the white hunters of Hawaii are a real help if your time is limited, as they can lead you to the best game areas quickly and without a lot of lost footwork. They have available jeep transportation which is a must. If you prefer hunting without a guide, jeeps are available at reasonable rental fees on all the islands. When you arrive in Hawaii, your Pan American World Airways jet will set you down in Honolulu on the island of Oahu. If you are traveling alone or as a hunting party, you can pick any one of the several islands to fly to. If your nonany one of the several islands to fly to. If your non-hunting family is along there are dozens of inexpensive first class hotels in Waikiki where they may while away the time at comparable mainland resort prices.

Climb aboard one of Hawaiian Airline's Convair flights to any one of the game abundant islands. If you

Bowhunting's GOLDEN TRIANGLE

By Bob Snelson



HAWAIIAN BOAR: The author shot this 150-pound porker as it was charging. Scene was Hawaii's Mauna Kea at the 8,000-foot level. This season is open throughout year.

ALASKAN BLACK BEAR: (at right), also was shot by Snelson as part of multiple hunt between Hawaii and Alaska.





would like to try for a big wild boar, with a feral goat or sheep as a second entree, take the Hawaiian Airline flight to the Big Island — the island of Hawaii. Here you can hunt out of the clean comfortable cabins at the Pohakuloa Hunting Lodge on the slope of 13,784 foot Mount Mauna Kea. These cabins maintained by the forestry service are right in the thick of this game abundant area. You will have plenty of string plucking before the day is through.

If this all sounds too easy, don't get me wrong. I have left boot leather through Colorado, Canada, Alas-



ka,, Arizona, and plenty of other places as rough to hunt over and Hawaii is just as tough. The lava slopes of Mauna Kea will make hash out of a pair of new boots in a week. The air up at the 12,000 foot level on this mountain is just as thin as any in the high spots of Canada or Colorado. Easy game? No easier than elk hunting in Colorado or chasing a caribou over the tundra in Alaska.

My first Hawaiian bow hunt started with a big 150-pound boar charging me out of a shallow cave at the end of a dry ravine, and ended the next day by my getting altitude sick at the 12,000 foot level. I dropped a big full curl ram with a lucky well aimed arrow that day at seventy-five yards. The big boar liked to have made an old man of me in a few seconds, but now both he and the ram look real good on my den wall in Honolulu. Expensive? The whole hunt from Honolulu to Hawaii and back cost less than \$100.

Perhaps you would rather match wits with the spookiest deer of them all — the axis deer. These graceful animals are considered by experts to be the most beautiful deer in the world. A round horned deer, their racks are more like the wapiti of Canada than the mule or white tail deer.

The axis deer are just as lightning fast as any western mulie and just as spooky as the smartest eastern white tail. This deer never loses its fawn spots and to see a two-houndred pound red backed buck sporting six points on each side is enough to give any hunter the knee shakes.

The axis deer were introduced to the Hawaiian Islands by King Kamehameha over a hundred years ago and have thrived and flourished on the existing vegetation.

egetation.

If axis deer is your wish, then take a short twenty-

An idea of the type of hunting that can be achieved by the accomplished bowhunter is illustrated by these Axis deer, which were downed by a party on isle of Molokai. Left: Ken Kohata, a native Hawaiian hunter, poses with Mauna Kea ram; rack measures over 32 inches. (Below) The author's den displays trophies he has taken with bow in Hawaii, in Alaska and on the Mainland. (Right) Boar hunting is extremely good within only minutes of Snelson's home.





minute hop to the island of Molokai where you can have seconds on feral goats and wild boar. If you like to mix bird hunting with your big game hunting then axis deer on the island of Lanai and the greatest pheasant hunting anywhere can be yours.

The newly introduced mouflon sheep from the cliffs around the Mediterranean Sea and the antelope recently released from Montana both are doing well on the island of Lanai. It won't be long before these two exotic animals wil be jumping the bow string of many an enthusiastic hunter although there have been no seasons set to date.

Black-tailed deer from Oregon have been introduced on the island of Kauai where wild boar and goat hunting already is excellent. These newcomers are reported doing nicely in their new home and soon will be numerous enough for limited hunting.

Having captured most of the huntable game abounding in the Hawaiian Islands on film and with bow and arrow one end of the Golden Triangle was completed. Now to see what my one stringed ukulele could do matched against the big blackies of Alaska.

After a brief comfortable flight we landed in Seat-

After a brief comfortable flight we landed in Seattle. Before I could start to brag about Hawaii to the good friends there to meet me, I was back into my seat and half way to Anchorage via 707 jet where my guide, Ed Builderback, was to meet the plane.

The guide laws in Alaska are in a state of flux. As of this season, a guide is needed, whether bow or rifle hunter, only if you want to hunt bear or sheep. Moose and caribou may be hunted without a guide. I have hunted in Alaska and insist that a hunter never should hunt this vast area alone unless he is a seasoned sourdough. If two hunters are planning a trip together and can make good bush pilot connections in the interior or along the coastal regions, a reasonable hunt can be made.

Be prepared to spend about fifty dollars a day if you go on a non-guided hunt. If a guide is your pleasure there are many good ones and a guide should be contacted far in advance of the hunting season. Some

of the well known outfitters are booked a year in advance. If you travel by bush pilot or a non-guided hunt, be prepared to travel light or it will be cheaper to leave your gear out on the tundra than to pay the expense of ferrying it out.

My guide, Ed Builderback, and I on this twenty-one day hunt in Alaska were within easy rifle range of a record class Dall sheep, carabou, moose, mountain goat, black bear and not over two-hundred yards from a large grizzly and wolverine in the open. Not to mention two nice big brownies.

The frustrating part of the whole fat truth is that we were after all of these animals with bow and arrow

To get into interesting hunting country in Alaska, it is necessary either to use a fishing boat such as the one here, which is inexpensive, or resort to a bush plane.



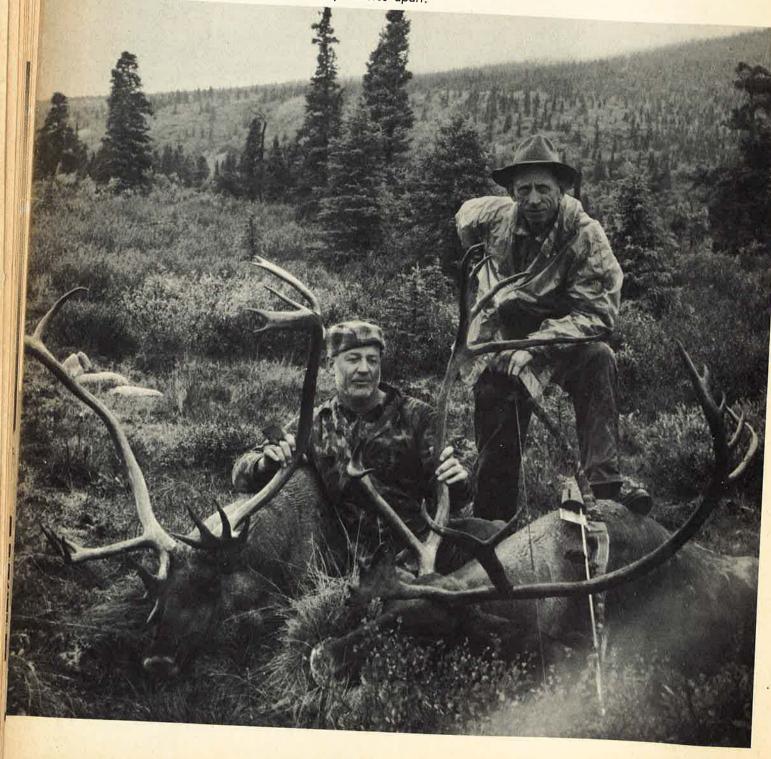
I have been stared down at from a distance of forty yards by seventy-inch bull moose that would make a rifle hunter shout for joy. Have you ever seen the target afforded a bow hunter by a big bull moose facing straight toward him at forty yards? I can tell you that bull is all horn, nose and legs and none of these are a decent bow shot.

Old hands at Alaskan bowhunting are Dr. Judd Grindell (left) of Wisconsin and Fred Bear, who downed these two record class caribou in north wilds only minutes apart. While crawling on hands and knees, I was snorted at from six paces by a large black bear in the open. A bear any rifle hunter would have given his eye tooth for. However, you can't shoot a black bear or anything else when you are faced directly at it on hands and knees because in this position you can't draw your bow to shoot.

Carabou literally scoffed at me while circling my

Carabou literally scoffed at me while circling my position with their huge racks flashing in the sun at ninety yards distance. Too far to shoot and too open

We converged on all of this four-legged pulchritude
(Continued on page 34)

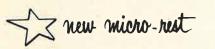


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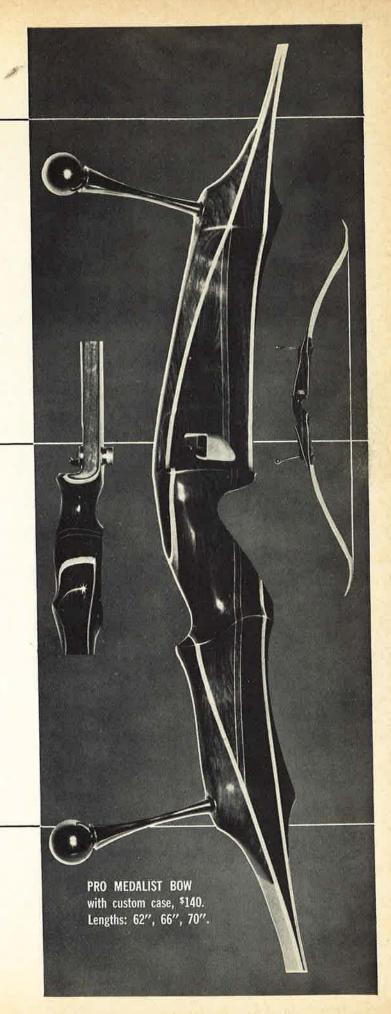
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BY BOB & RAE OETTING

PROFILE OF A CHAMP VICKI COOK: EXPERIMENT WITH

COURAGE

ROM May, 1959, to July, 1963, was a period fraught with discouragement, sickness and real tests of faith for Mrs. Victoria Cook. From her home in Crystal Village, a suburb of Minneapolis, to the football field outside the Olympic Stadium in Helsinki, Finland, where she won the title of Women's World Champion archer in July, 1963, was a distance that covered more than miles. It covered a courage, faith and determination that lifted Vicki from one low point after another in her fight with ill health.

Her battle began when she had polio at the age of

Her battle began when she had polio at the age of eleven. "All I can remember seeing," says Vicki, moving her expressive hands nervously, "was the rounded dome of the Armory across from the General Hospital." She looked at this dome for seven months. Then she was sent home in a wheelchair.

At home she and her older brother (who also had polio but a more severe case) played games with their wheelchairs. At that time there were two theories about treating rolling assess one was complete immobility and the

chairs. At that time there were two theories about treating polio cases; one was complete immobility and the other the very new and radically different treatment advocated by Sister Kenny.

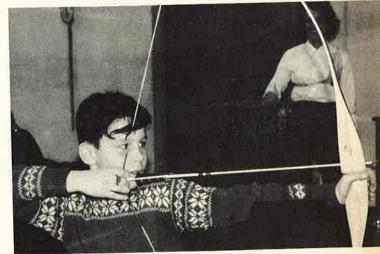
Vicki's mother believed the children should be as quiet as possible but the children thought otherwise. She says, "We gave our poor mother a terrible time. Whenever we could we would close the dining room door and help each other to walk the length of the buffet by hanging on. Then mother would catch us and worry herself into a state of nervous exhaustion fearing we had harmed ourselves."

worry herself into a state of nervous exhaustion fearing we had harmed ourselves."

In one of her regular return trips to the hospital for treatment she met the wonderful kind lady who changed her life. She met Sister Kenny and began her treatment which slowly brought life and strength back into her paralyzed legs. Between that date and this date she has undergone surgery eight times but it has not dampened her cheerful spirit.

Because her husband, Edward, felt she should be outside more for her health, he and their two children, presented her on Mother's Day, 1959, with her first bow. She practiced fitfully a few times that summer and that fall marched confidently into the northwoods of Minnesota on the booted heels of her husband to take up her position on a deer stand at the opening of the her position on a deer stand at the opening of the bow season.





Mrs. Cook's eleven-year-old son, Allen, is developing true family form. His mother feels that within a few years under her tutelage he can be a champion archer.

Some of the sacrifice that went into winning a world title and the accompanying honors and decorations is reflected in Vicki Cook's winsome smile.



Above: After Mrs. Cook shot in Oslo in 1961 for the U.S. team, placing seventh, she went to Al Muller, the coach pictured with her, for help.

Mrs. Cook combines hunting with target archery and her first deer was this 209-pound four point buck.



She soon realized how ill-prepared she was with bow and arrow. In the first place, today's world champ couldn't shoot the pesky thing and secondly, she admitted that she knew little about safety, a topic she now considers as desirable and necessary as the mechanics of shooting.

"It was then," she recalls, "that I decided I'd learn to shoot properly, If I could lick polio, I surely could lick a little old bow and arrow."

She marched home deerless and straight into her back yard where she practiced smacking arrows into a target. She admits they didn't all hit the mat.

The following fall she took her deer stand with less confidence but considerable more 'know-how.' The result was a beautiful eight-point buck. She dressed the critter out herself, all 209 pounds of him, which was no mean task for a beginner. The mounted head now adorns her display room where the buck's large brown eyes seem to look with slight envy upon the four-quart silver traveling trophy for the world champion archer which sits across the room on a table surrounded by lesser archery trophies that Vicki has won in her four years of shooting.

Perched on the polished antlers of Vicki's mounted

Vicki Cook displays the form that won her the world title in Helsinki, Finland's championships in July, 1963.



deer are four aluminum arrows, which also tell a story of her courage and determination. The first arrow killed her first deer; the second is from a matched set that won her first place in the National tourna-ment in 1961 at Miami, Ohio; the third is from a similar set that found her in third place in the tryouts for her 1961 spot on the Oslo team, and the fourth, a cherished shaft from the last gold at Helsinki.

On her trip to Oslo in 1961, when she came in seventh because she was "almost too ill to stand," she came home discouraged but not beaten. She went to Al Muller, a champ in his own right, and asked for help . . . not just help to make her good but help to make her the best woman archer in the world. That was a big order for a frail housewife but behind that order were years of fighting and overcoming almost impossible obstacles.

These two archers, teacher and pupil, discussed the 'why's of shooting, equipment and practice. Vicki didn't want to know what her score was, she wanted to know why. Just as she was becoming consistently good, surgery forced her to hang up her bow again. That was Christmas, 1961. She did not take it up again until January, 1963, a long time to be without practice.

But she was determined to get back in shape. She shot every day. Some days she shot six ends (thirtysix arrows) if things went well; other days ten or twelve arrows, trying to place every single point.

When the family vacation came up, her husband and children took their fishing poles and water skiis, she took her bow and mat. While they sought amusement, she sought the answers to where the arrows landed. While they flickered spinning outfits with 6# test lines, she pulled a 29# Black Widow bow. While they fought fish, she fought an arm-creep.

It all paid off for Vicki but not without another of

those tests of courage with which she was so well acquainted. At the elimination tryouts of the U.S. team at Oak Brook, Illinois, in June, 1963, Vicki came in fourth for women, ending with a 1045/1053 for 2098. This eliminated her from the expense paid trip as the U.S. FITA Fund pays the expenses of three men and three women plus the team captain. Likewise her coach, Al Muller, won fourth place in the men's division. So here were two archers, eligible to go to Helsinki but not eligible to participate in the expensepaid part of the deal. Al financed his own way while an anonymous donor from St. Paul sent \$1000 to the gal with the courage.

His money was well invested. Vicki went to Helsinki and brought home a trophy that says Women's World Champion Archer. But Mrs. Victoria Cook is emphatic in saying that it does not belong to her alone but to the many people who have devoted time, money and faith in her ability to hit the gold. As she unconsciously fingers the mustard seed and cross she wears on a gold chain around her neck, faith seems an integral part of her life.

Sometimes even the old deer who watches from his spot on the wall, has to admire her courage and perseverance.

For competition Mrs. Cook favors the Black Widow with a twenty-nine pound draw, but for deer hunting, she prefers the same model with an increased weight of forty-one pounds.

Her major wins have been made using Easton #1616 arrows in twenty-seven-inch lengths, while the length of her draw is a quarter-inch short of this.

As for bow weight, she has used the same weight continuously in competition, although in her neophyte period, she started with a bow weight of thirty-six pounds.

For those who wonder about the anchor point of a champion, she uses the conventional under-the-chin and top-of-the-nose point. •





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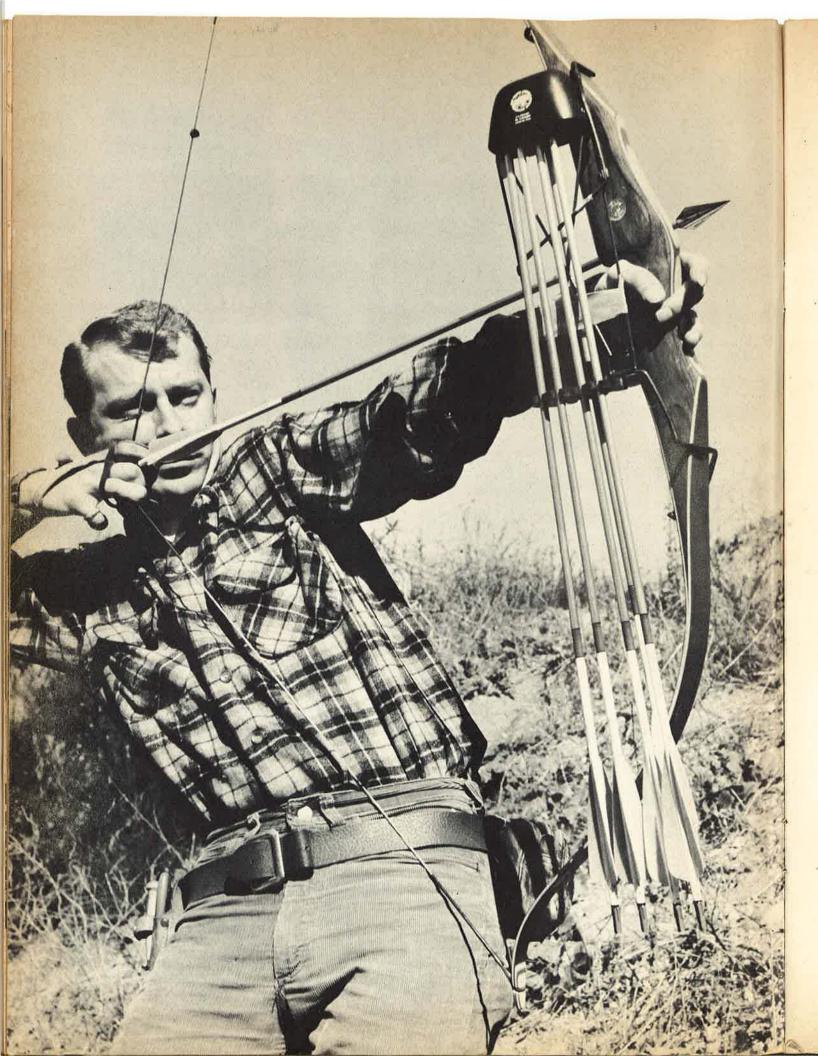
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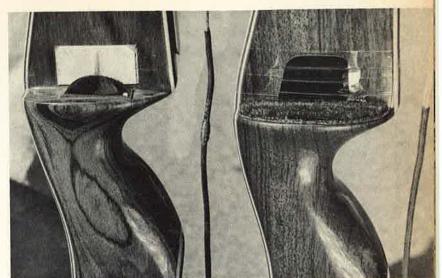






THE '64 BEAR KODIAK

THIS NEW MODEL
HELD UP WELL
IN MOUNTAINS AND CACTUS,
PROVING ITSELF
WITH KILLING SHOTS
By Jim Dougherty



Author attached feather rest to his test bow to help personal shooting problem. The Bearhair rest (right) is stock item, but he feels it lacks cushioning effect of feather rest.

To field test any product, one first must have a suitable area to put said product through its paces. In the fabulous bowhunting area of Southern California's Catalina Island, I had such a proving ground.

land, I had such a proving ground.

When Bow & Arrow suggested I put the 1964 Kodiak to the test—well, who would argue with a request like that? A fast call to Fred Kindel, Santa Catalina game manager, was all that was required to put "Operation Kodiak" into high gear. Fred has become an avid bowhunter since we began the Catalina Bowhunting Program in early 1963. Prior to that time, the island had been off-limits to hunters. In the short year since he allowed himself to be bitten by the bowhunting bug, Fred has become a proficient exponent of the sport.

onent of the sport.

"Bring your toy over. I think we can find a few suitable targets. Lots of boar around." These were sufficient words to charge my adrenalin system and to book the first flight on Catalina Channel Airlines the following morning.

following morning.

There is little doubt that the Bear Kodiak has taken more big and small game than any other bow in the world. For this reason, it may

Author found the bow easily handled, quite maneuverable, even while sitting. He found no jar or shock with loose grip in spite of the light weight. Right: Reflection of a good day of hunting is packing out this porker.

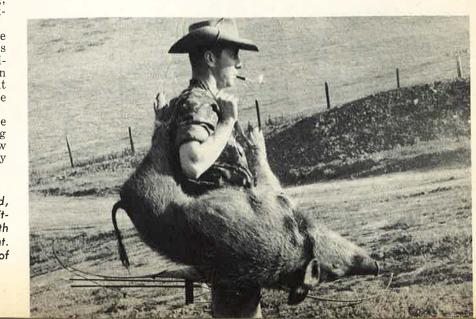
well be considered the leading hunting bow in the country and there's no question that the man for whom it is named is truly the master bowhunter. Having a weapon with such reputation in hand certainly instills confidence.

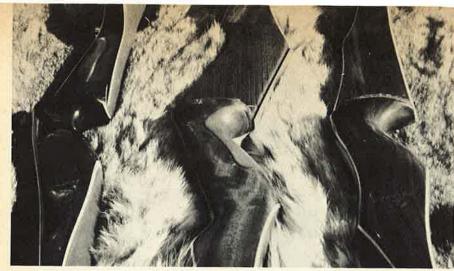
The bow that I removed from the shipping box was one to interest any bowhunter. Once again she had the trim lines of a hunter, more similar to the '62 model than the bulkier '63. This is a trend that to me personally is all to the good. In the first moments of handling and hefting, of imaginary sightings on record heads, several features became

apparent. Most obvious, the overall physical weight. It is lighter than the '63 and the handle is a bit smaller or perhaps better shaped; easily fitted to a wider assortment of hands.

The handle riser material is of beautifully grained bubinga, a reddish hardwood of luxurious texture and grain. This is stylishly offset by the grey glass termed "bark grey" by her creators. This is the glass of the Bear Company itself and it has proven out very well in the '63 line. From the standpoint of looks, she's got'em.

In comparing the '63 against the





For comparison sake, from left are the '62, '63, '64 Kodiak models. In last, the handle design is smoother, less bulky than in '63. Overall weight is less.

'64 model by hefting each with an eight-arrow bow quiver snapped on loaded with goat and boar ammo, the lighter weight was more than pleasing. In the past, it had become quite a load at the end of a long hard day.

The handle design has been changed to afford better torque stabilization. The weight of the handle has been placed forward of the pivot axis of the grip. Also, slightly longer reflexed limbs with a full working

and more stable recurve are aimed at providing greater durability and greater impact with a hunting arrow. This would account for the increased smoothness of draw, quite noticeable when compared to a predecessor of the same weight. Pulling 29½ inches to the back of the head can be a grind on many bows, regardless of length. I found the sixtyinch Kodiak to be as smooth to anchor as many target bows of six

inches or more in length. I must admit also that with a full and active season behind me with a '63 Kodiak, there was little comparison between the two in this regard.

The Bearhair rest has its greatest advantage in foul weather, but I removed it and replaced it with a feather rest. The greater cushion effect of the feather serves as an equalizer to my release, an operation that — when viewed by polite witnesses — is termed "sloppy." I also replaced the leather arrow plate with one of teflon material. I get little noise from arrow slap and the slick teflon reduces friction and technically would tend to increase speed.

Compared to most of the short hunters, the *Kodiak* always has been a quiet bow. String noise however has been a personal bug and I attach silencers to all my strings. I attached a set of National Silencers and adjusted them to the quietest portion of the string.

All that remained prior to the morning's departure was a nocking point and a few shots — all that time would allow — on the bales.

Ron Holdstock, my hunting partner and business associate, was feverishly putting together some ar-

This Spanish goat had horns measuring nearly 30 inches, should place high in Calif. bowhunting records.

rows that would "fly" out of the *Kodiak*. All of our equipment was geared for bows from 50-55 pounds. My trial weapon was 45 pounds at twenty-eight inches, which at my increased draw length of 29 inches plus, would raise her skosh over forty-seven pounds.

Presumably the arrows for the heavier tackle would suffice, but I wanted something a bit more exact. I was not as concerned with the difference in spine out of the center shot bow, as with the possibility that the physical weight of the arrows could possibly throw me off. Ron came through with some stiff fivesixteenths of an inch woods to which he attached Bod-Kin broadheads for a total weight of 450 grains; they would do albeit a little light. Ron advised that by placing my arrows between the ribs of the animal I would have no problem . . . oooh,

reeally! Nocking point installed we adjourned to the bales for a brief trial of the combination. The greatest distance that I could shoot before actual combat, so to speak, was thirty yards. At this distance, I had slight trouble getting the arrows down on target. My opinion, at this point, was that the bow was about five yards faster than I had reckoned on. Although I shoot barebow, I placed a horizontal line on the facing of the sight window and used it as a brief reference point for a series of shots. By using this method, I was able to adapt to the bow in pretty good time. (A later test with a fifty-pound and my normal arrows proved out with about eight yards greater point on distance over the '63.)

As the Grumann Goose lowered her flaps for a landing in the serene waters of Cat Harbor a phrase from the Bear Catalog came to mind, "Severely classic in form, the Bear Kodiak has proven its power and accuracy where it counts — against tiger, bear, lion and even elephant." Classic in form or otherwise, the Kodiak was about to pit its power and accuracy against a big boar or spiral horned Spanish goat.

Although not a native North American game animal, the goats of Catalina are rugged and worthy adversaries. This is especially true of the big billies whose horns will reach a spread occasionally of over thirty inches. A male goat of eighteen inches or better is considered trophy type. I hoped to put the clincher on one in the former category with my new playmate. The wild boar needs no introduction; a worthy game animal, and capable of defending himself with a fierce charge if so inclined.

A short while after Fred greeted me at the plane, we were in the Travelall, heading for a little spot he had in mind for boar. "We'll make a short hunt for a goat or so and then take a stand overlooking a boar bed I've located," he explained, as he braked the wagon to a stop under a canopy of oaks.

It's seldom long before one gets action on Catalina. In this case about an hour had elapsed and I had closed to within twenty yards of a herd of trophy size billies. The wind was right and the goat I wanted was about to present himself to me in a neat broadside when the unexpected became reality.

A large boar appeared below the goats obviously intent on other parts. He was crossing below me about forty-five yards away, eating up the ground in a stiff trot. I forgot the goats and stepped out in full view of them for a shot downhill, shots at pigs are hard to come by, goats, schmoats, they would keep

As in all hunting shots, the ones

that work seem to be automatic: Draw, anchor, aim and shoot. The lead was right and the pig and white fletching met in the vicinity of his last rib!

The boar gave vent to an enraged squeal that ended in a grunt of surprise. He half turned uphill and shook his head. For a moment I thought he was going to charge then he turned downhill. Boar don't bleed well, and I followed him at a fast lope down the hill, wanting to keep him in sight. Aware of the pursuit, he turned and shook his head, thus allowing me a straight on shot at his left frontal area. As he took a short step forward I rapped him soundly with a second shaft. He stopped, staggered and went down hard. It was over.

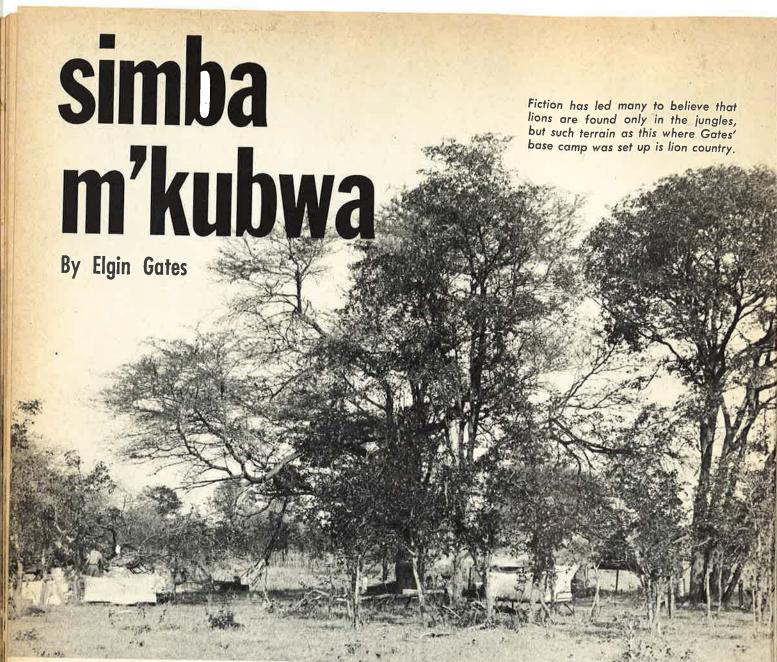
I was tickled pink. Although not a tusker — his teeth didn't show outside the lips — he was a dandy piece of barbeque material. I had a thought then that this was a heck (Continued on page 41)



Above: Caped horns and meat are loaded aboard Grumman Goose for return to Mainland after tests.

A residual benefit of any such hunt is the feast that can be derived from boar meat — in this case, ala Kodiak.







Stalking An African
Hunting Lion With A Mere
Crossbow Can Be Rewarding,
If You Like Hides
Besides Your Own!

T came again. The awesome, spine-tingling roar of a full grown African hunting lion. If there is one sound in the world that acts as a catalyst to start my emotions churning, this is it.

emotions churning, this is it.

My usual reaction is one of adrenalin-pumping anticipation. But this time a new element was added: Fear!

Not the dry-mouthed paralyzing fear, but the sweaty-arm-pits, butterflies-in-the-stomach-kind of fear. It was

induced by the fact that I was going after this particular lion with a crossbow rather than a high-powered rifle.

Lions usually will roar several times at daybreak just as they are settling down for the day. I had heard the first roar about twenty minutes before, just as the first light streaks of morning appeared in the sky. Nzumi, our African gun bearer, stuck his head in to my tent just as I finished lacing my boots.

just as I finished lacing my boots.

"Bwana," he said, "simba m'kubwa ngruma." The big lion is growling.

"Simba eko ya nyama?" I asked. Is the lion on the bait?

"Ndio, Bwana, ya nyama," he said. Yes, he is on the bait.

Six days before, I had shot a fine greater kudu with the crossbow and we had hung the carcass in a tree on the edge of the forest as lion bait. Every morning we checked the carcass hoping to find a lion on it, but so far, there was only the usual gang of scavengers hanging around; my old friend Fisi, the hyena, jackals, and a cluster of big, ugly vultures hunched in the trees. The carcass had been hung by the hind legs so that the front part of the body was about four feet off the

ground. The hyenas and jackals couldn't get at it but a lion could easily rear up and take what he wanted.

On the fifth morning, about one third of the carcass had been devoured. I looked closely and found a few long, dark hairs caught in the bark of the tree. They were from a lion's mane. Under the tree we found his tracks and those of a lioness. Without disturbing the area, we quickly left

tracks and those of a lioness. Without disturbing the area, we quickly left.

Back at the land-rover, we worked out a plan. One third of a kudu carcass could hardly fill the belly of one hungry lion, let alone two. The odds were that they would be back during the night to eat some more, so we decided to be in position to stalk at the first light of morning. Lions usually will stay on a kill until the sun comes up, then they will go find a patch of thick brush nearby to lay up for the day.

The African lion is called the King of Beasts with good reason. He is a lightweight alongside such animals as the buffalo, rhino, and elephant, but if wound-

The African lion is called the King of Beasts with good reason. He is a lightweight alongside such animals as the buffalo, rhino, and elephant, but if wounded, he shows no fear and can hide in a place where a rabbit would have trouble concealing himself. Whether gaunt with hunger or with his belly almost dragging the ground from eating seventy-five pounds of meat at one sitting, he still can cover the ground with incredible

speed. His powerful forearms that can break a buffalo's neck with one wrench, can smash every bone in a man's chest with one slap. The jaws that can disjoint the same buffalo carcass can bite through a man's skull like an egg shell. If that isn't enough, his curved talons can slice his victim to bloody ribbons or disembowel a man with one stroke.

Last year, two American big game hunters were killed by lions they followed into the brush after wounding them. One well known white hunter was crippled for life and others have been savagely mauled, their lives being saved only because someone on the scene had enough courage to stick a rifle in the lion's ear and blow his brains out as he crouched over his victim.

white hunters as a whole would rather follow any other wounded animal into the dense brush than a lion. Most of them have a healthy respect for buffalo, are careful with elephants, sometimes contemptuous of the blundering rhino, and are extremely wary with lions.

I already had taken a buffalo, a sable antelope, and the kudu we were using for lion bait with the crossbow and now the supreme test was soon to come.

With a lion you never know exactly how he will behave. I've driven up to within twenty-five feet of them



Using a Wham-O crossbow, Elgin Gates utilizes the same shooting form that brought fame as game hunter.

in a land-rover and they have just given me a curious look. The next one you see is liable to come right down your throat. Then the next will run like hell when you get within half a mile of him. A lioness with cubs is usually mean and surly and not to be tampered with. The only thing to do is play it by ear and be ready for anything.

My white hunter classifies lions as approachable and unapproachable and a funny thing is this: If a lion is the approachable type, the best thing to do is just walk up to shooting range and bust him. If you try to sneak-stalk him, and he spots you, he will either disappear or he will counter-stalk you. Frankly, I'd rather walk up to a lion in the open and take my chances than to be crawling through the brush on my hands and knees while he is stalking me. I bow to my superiors at the art of stalking.

After a quick breakfast of toast and tea, we drove the landrover to a point about three-quarters of a mile from the tree where the bait was hanging and started walking when it was light enough to see. There was a vantage point behind some thorn brush about two hundred yards from the tree. We reached this just as the first rays of sunlight appeared.

The lions were there all right, and through the binoculars I could see the big male lying down at the foot of the tree while the lioness still was worrying the carcass.

We had decided earlier that to get close enough for an arrow shot we would have to assume and hope they were approachable lions. We actually got about eighty yards before the lioness spotted us and dropped down from the carcass. She growled a few times, crouched down facing us and began lashing her tail. We stopped. I double checked the arrow in the crossbow and heard the faint click as the white hunter released the safety on his double rifle.

The big lion was lying broadside to us and at first didn't pay any attention. Finally he turned his head and watched us. Actually, both of us were concentrating our attention on the lioness, for as long as her tail kept lashing, everything was in the green. It is when a lion's tail stops lashing and sticks out as stiff and straight as an iron bar that you are living on borrowed time. This is the signal that they are coming.

We waited at the ready for a few minutes and finally this old girl lowered her chin to the ground with her eyes still fixed on us. Her tail was still moving but not as violently as before. With a rifle it would have been a dead easy shot at eighty yards but I wanted to get closer to try to place the arrow as accurately as possible. I didn't want to go after a wounded lion in thick brush if I could help it. Particularly with a crossbow!

Slowly we edged closer, a short step at a time until we had narrowed the distance to about forty yards. The male was still lazily watching us but the lioness began to get nervous. Her head came up, as she showed her fighting fangs and began growling down in her throat. Her tail still was lashing but I knew we had reached the invisible line beyond which we could not go without having her charge.

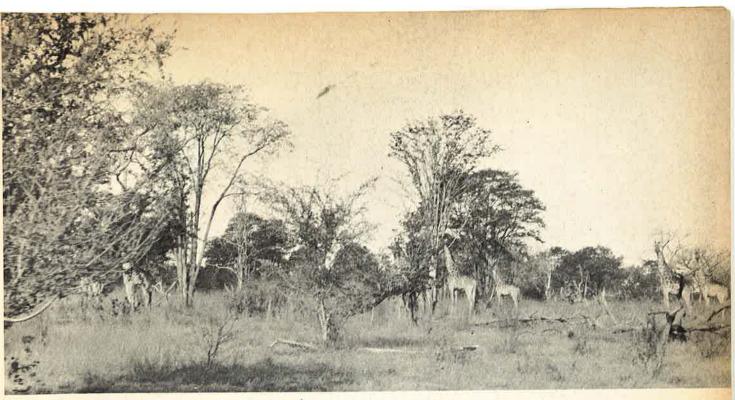
I slowly kneeled down and rested my left elbow on my left knee to get as steady a rest as I could. At the same time, the white hunter raised his rifle and drew a bead on the lioness. I was fairly steady but I could feel perspiration from my armpits running down my sides and my palms were damp. Aiming just behind his shoulder, I released the arrow. It flew just over his back, a clean miss. He got to his feet and stood there, still broadside, watching us, while the lioness hunched down a little lower and snarled horribly.

"For gawd's sake shoot again and hurry!" whispered the hunter. "She is going to have a go at us pretty quick."

Holding the stock of the crossbow in my stomach I cocked it again from the same position and placed another arrow on the track. Taking rather quick aim, I shot again and this time the arrow struck him low in the shoulder, barely missing the leg bone. He made a big leap in the direction he was heading and piled into the lioness knocking her sprawling. He continued running broadside to us and the lioness was so startled, when she got to her feet she followed him without another glance at us. The lion went down thrashing after running about fifty yards. Without even pausing, the lioness zipped by him and ran on into the forest and disappeared.

Although I had hurried the second shot, I couldn't have made a better one. The arrow had gone through his leg muscles and penetrated into the chest cavity. The movement of his leg while running had caused the arrow point to cut a six-inch swath through his vital organs. It had snapped off about four inches back from the point but not before making several deadly cuts.

He had a full mane that was turning black on top and he measured out at nine feet, ten inches, a heck of a fine lion in anybody's language. I had taken several lions on other safaris and while this was the first one I had ever taken with a bow and arrow, I had a strong feeling it was going to be the last.



Above: Giraffes still are plentiful in lion country, where they eat the leaves from lower portions of trees. As a result, there are good lanes for arrow shooting.

This record trophy sable was another of the author's scores with the arrow during a recent African safari. He is noted as rifle hunter, but lately has turned to bow.



FOOTNOTE TO HISTORY:

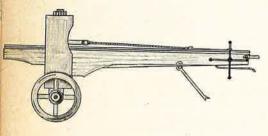


THIS FORERUNNER

OF THE CROSSBOW WAS

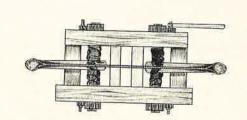
MENTIONED IN THE BIBLE

By Col. Robert H. Rankin, USMC

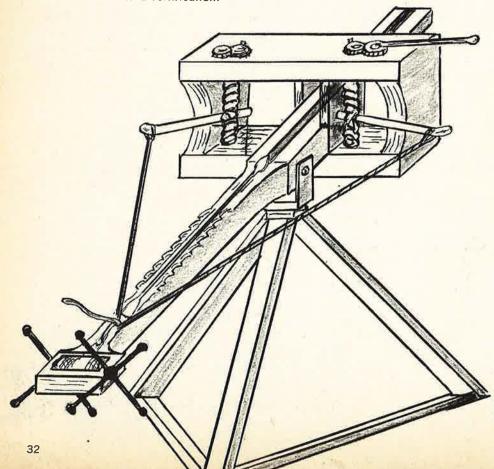


This side view of a heavy ballista shows how the arrow launching device was wheel mounted as heavy artillery.

This medium size ballista was mounted on a tripod. Such weapons as this were used aboard ship or in the defense of castles or a fortification.



Author's sketch of the rear view of framework of the bow mechanism shows how twisted skeins of hair or sinew held separate arms of the bow. The bowstring connecting outer ends of these arms was attached to trough holding the bolt or other missile.



has searched for ways and means of killing his enemy at ranges which will afford him a maximum of safety while inflicting the greatest possible devastation on the other fellow. This search is basic to all weapons development, from the slingshot to the nuclear warhead. One of the early examples of this is the ballista, the artillery niece of ancient warfare. This

piece of ancient warfare. This weapon is of particular interest to us inasmuch as it is the weapon from which the deadly and efficient crossbow was evolved.

The origin of this weapon is old indeed. Consider, for instance, that reference is made to it in the Old Testament. It is written in II Chronicles 26:15 that Uzziah, who ruled over Judah during the first half of the Eighth Century, B.C., "... made in Jerusalem engines, invented by cunning men, to be on

invented by cunning men, to be on the towers and upon the bulwarks to shoot arrows . ." Early military history abounds

with accounts of the ballista. Up until the time of Philip of Macedon. who ruled Macedonia from 382 until 336, B.C., and who was the father of Alexander the Great, such engines of war as the ballista and the catapult were almost exclusively restricted to use in siege operations. Philip was a resourceful and imaginative military genius who uitlized these weapons as highly mobile elements of his forces in the field. He even went so far as to increase mobility by carrying only the essential parts on the march, utilizing timbers cut from trees felled on the spot to furnish the heavy framework of his huge weapons. In this manner a single pack animal or so could transport all the parts required to build a heavy artillery

This artillery of the ancient world was used in a purely modern manner, i.e., for "artillery preparation" to soften up and demoralize enemy troops in the field or to strike at them behind their fortifications.

Some years later the Romans who rarely ever passed up an opportunity to use whatever was offered to them by history and experience borrowed Greek military

rchery's Artillery

ideas and became great advocates of the ballista, even going to the extent of mounting it in various sizes in their fighting ships

in their fighting ships. Flavius Vegetius Renatus, famed Roman military writer of the 4th century, A.D., in his treatise The Military Institutions of the Romans notes that in the famous Roman armies every century (a 100-man subdivision of a legion) was equipped with a large mule drawn ballista called a carro-ballista, Mounted on wheels and operated as a field artillery piece by a crew of eleven men, this weapon could be fired over the animals pulling it. From six to ten of these big war engines accompanied each legion, giving it tremendous fire power.

History recounts that ballistas of various sizes were used rather constantly in warfare until about the early 1400s. However for our purpose it is necessary to note but a few of the more interesting examples. For instance when the brutal ravaging Vikings in their heavy winged and horned helmets spread fire, rape and terror throughout northern France and laid siege to Paris in the late 800s, the defenders used ballistas with telling results to keep the brutes from the north at heav

north at bay.

Using large ballistas as field artillery (guns), with the assistance of big catapults (howitzers) Philip Augustus, King of France, in August, 1203 drove the doughty English knights and men-at-arms, under the renowned Richard Coeur De Lion, out of the supposedly impregnable castle fortress Chateau Gaillard.

Unfortunately the extensive batteries of ballistas used by the defenders of Constantinople were not sufficient to keep out the Turks under Mohammed II in 1453. Mohammed, known for his lust, greed and his cruelty, as well as for his culture, scholarship and military genius, was the first commander to make real use of cannon. What happened when he did was the centuries old tale of the superiority of firepower. Mohammed and his reeking cannon were just too much for the now obsolete ballistas and the ancient luxury loving capital of the Byzantine Empire was given over to massacre and looting.

Although there is a considerable volume of literature available on ancient war engines, the vast majority of this material is devoted to personalities and to accounts of battles. There isn't too much of a technical nature available on the actual construction of the devices themselves. Terms have been carelessly used throughout the years and even today many respected reference works use such words as "ballista" and "catapult" interchangeably. In this presentation the word "ballista" is, of course, used to refer to the huge crossbow-like weapon shooting an arrow or a

It is indeed unfortunate that down through the years that technical descriptive material which was available concerning these old weapons has suffered much in translation to the extent that many of the important details have been lost. Careless and indifferent translators, as well as translators unfamiliar with mechanical and military terms, have all played their part. Likewise, drawings in being copied through the years have become distorted and important details have been omitted. Also, some writers and artists with more imagination than common sense have added details which certainly could not have been part of the original apparatus. So it is that although we have a rather good idea of how these ancient war engines looked and how they worked, we are at a loss when it comes to determining some of the materials used in their construction and to knowing all of the mechanics involved.

We do know that ballistas were literally giant size crossbows. Some had a bow and fittings very similar to those used in the smaller editions of later times. However there was a limit to the size of the conventional bow. To have secured the desired range and impact, the conventional bow would have been so large and so heavy and so clumsy as to be unmanageable. Consequently the propelling mechanism of the larger ballistas had two separate

arms.

Ballistas of smaller size were most often used in the defense of castles and city walls and aboard ship. These were usually mounted on a framework or tripod and could be traversed and elevated. They were known variously as scorpions or as manuballistas.

The missile fired by these engines was a stee bolt. (In some inseed was made for the siles instead of boof the larger balling were of the generation.)

of a lance or javelin. They were propelled with sufficient force to penetrate roofs and even to strike effectively through light parapets. The effect of such missiles on armor and human flesh isn't hard to imagine. Not uncommonly a single bolt would transfix several men, passing right through their armor and skewering them all in a row like chickens on a spit.

The propelling power of these weapons was derived from tightly twisted cords made of horse hair or of the sinews from the necks of horses or oxen. As has been noted the bow of the larger ballistas was composed of two separate arms whereas the crossbow was in one piece. These arms were stout and worked independently. The range of the big weapons was around five hundred yards. The trajectory was fairly flat as contrasted to the highly arched trajectory of the catapult

apult. Their operation was fairly simple. The bolt, arrow or other missile was placed in a shallow movable wood trough. This trough was fitted on the underside with a sort of keel or ridge which moved freely along a slot cut lengthwise in the top of the stock of the weapon. A windlass, permanently fixed to the rear of the stock, was used to draw back the trough and the missile against the tension of the bowstring and the force being exerted by the arms of the bow. A ratchet attached to each side of the trough engaged metal teeth extending along each side of the stock. At any point along the way the trough could be stopped and held until re-

leased by a trigger arrangement.

This permitted a choice of the propelling power being applied to the missile and so permitted a fairly wide choice of ranges and penetrating effects. The innermost part of each arm of the bow was held between a twisted skein of hair or sinew. By means of a lever operated winch on each side of the ballista frame the skeins were tightened and the force supplied against which the bow could be bent.

Far back in history enterprising military people recognized that the mechanics of the ballista were sound and could be easily incorporated in small hand-carried weapons. So it was that the crossbow was developed and another advance made in weaponry. With these weapons, empires were established and destroyed and the course of history was above and the course of history

GOLDEN TRIANGLE (Continued from page 18)

in every form of conveyance Alaska had to offer except horses. Our camps were many and often. Our disappointments great. There were many many nights in front of the cheering camp fire when I was sorely tempted to add the sixty-five pound Kodiak Bear bow I hunted with to the crackling flames. Not to mention three dozen matched fibre glass arrows and various other assundry a bowhunter is bogged down with. Dog tired, soaking wet, sore-footed and all — something kept me going.

Luck broke in our favor the day we began hunting black bears. We left the town of Cordova on the Prince William Sound aboard the fifty-seven foot fishing boat, Valiant Maid, and headed for one of the numer-



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ous bays that line the jagged coast line of this beautiful fjord like country.

The weather was ideal as we dropped anchor and headed ashore in the outboard skiff. The plan was simple. Just row into shore which at this point was a large tidal flat at low tide, anchor the skiff, find a black bear and try to stalk him. The plan worked.

As we rowed toward shore the raucous cries of hundreds of herring gulls feeding on the salmon covered our sound.

Nearing shore a black form on the beach that looked for all the world like an old log began to move and at once we could see that this was no ordinary black bear, but rather a big boar that would easily tip the scales at 350 to 375 pounds. He was going through the somewhat comic actions of catching his breakfast of fresh salmon when we docked the skiff a quarter of a mile away from him and began our stalk into the wind. Slipping and sliding on the slimy seaweed that blankets the shore line at low tide we made our way toward the big blackie.

Crouching low behind the tidal grass we covered the last few yards practically on our bellies. Now with seaweed behind us we had to pussy foot our way around, over and about the piles of slippery rotting salmon. The cycle of their life spent, the fish lay in great drained tidal piles to be eaten by the hundreds of crows, ravens, gulls, and eagles that frequent the tidal flats.

Our luck held. Through the head high tidal grass, I could make out the broken outline of a black form dead ahead. We had closed the gap to thirty yards. Ed dropped into a clear position with movie camera ready for action.

When I had slipped to within fifteen yards of the bear I took a solid stance and began to draw the bow.

As the camera behind me began to grind, the bear turned his head to face me — but it was too late. Already at full draw, I released the bowstring and in a fraction of a second saw the fiberglass arrow, tipped with a Razor Head broadhead, slam into his rib cage. The sharpened arrow cut through one of the ribs ranging into his lungs.

The big boar swung around snapping his jaw like steel traps at the feathered shaft protruding from his side. Snarling and roaring in a motion he was off and running through the high grass. He ran exactly sixty yards and fell dead.

As the beauty of the fjord like country of Cordova fell below the wing of the big 707 jet taking me back to Seattle, I vowed to come back one year to settle an account with a big brownie that simply disappeared from the tidal flat.

After a careful stalk, we were within fifty yards of him, then like a ghost he stepped behind a large mound and was gone. We named him the "celery bear" as he had, by the look of this torn up area, spent most of his time digging up the roots of the wild celery plants that grow here. A delicacy to him. We know someday we will return to this same spot and perhaps record on film one of the few times a Kodiak bear has been bagged with bow and arrow.



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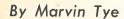
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Ron Garlick and I waded slowly through the kneedeep water of a small West Nebraska lake. Carp were beginning to school up in the shallows and we were looking forward to an afternoon of action-packed bowfishing. I had broken the point off my only fish arrow but I didn't let that bother me. Selecting a broadhead from my quiver, I set out in search of a finned target.

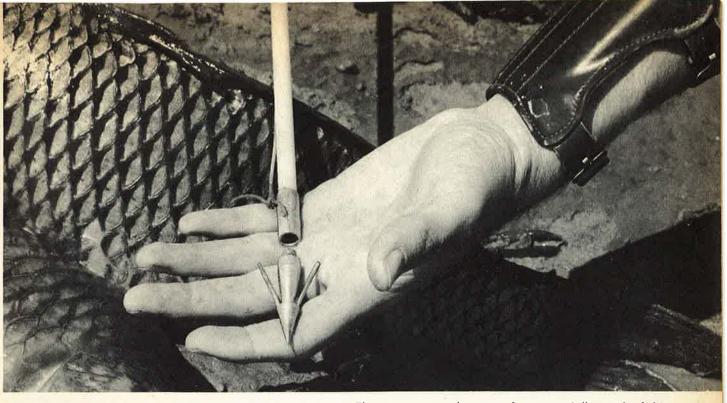
Ron entered the water about one hundred yards from me and began to work in my direction. We hoped to concentrate the fish into one bunch and drive them together. Garlick shot first. His fiberglass shaft flashed into the water and impaled a hefty six-pound carp. Ron grabbed the line and after a brief struggle pulled the thrashing lunker in.

Gazing through the tea-colored water, I spotted a moving form only slightly darker. Shooting quickly, I buried the point of my fiberglass shaft deep in the muddy bottom. Carp fever. Spotting another sixpounder, I took aim and released. At this arrow's impact, the water seemed to explode as the big fish headed for deeper water, the arrow cutting the surface like a submarine's periscope.

I lunged after it and managed to grab the shaft just as the fish reached a heavy submerged thicket. "Look at this," I said holding the carp aloft. "I don't need a fish arrow." Then the carp got its second wind and began thrashing about in my hands. I held on for a moment, then dropped it. Ron laughed his head off as I chased the fish and subdued it again, getting wet

Although effective, this is not the approved method of bowfishing. Hunting bows are ideal for this sport. Once rigged with a low price reel, the bow is ready.





For Midwestern bowfishing of carp, the author found that fiberglass arrows with rubber or plastic vanes are best, as this combination is least likely to suffer damage.

There are several types of commercially made fishing heads now being marketed. Tye's experiments in using nails in wooden shafts were unsuccessful.

THERE'S AN EIGHT-MONTH SEASON FOR THE CRAFTY CARP AND THE EQUIPMENT NEEDED IS MEAGER

The reel is spotted above or below the bow handle. It allows line to peel off with the shot just like an open-faced spinning reel.

Some archers make reels by using old line spools, chunks of wood, and even tin cans. The line is stripped in by hand. At least fifty-pound test is recommended, not only to handle heavy fish, but to pull the arrow out of a muddy bottom or snag-infested stream. The reel should be taped or tied to the bow. Unless a heavy coat of wax is applied first, the tape may peel off the bow's finish. Either furniture wax or a commercial bow wax can be used.

My favorite arrow for this activity is a solid fiberglass shaft with rubber or plastic vanes for fletching. Feathers would soon be destroyed in this rugged sport. The line is passed through a hole near the nock and attached to another near the point. Heads used on these arrows resemble field or target points with barbs to hold the impaled fish. Some barbs are retractable while others screw off the shaft so the arrow can be pulled through without removing the line.

Bowfishing is a booming sport in Nebraska. As far as I know, it is the only state in which the archer can take both rough fish and game fish. The liberal season lasts from April 1 to December 1. During this time the bowfisherman has a wide variety of targets to choose from. He may take large mouth bass, northern pike, bluegills, crappie, walleyes or any of a number of other game species. As in most other states, he can also take rough fish such as gar, suckers and buffalo. Fishing is permitted in all waters except some state-managed lakes and trout streams. Permission from the owner must be obtained to fish in privately-owned lakes.

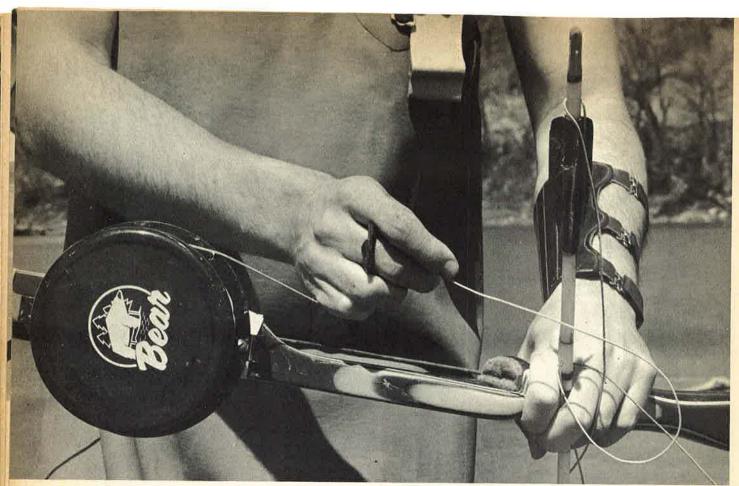
Taking game fish with the bow has raised a bit of a controversy among the state's sportsmen. Some feel that this is giving the archer an unfair advantage. Others claim there is no favoritism at all because anyone is free to use a bow if he wishes. A biologist told me his opinion of the situation.

"I am in favor of bowfishing for game fish," he said. "Most of our waters have too many fish. All the archers are doing is removing a surplus that otherwise would be wasted. They can shoot fish all they want to and it will not hurt the population, particularly if they obey the laws." The bowfisherman is subject to the same limits as the angler.

Unfortunately I was not in Nebraska when the spawning season for the game fish got underway. A friend, Ron Meyers, has taken several four to sixpound bass while bowfishing and says they are as much fun to catch as a carp of the same size. He should know. He has taken his share of carp, including the state record, a husky 29-pounder arrowed at a lake near Lincoln.

I got my first taste of Nebraska bowfishing when I joined Ron Craig and his brother, Jerry, at a small mill dam on the Blue River in their hometown, Fairbury. The water below the dam was filled with suckers moving upstream to feed. They were hard to spot, but once we found a clear area over some light-colored rocks, we were ready for business.

From our vantage point we could see the twelveinch fish standing out against the rock background. But seeing them was only half the battle. Our targets would flash into view and be gone again in less time than it takes to tell about it. Without a chance for deliberate aiming, we had to draw and release almost



Reels are simply taped to a bow handle and can be easily removed without scarring. Rigging looks intricate; isn't.

in one motion. At the same brief moment we had to determine the proper lead and allow for refraction. This called for some real sharp shooting.

What had looked like easy sport soon became something else as we fired a half-dozen shots without connecting. With each shot, however, I was getting more used to the refraction problem, and by the time I got the first fish the whole process of aiming and shooting was becoming automatic.

My first scoring arrow rammed right through a twelve-incher's middle. Once it was landed, I was eager for more. There were plenty of targets but we ended up with only three fish. It wasn't because we were such poor shots. The rocks were raising havoc with the metal points on our limited supply of arrows and we had to give up just when we thought we had it made.

Jerry tried to make fish arrows out of old wooden field arrows. He made barbs by driving nails through the shafts behind the points. The woods broke easily and because of their light weight, the arrows would not penetrate deeply enough to impale the fish. We finally decided that glass shafts were best and that

the only thing to do in a rocky place such as this was to have a supply of extra points to put on the shafts.

Bowfishing is an excellent way to learn the fundamentals of bowhunting. Game is plentiful and no one worries about a missed shot. There's always another fish around the next bend. The tyro bowman doesn't need to buy expensive gear. Most shots are at short range and a light bow will drive an arrow through the largest carp. Reel, line and an arrow can be purchased for less than five dollars. A good beginner's bow costs about \$20.

Most tyros can do very well at close range in clear water. Aiming at submerged fish is the most difficult thing to learn. Refraction, the bending of light rays as they hit the water, makes the fish appear to be closer to the surface than he really is. The angle of refraction varies in proportion to the fish's depth. If you aim the proper distance below the fish, he's in the bag. Ability to judge refraction comes with practice.

Stripping in line by hand is a sporting way to land small and medium-size fish. For monster gars and cat-fish other methods may be used. The line can be attached directly to a fishing rod and the angler can play the catch after a hit is made. Plastic jugs may be used as floats with the line tied to them. After pulling this weight around for a while, the largest fish can be landed easily.

The thought of sinking a shaft into a lunker bass or northern makes me drool. It's almost enough to make me pack my bows and arrows and head north each spring to enjoy Nebraska's bowfishing bonanza.

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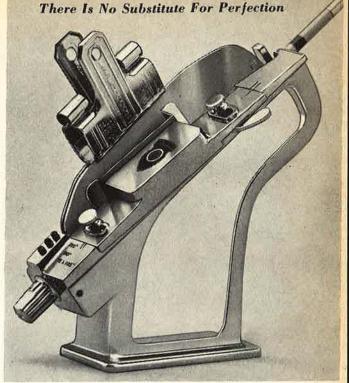
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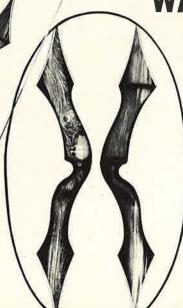


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TACKLE TIPS

(Continued from page 10)

that a shorter bow has many advantages in the hunting field. The very short bow can be shot far easier from either a sitting or kneeling position. In many instances, it is necessary to do this to shoot below low overhanging branches when in the hunting field. The short bow is much easier to shoot on horseback, out of a blind either on the ground or in a tree.

EASE OF HANDLING in the woods is another argument put forth by the bow hunter for the short bow. However, I do not believe this argument to be too valid. At the very best, the bow is a very unhandy item to be carried through very dense growth. I don't feel that two or three inches on either end of a bow is going to make it much easier to get through a brush pile. When I get into brush so dense that I can't carry my bow, I usually unstring it and get the heck out of there. There are darned few deer shot when you are crashing through the undergrowth so dense that you can't carry any length of bow.

SPEED. If two bows are of equal quality in design and construction, the short bow will be slightly faster. However, do not assume just because a bow is short that it is fast. Nothing could be further from the truth. I have personally tested bows of a little more than four feet long that were not as fast as other bows of five foot to five six long. Design and length of working limb is of prime importance in arrow speed.

SMOOTH SHOOTING. Contrary to popular belief, the shorter the bow, the easier it is to make it smooth shooting. Smooth shooting means no recoil on release of the string. The hunter is not as cognizant of a rough shooting bow as the target shooter for several reasons. The first is that he is shooting with a much heavier arrow which will quiet the bow down considerably. Secondly, he does not shoot nearly as many arrows and mostly it is done in the excitement of the hunt and even if the bow did kick, it would not be noticeable.

Of all sports, archery is very likely the most individualistic. No other sport requires a specialized matching of equipment to the individual as archery. The man's physical strength should be considered, his stature should be considered, what use is he going to use the equipment for has to be considered.

Archery is an extremely versatile sport which has to be considered. You can shoot target, you can hunt, you can fish, you can shoot archery golf; all these endeavors requiring either a different draw length, bow length or different arrow equipment. In archery, it is almost necessary for the individual archer to get into the sport and get his feet wet before he even decides exactly what type of tackle he would need.

THE BEGINNING ARCHER seldom knows, himself, in which direction his archery adventures are going to lead him. Many archers walk into an archery shop, thinking they are going to be the great white hunter. In the course of their first few months in archery, they find out what a field range is and become obsessed with field target shooting. One or two trips out hunting and they quickly lose interest. The reverse happens in some cases where a man doesn't even consider the hunting aspect until he gets one shot at a fleeing jackrabbit. This is such an exciting experience that you will seldom find him home on Sunday morning but out in the hills throwing arrows at jackrabbits.

I am many times criticized for not selling the new archer who walks into my shop the finest equipment hanging on the wall. Do not get me wrong; I believe in fine tackle. However, to load a new archer down with two or three hundred dollars worth of equipment that might not be suitable to his direction in archery is doing him a disservice. I believe that the new archer should buy reasonably priced good equipment until he finds his direction in archery.

In other words, you've got to get your feet wet before you know which way to go. For a modest investment of \$40 to \$50, you can get good usable tackle that will show you which way you will eventually go in archery.

KODIAK TEST

(Continued from page 27)

of a fine way to break in a new piece of equipment, first shot at game. All that sort of thing; dandy show!

By the time I had him field dressed, Fred appeared to announce he had spooked up the boar as he approached the same band of goats from another angle.

The following day, I had a chance to try the bow out at long range stump shooting and potting at the ground squirrels that abound on the island. Although I'm not a real top shot I found the new Kodiak one of the easiet bows with which it's been my pleasure to throw an arrow. At ranges of 50 to 70 yards, I scared many a squirrel out of a week's growth and actually stabbed a couple whose time must have been up.

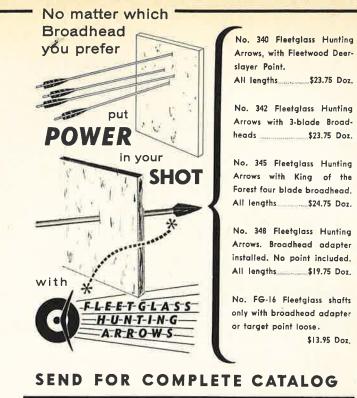
The closer ranges are more my meat and ranges under thirty yards seemed almost a cinch. No doubt about it, the bow has a lot of *oomph*.

There has been a trend in the last few years — one that Bear also has followed — toward heavier handle riser sections. As I stated earlier, the new model is lighter and for my money easier to handle as a result. After solid shooting, it is my opinion that the lighter handle in no way bothers the shooter, even when he has become accustomed to heavier bows. This, of course, would not necessarily follow in longer target models or even longer hunters. Limbs vary and stability is a problem with each limb combination. With the shorter bows, under sixty inches, this is not the case. Generally speaking, there always are going to be a few that are — well, different.

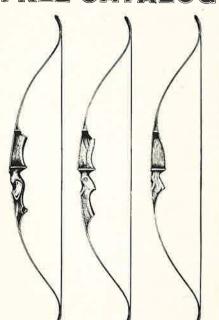
Although I had proved to my own satisfaction that the *Kodiak* had zip and lots of smash, I was to get another chance or two. The following day was satisfying from a hunting standpoint before the big event. Stalking and playing tag with the billies, I looked over forty-seven big ones and finally found my thirty-incher.

Circumstances prevented my getting any closer than forty yards, so I decided to take him at a three-quarter angle going away. Although the equipment, as mentioned earlier, was relatively light, I knew it was adequate. When the shaft went through him lengthwise, I was more than impressed. He was completely stoned. The tape said 29¾ inches, not quite the goat I thought, but I'm not one to quibble over a quarterinch.

All in all it was a satisfying test—for me and the bow. The *Kodiak* held up well, even when I nose dived through the cactus and skipped her across the rocky hills. The scratch in her riser gives her that tried and true look, while the cactus in my leg gave me that used feeling.



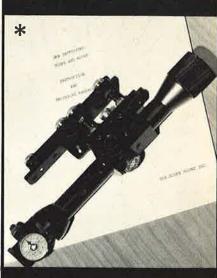




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CALLS FOR THE WILD

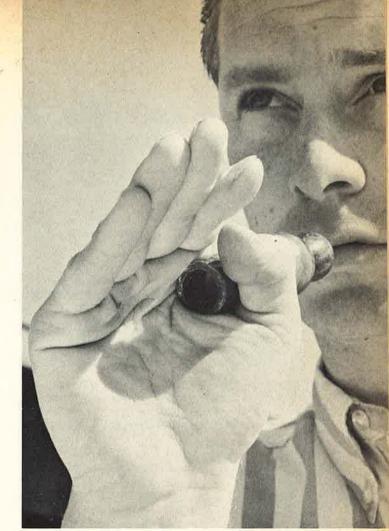
AND HOW TO USE THEM

BY JIM DOUGHERTY

A BOUT three years ago I took a beginning caller, Roy Chesley, on his first real varmint hunt. Roy had been calling for a period of six months prior to this memorable event and had noted little success. I should admit here and now that this hunt was made with firearms as we were in the midst of a State Field Contest as well as a large concentration of varmints that were doing vast economic damage to the local ranchers. This hunt was for "blood" so to speak and not for the pure joy of calling-hunting such as bowhunting provides.

hunting provides.

We had quite a time and proceeded to dispatch five bobcats and eleven coyotes. Roy's enthusiasm and excitement as a result of this can hardly be doubted. On one stand we had a coyote come in from behind and actually run right into Roy, throwing dirt and gravel



Above: Proper hand position is important as this controls tone. After initial "surprise call," he uses one hand through entire stand. This is Weems model. (Lower left) With Circe Trophy model, an extra-long barrel call, the author demonstrates means of getting maximum volume for long range. Hands are clamped firmly over end of barrel while caller builds up steam. (Below) When pressure has been built to maximum, it is sharply released. Hands act as sounding board and volume goes in direction hand points. Cries should be drawn out for ten count, then raised in pitch to quavering distress. Last high pitched wail carries best over great distance,



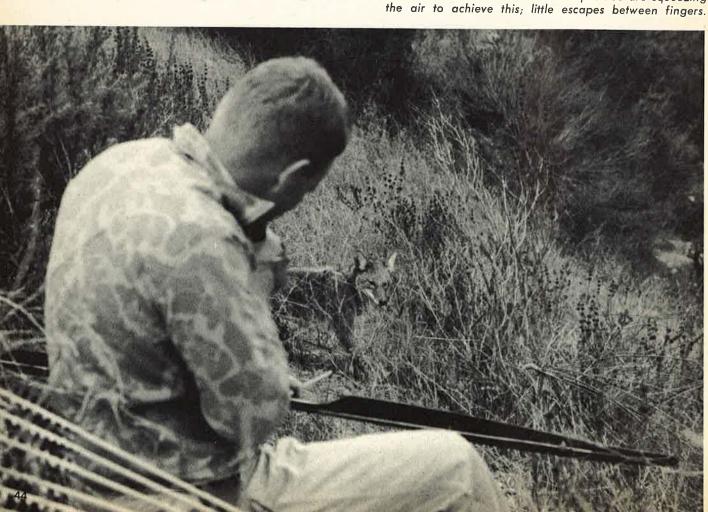




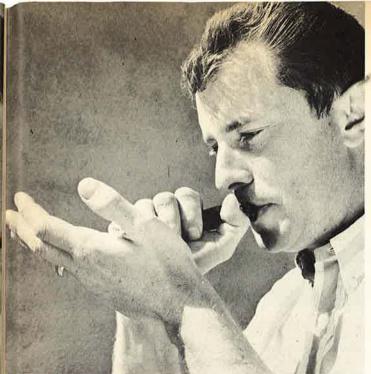
This is author's favorite hand position as tone can be changed to raspy pitch dear to coyotes. Fluttering hand gives effect of commotion which works coyotes into frenzy. Muting call can be accomplished with this position, air easily controlled. In order to mute the call, always point the barrel of call away from your incoming game.



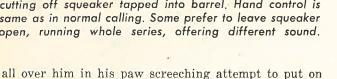
This hand position offers a chopping effect that sounds like rabbit fighting with captor. Left hand can be opened rapidly for tone control and volume.



Don McIntosh brings coyote in close with subdued squeaks. Note that his hand has completely covered the barrel to allow little sound to escape. You are squeezing



Using Weems Dual Tone, author starts "surprise" series by cutting off squeaker tapped into barrel. Hand control is same as in normal calling. Some prefer to leave squeaker open, running whole series, offering different sound.



sand running off his hat brim and bouncing onto his nose, was ready to admit that varmint calling actually Whatever the weapon, or even with a camera, the man with a call properly used is in for action and success previously denied him. In Roy's case, after six months of frustration he found that it really was all

the binders. When the confusion was over, Roy, with

it was cracked up to be. Since that time he has gone on the callers trail with a zest, and has taken a second place in the World Championships as well as placing in California State events. I cite this example as an indication of a particular

problem, one of handling the call. Roy had at that time a considerable knowledge of the game in question. He had hunted all his life and trapped, too, and knowledge of trapping varmints does not come overnight. One experienced in trapping the predators has an appreciable jump over the man off the street, who enters varmint

hunting with no prior knowledge.

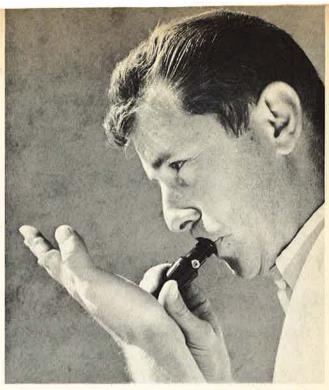
On the hunt under discussion, Roy made a few stands throughout the day but spent most of his time in the car, practicing between stands, trying to mimic as best he could the style I was using in the field. By the last few stands he was calling well and demonstrated this by tolling in one cat and three coyotes.

This, to me, is a classic example of a big point: Varmint calling is easy, if one follows a few simple steps and develops a style. Two years ago, Roy called like I do, but today there is very little similarity between our calling styles, yet for the most part he will outcall me in the field. This is a blow to my ego, but gratifying, too.

Over a ten-year period I have been instrumental in teaching hundreds of varmint callers the basic fundamentals of calling. Each individual has, from this point, progressed to his or her own style of calling,

one more suitable to his physical abilities.

By physical abilities I mean this: Each person has his own blowing capabilities; it cannot be expected that all individuals' wind and endurance are the same. Blowing a call is work, so some callers take it easy



Advantages of the dual tone are seen here. The main barrel can be cut off with flat of palm forcing air through squeaker for close, fine calling. Hand also can maneuver both calls simultaneously for calling bobcats.

Author poses with second place trophy won in World Varmint Calling Championships, 1964. He used Weems Wild Call with high-pitched rabbit voice and an All Call with more course tone in effort necessary to win.



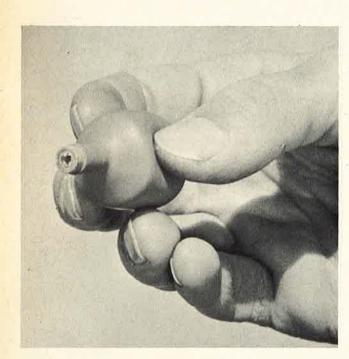
where the next will turn fourteen different shades of red and purple while calling. Some callers blow so hard you can actually hear their lungs and diaphragm working where the next will achieve the same volume tone completely relaxed.

You can explain techniques and styles to the beginner but you cannot expect him to mimic completely your style, and there is no need that he do so, because his chances for success are just as good as your own from a call handling standpoint.

from a call handling standpoint.

Upon developing his calling ability, the future varmint chaser will decide on tones and calls that work best under specific requiriments.

The three biggest selling and most popular calls are, Weems, Circe and Burnham Brothers, not necessarily in the order of preference. Each one of these calls sounds a bit different and is entirely different



Above: Circe "coaxer" call imitates the sharp squeak of a mouse rather than rabbit music. Bobcats find it difficult to resist at close range. (Below) Burnham Brothers close range is a popular coaxer call and is excellent for fox. Pitch can be varied by pressure of bite on the plastic mouthpiece. No hand control is needed in blowing.

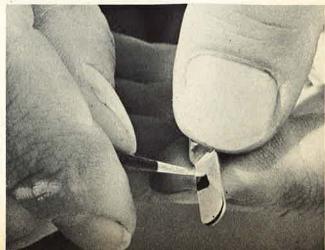




With tuning rod, reed is removed from Circe Professional, three calls in one, each pitched differently. Reeds are easily removed with proper tools and serious caller will tune his on call, but it requires plenty of practice.



Above: Author's favorite is plastic call, which he feels has better animal appeal. It is set to take a variety of reeds, which may be changed in the field. (Below) He tunes reed to his particular requirements. Tone can be changed by crimping in various locations, but spoilage is high as the metal is thin and sensitive to cracks.



to blow. I personally feel the Weems call is the easiest to blow and the best sounding, but Al LaReau, 1963 California Field Champ, prefers the Burnham, as he feels it is easier to blow. This is a direct reflection on individual physical capabilities.

All of these are excellent and so are the several dozen other brands availables to the caller. Under certain conditions, any of them will work, but under all conditions I feel these three are the ones that do the best all-around job.

Calling patterns vary greatly between individual callers, but no matter what the difference in style, several things remain constant. To be a good caller, I tell the beginning to think of one thing while calling: A rabbit fighting for his life. If this is kept foremost in mind, your style will develop. Each caller must learn to control his call with the hands and the regulation of air pressure. How well he learns, will determine his ability.

Generally, a call is broken down into three parts—surprise, scramble and distress. The surprise call is your first series, and regardless of the volume or intensity, it is the main portion of the call and the part that arouses the critter's interest. This portion of the stand has the carrying power to reach out up to two miles and wake up the varmints.

The scramble is designed to imitate the rabbit fighting with his antagonist and arouses the killer instincts in the varmints. It is the heart of the call and each accomplished caller may handle it a bit differently, yet results are the same if done well. The scramble requires a lot of finesse; just the right amount. Air pressure has to be well controlled with the hands doing the work, as the fingers play the airstream in the same manner that a trumpeter works his horn.

Distress cries are pretty much the same with each caller; wavering cries that go up and down the scale. They should be excited and they should be played out to indicate weakness. Mute the call while using a distress series, especially if you have game coming in. Never launch into a hard series when an animal is coming in hot. You can sometimes do this when one is leaving but, by then, what the heck . . .

Learn to handle the call with one hand, as this will serve you well in the field where control of your weapon is necessary. I usually start a call with both hands, since this is required where volume is the objective. Then I switch to one for most of the balance of the stand.

The sound of the call goes where you point the barrel. For this reason point your call well upward, at about forty degrees when beginning, and face it to all points of the compass on your initial series. Pointing the barrel down is a good way to mute the sound. Muffle it against your shoulder or under your jacket if you like to coax a critter up close.

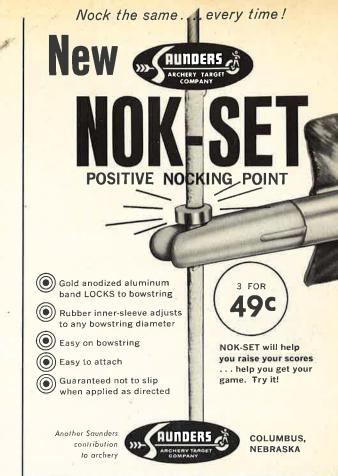
if you like to coax a critter up close.

Muting can be accomplished by terrific air pressure and finger control, too, although it requires practice. Muting the call gives a different effect than switching to a squeaker. A muted jackrabbit voice is better in my mind for coyotes than a squeaker.

Wooden calls may sound excellent to the human ear, yet I believe that animals actually prefer the tone from plastic barrel calls. There is no proof for this other than personal observation but if you're having slow times with a wood call, you may do well to switch. More volume can be obtained with wooden calls and in this respect the Circe cannot be beat. For callers in the windier areas this would be a wise choice.

Check the inside of the barrel of your call. For maximum effectiveness it should have a tapered sound chamber, as these are easier to handle and will give you a third more volume than a parallel chamber.

There is more to it than meets the eye, and trial and error are the best educators. You'll never be good at it unless you spend a lot of time in the field . . . get with it and good luck •





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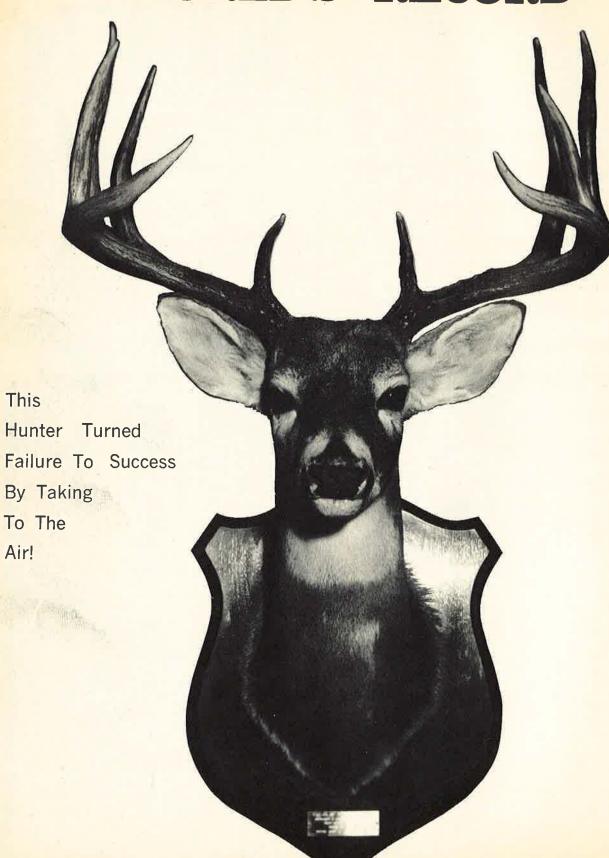
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FIRST DEER: WORLD'S RECORD



When the annual Pope & Young Dinner was held in Chicago February 5, the award for a new world's record whitetail deer taken with bow and arrow went to Kent S. Price, of Chestertown, Maryland.

Although the deer was taken in the Fall of 1962, scoring was not completed until late in 1963, explaining the delay in the presentation being made.

We asked Mr. Price to write his own account of exactly what happened there in the Maryland woods. This is his account:

A NTLERS flashing in the sun! I drew a deep breath and tightened my grip on my bow. Six buck whitetails were skirting the woods a half-mile away. Closer and closer — but suddenly, as quickly as they had appeared, they began to melt into the underbrush. And then without warning he broke from the pack! He was a magnificent bronze buck with a record book rack held aloft by a neck swollen half again normal size by the rut. He had winded two doe that were busily munching acorns about a hundred yards from my stand. As straight as the proverbial arrow he came and with him all of my grandest dreams of my first deer.

My thoughts flashed back four years to my first deer hunt. As green as they come, I stood in the woods clutching my bright new bow and three arrows, hoping that the steadily falling rain would not warp them. Two ghostly grey shadows materialized out of the mist and when I realized that these were the first deer I had ever seen, I quickly launched my ill-aimed missiles. That day I learned the first of a long series of lessons, namely that your intended target should be within range before you shoot.

The lessons continued and my hunting and shooting skill improved. I traded my everyday clothes for a full set of camouflage, painting all my equipment with drab olive and black — even my shiny new bow. The better I got to know deer, the more I realized that camouflage is most effective in preventing deer from seeing you, but I was still having trouble with deer winding me. Not until opening day of this season did I finally hit upon the solution.

I've always hunted near a trail or a well-used field. Although I had heard about tree stands, I always had hunted from the ground. After an unsuccessful morning of waiting, I decided to use the midday slack period to look for a natural tree blind. I searched the edge of a woods which bordered on a deer pasture of millet. As the search wore on, I was ready to conclude that blinds don't grow on trees but then a large fallen oak caught my eye. The tree, about three feet in diameter, had been sawed off some twelve feet from the ground and the fallen trunk still rested on the edge of the stump. This provided me with an inclined ramp to the top of the stump.

As I surveyed the field from my perch I allowed that no self respecting deer will ever come near here. Why even a mole can see the stump is standing naked in the field and you have no cover in front of you. Before I could scramble down, a deer, intent on brunch, ambled into the field. Although the deer stayed slightly out of range it was quite obvious she did not see me. You see, I completely forgot that I was wearing my cover and with the woods behind me, I blended perfectly with the scenery.

From the tree stump I could oversee the millet for over a mile as well as half a dozen trails which opened into this field. The most strategic trail openings were forty yards to my right and at the very base of my stump blind.

That glittering rack caught my attention again. I tried not to look at it because I realized that the sight of it produced the same crazy uncontrollable excitement that had caused me to hurry the shot at the four-pointer. I had missed earlier in the season. The big

buck paused to greet the grazing doe, then began to walk directly toward me, testing the wind and searching the woods for the slightest movement or sound. My arrow was nocked and my bow was in position to be drawn but I dared not move

out to me to shoot but in the back of my mind I remembered the four-pointer. He was so close now that I could see those flared nostrils straining for a telltale scent and those flashing black eyes.

He changed course slightly and headed for the trail at the base of the stump. He was walking right under me! I drew full and let fly for a liver shot. Thunk! The arrow buried itself deep in his rib cage. With an explosive snort he crashed past the saplings lining the trail and the snapped shaft of the arrow fell to the ground.

I shakily sat down and begrudgingly waited fifteen minutes for him to stiffen up. Of course, I figured by that time he might be in the next county. Not a trace of blood showed on the trail which I had seen him enter. My heart sank! However every step he took left a barely visible depression in the carpet of leaves covering the trail. Back into the woods I went — fifty yards — seventy-five yards — then a little over a hundred yards from where I had shot him, he lay dead next to the trail. The arrow had severed both the artery and vein supplying the liver and he had bled out quickly. There was no blood trail because the arrow penetrated high on his side and the blood remained in the body cavity. He dressed out at 190 pounds — not real big but his rack scored 167-3/8 points in Pope and Young competition — a world's record!





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TECH TALK

(Continued from page 8)

(Another problem can come in the way the arrow makes contact with the bow arrow rest. Broadheads again will show up mistakes more than field arrows. Be sure the arrow is nocked so it points slightly downhill . . . the nock end of the arrow should be between an eighth and a quarter of an inch high when the arrow is nocked on the string and resting on the arrow rest before the bow is drawn. This is an error many archers overlook; they nock horizontally across the arrow rest so the arrow forms a right angle with the bowstring. Also, the arrow must press against the side of the bow directly above where it touches the arrow rest. This should be at a single point, not touching completely across the bow, nor in a bearing surface of more than a quarter inch.

(A small piece of leather glued to the side of the bow where the arrow should touch will cure any defects. The arrow rest for best results with broadheads should be of the vertical feather type, made of several feathers glued together upright and trimmed to a parabolic shape. Only this type of rest will give the cushioning effect which a broadhead requires for perfectly straight flight, as shown during a number of high speed photo tests using a shooting machine.

(Broadheads must have adequate fletching in order to be stable. A field arrow can get away with less, even when the arrow length and head weight are the same. A minimum size is five inches long and five-eighths high. Less will give stable flight only when shooting form is perfect and always the same with every shot. The least error will move the arrow off of its intended flight path and there won't be sufficient feather area to immediately bring it back.

(Finally, you might try a nocking point both above and below the nock to form a sort of socket for the arrow nock. Sometimes the fingers move the nock slightly, causing more effect upon broadheads than field arrows.)

ON ARROWS

I am not new to archery, but until now, never was really serious about it. I recently purchased a 36pound at 28-inch Staghorn Delta International tournament bow. I also shoot a Red Wing Hunter.

With the Wing bow, which is 47 pounds at 28 inches, I have trouble. One target, I will group the arrows well (No. 7 Micro-Flight with 57pound spine.) On the next target, be it far or close, my arrows will scatter to the side as well as up and

I realize the Wing Hunter is a short bow, but I feel I should do better. I draw a 291/2-inch arrow and shot these same arrows out of my 36-pound bow and they flew well. I increased my score considerably. With my long draw and my bows all checked at 28 inches, how much over spine do you recommend? And do you think this is my problem?

Another thing to take into consideration is that I do not use the three-finger release. I shoot the Royal release (a flipper type release held between thumb and forefinger). I feel this gets a little more speed and smoother release. J. R. Roll.

Wausau, Wisconsin (We don't recommend that one use too stiff an arrow, other than possibly going one size stiffer when the recommendation charts show a borderline case.

(From your letter, you possibly have compounded the difficulty. The shorter bow is somewhat difficult to shoot with a high degree of accuracy; however, you have cut this down somewhat with the flipper. But by using the heavy shafts, you add to the problem and accentuate the short bow inaccuracy.

(You would perhaps note quite a difference if you went to a lighter spine. However, the Micro-Flite shafts manufactured in the past year are not of the same specifications as those made before. A size 7 is now recommended for up to a 50-pound bow at 29 inches with target point. If a broadhead or field point is used, a size 8 is right. If your shafts are not older than a year, you may have too light a spine for your bow!

(Another thing to check is the type of arrow rest you are using. Try a standard vertical feather rest, if one is not on your bow now. Be sure that your nocking point is at least one-eighth inch above the horizontal on your string so your arrow actually points downhill.)

BEAR HUNTER

If you were going to hunt for black bear in the 200-400 pound category, would a 50-pound bow be enough with a three-bladed broadhead? And at what distance would one be the safest? Robert Beitler.

Norwalk, California (A 50-pound bow is fine for any form of big game hunting, including black bear. We would suggest, though, a two-blade head, as it will (Continued on next page)

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- \$5.00 Living Off the Country
- ☐ \$3.95 All About Camping
- \$3.95 Wilderness Cookery
- 53.95 Wilderliess Cookery

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NEW GUIDE TO BETTER ARCHERY, Second Edition, Revised and Enlarged by Thomas A. Forbes. This is an authoritative reference which deals with all phases of archery from how to select a bow to how to stage a tournament, including interesting chapters on bowhunting and woodscraft. Containing 343 pages, there are some 68 line illustrations by Ned Smith. A must for the serious archer. \$5.50.

MODERN BOWHUNTING by Hiram J. Grogan. Here is a book that is loaded with practical information; the kind you can use in the field. In the text, the author uses his own experiences to illustrate his various successes in hunting everything from crows to alligators, not to mention deer. Information on special equipment and advanced techniques for various game are spelled out. Contains 163 pages, center section of exciting hunting photos. \$4.75.

BUCKS AND BOWS by Walter Perry. The author is an ardent and successful deer hunter as well as an enthusiastic target archer. As suggested by the title, this book is devoted exclusively to hunting of deer with bow and arrow, and it includes full information on types of tackle, as well as best ways and means of downing your buck. Has 223 pages, 72 illustrations by author and Edward B. Hagey Jr. \$4.95.

LIVING OFF THE COUNTRY by Bradford Angler. This book has all of the information needed for staying alive in the woods, whether you be survival buff or simply the hunter who wants to be prepared against the possibility of being lost or running out of food. The information is practical and tried by the author and others. Contains 241 pages with humorous practical illustrations. \$5.00.

ALL ABOUT CAMPING by W. K. Merrill, U.S. Park Ranger. This book covers the field with facts and sage advice on every possibility from trailer camping through survival, touching on safety and first aid. It is certain to make your trip happier, safer, and more interesting. Has 262 pages, over 100 illustrations. \$3.95.

WILDERNESS COOKERY by Bradford Angier. Here's an amusingly written book that reads unlike any volume of recipes you've ever seen. It's based upon the author's personal experiences in living in the woods, attempting to improve upon cookery of the old frontiersmen. However, all of the recipes make extremely edible fixings. It fills 256 pages with many helpful illustrations. \$3.95.

TECH TALK

(Continued from page 51)

penetrate farther. The popular Little Shaver broadhead or the Bear Razorhead without insert would be good choices.

(Close range up to thirty-five yards will give best results, but one can score with shots up to sixty yards — if they are downhill. The bad position to take with a bear — safety-wise — is to be downhill of him at close range. It is best to be downhill when over forty yards, as a bear has difficulty in maintaining his balance when going downhill rapidly.)

SHORTIE SEEKER

How short can a fiberglass bow be made with a sixty-pound pull?

Karl Reiner, Hempstead, L.I., New York (There are several fiberglass bows of under forty-eight inches which can be made in sixty-pound weights, and some of the ultrashort flight bows measure less than three feet, yet can develop over a hundred pound draw. To the best of our knowledge, the shortest popular commercial hunting bow is the Bear Kodiak Magnum, which is fifty-two inches in length and is available in the sixty-pound weight. Also Tarbell Custom Bows of Ontario, California, makes some real shorties, but the shortest of these is forty-seven inches, while another standard length is an even fifty inches.)

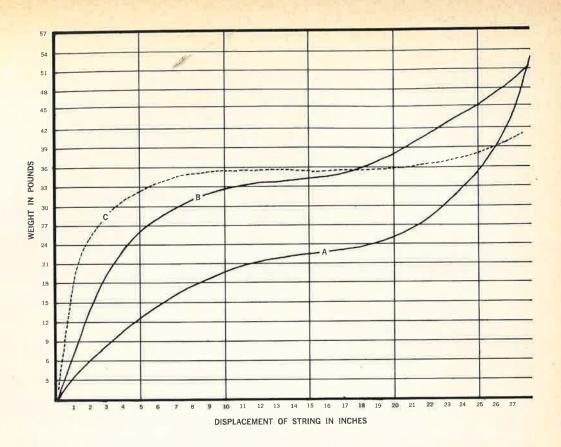
RANGE BUILDING

We are beginning erection of a broadhead course at our field range. I am interested in finding out what kind of material, placement and types, are used for backstop problems.

We had thought of placing a 1x1inch framework with animal target stapled to the frame and locating the backstop at the approximate range of the end of the arrow's trajectory. Any suggestions?
Robert Bigler,

Shippensburg, Pennsylvania (Most of the broadhead courses that use silhouette targets simply locate them where the arrows can fly into a bank of earth ten or fifteen yards to the rear of the target. If you have a spare bulldozer, this can easily push up a pile for each target.

(The targets can be made of eight to twelve thicknesses of corregated cardboard, glued together. The animal then is glued to the cardboard and the outline cut out with a sabre saw. The target is best hung with baling wire to snow stakes or 2x4 stakes driven into the ground.)



Charting Bow Energy

By Frank W. Morgan

This Engineer Suggests That Bow Makers Furnish Charts

To Help You Know Your Bow Better

In reading the article, Arrow Speed Vs Bow Weight (BOW & ARROW Nov-Dec. 63) I was struck by an interesting possibility. If as the author suggests, one would use identical arrows in testing a variety of bows, the only thing tested would be the total energy in each bow at the draw.

As an engineer now working in the South American jungles, I have been doing a good deal of archery and have had an opportunity to give this theory thought and conduct some practical tests.

For instance, another way of measuring this energy would be to support a bow horizontally with the string downward, then measure the string displacement produced by various weights hung on the arrow nocking point. Simple but effective.

If these weight versus displacement quantities were graphed, the resulting chart would resemble the one included here. To put it more simply, perhaps, the energy stored in any bow would equal the area, under the curve plotted for that

bow. This quantity would be in inch pounds and would tell the number of inches which our bow would lift a one-pound weight. The area can be found quite easily by counting the squares on the chart graph paper.

As one can easily see, the two curves — representing two hypothetical bows (A and B) — both have the same pull at about twenty-seven inches; bow (B) obviously has the larger area under the curve. Thus, although bow (A) and bow (B) obviously have the same pull at the twenty-seven inch draw, the latter will cast an arrow further.

Although this may sound complicated and unlikely to the casual reader, it has been proven under the accepted engineering theories concerning "variable thrust."

In thinking this over, and after having done more experimenting with the limited means found here in the jungles, it seems to me that a better measure of bow performance would be inch pounds of energy available at a certain draw, rather than simply pounds of pull.

If an archer had this information available for two bows, he could readily decide which would cast an arrow further. This, in turn, could take a great deal of the guesswork out of bow buying. In fact, the ideal solution would be for each bow manufacturer to provide a bow similar to those described with each bow manufactured.

Of interest, too, is the obvious fact that, when you look at these charts, there seems to be a rapid rise in force at the beginning of the draw and a slow increase in force at the end. Although impractical for shooting, the maximum energy would appear to be with a minimum pull. This is illustrated by graph C. Thus, a bit of work in changing a bow's energy curve could certainly go a long way toward increasing the velocity of an arrow.

Who will be the first bow manufacturer to provide energy charts?

BOW BITS

NEW TOURNEY BOW

The Constellation — described as "the pro bow that has everything"— is being introduced by York Archery for the tournament archer who seeks perfect balance in addition to maximum stability, cast and smooth shooting.

The Constellation boasts an oversize handle section, made entirely of Brazilian rosewood, adding weight for smooth shooting. Engineered into the bow is careful balance between deflex for stability and reflex for cast.

In addition, the individual archer can balance this bow to suit his own particular style, compensating for the brace height for best results. The forward-placed projections have capped ports for insertion of from one to eight lead discs.

The bow, selling for \$129.50 has glass backing and facing, and has a satin glass hand-buffed finish. It is available for either left or right handers in 64 and 68-inch lengths.

For full information on this and other bows in the York line, write to York Archery, P.O. Box 367, Independence, Missouri.

'64 HOWATT DEBUT

Ken Barns, general manager of Howatt Archery, explains the newly restyled *Monterey* bow to Sue Reiter at the Yakima plant.

Although model names have been retained, all Howatt bows have been restyled with the exception of the *Del Rey, Century 21* and the children's *Little John* model.

And with the exception of the *Little John*, all Howatt bows now are provided with a thumb groove as an integral part of the design without added cost.

A full color brochure concerning the new models now is available by writing: Howatt Archery, Route 8, Yakima, Washington,







JAPANESE LANES

When the \$2,000,000 Shirogane Bowling and Archery Center opens its doors in Tokyo in July, there will be included eight archery lanes featuring Ben Pearson automatic lanes equipment.

Gerry Powell, president of the Pine Bluff, Arkansas, firm has announced that this will be the first such installation in the Far East.

The installation, now under construction, will be only a stone's throw from the Imperial Palace and will include four floors, the third floor of which will be devoted entirely to archery.

To conclude the transaction, officials of the Japanese firm flew to Pine Bluff in January to work out details of the installation with Hugh Humphreys, marketing director for Pearson's archery lanes division

Pictured in the photograph are

(from left) Yasuo Sato, operator of the Tokyo center which will house the archery lanes; Michio Kimura, New York representative of the firm distributing Pearson goods in Japan; E. Katamine, and Humphreys.

Outdoor archery, called Kyudo, has been popular for centuries in Japan. It is a highly stylized sport and its champions are determined as much for form and graceful style as for accuracy. Women as well as men take part in Kyudo, and are expected to help popularize indoor archery in Nippon.

In addition to this foreign installation, the Pearson management also has announced installation at the Regal Fun Plaza in Mishewaka, Indiana, and at the Cue and Cushion in Indianapolis. Still more equipment has been installed at Al Shannon's Archery Center in Memphis, Tennessee.

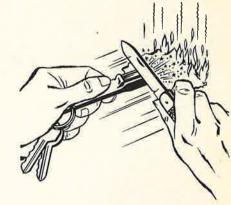


WET WEATHER LIGHT

If you're the kind who insists upon hunting in the rain, Ray-O-Vac has come up with a new innovation for you. It's this new 306 Sportsman sealed beam lantern, which has been designed for scuba and skin divers.

Exterior and interior structural metal parts are of salt water corrosion resistant stainless steel. Head and handle are molded of neoprene rubber, while a completely water-proof switch, located at the rear of the handle, is enclosed in rubber.

The head is removable and is attached to the battery with a retractable cord. It retails for \$19.95 at most sporting goods stores.



TARGET CHANGE

The National Archery Association has changed the official target heights for schools, colleges and camps to permit use of more convenient target stands on wheels.

In NAA official Six-Gold Tournaments, the center of the gold now must be fifty-one inches from the ground with three inches allowed up or down. An exception in this ruling on target heights for schools, colleges and camps recently was approved by the NAA board.

This type of wheeled target stand now is being made by Saunders Archery Target Company, saving time and work in moving targets. Damage to arrows or stand is minimized by a twelve-inch space between the target matt and the steel frame, and a broad base keeps the wind from tipping the targets. For information write to C. A. Saunders, Saunders Archery Target Company, Columbus, Nebraska.

LIGHT, ANYONE?

Here's a handy item in the woods. It's called *Flint-Stick*, and when scraped with a sharp edged bit of steel, it gives off a high temperature spark and lights a fire in one easy operation.

The Flint-Stick kit includes a key ring for easy carrying, as well as combustibles. It can be used by hunters, campers, Boy Scouts or carried in a survival kit. The price is an even \$1 postpaid, if you write to Flint-Stick, P.O. Box 6082-P, Lakewood, California.

FAMILY HUNTING GROUND

For western hunters, shooting Catalina's mountain goat and wild boar no longer is a sport for men

With better than fifty percent of all Catalina Island hunters scoring kills this year, the isle's bowhunting set-up not only offers camping that a woman and junior bowhunter can enjoy, but provides an exceptional opportunity to take big game trophies as well.

According to Game Manager Fred Kindel, there now are two bowhunting camp sites situated in beautiful locations in the heart of wild goat and boar country a short distance from Avalon, the island's only town. These facilities are available to groups of four or more for a minimum of two days. Camps have large, wood-floored tents and provide all basic necessities except food and bedding.

For information, contact Fred Kindel, Santa Catalina Island Company, Box B-2, Avalon, California.

Circulation Department,

NEW ARCHERY ENTRY

After a decade of manufacturing leather archery accessories, Darton, Incorporated, has come up with a complete line of bows and non-lea-

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Dougherty. And for articles on antique fire-

arms and how-to-do-it, you'll be able to read

Jack Lewis and Col. Robert Rankin will keep

you up to date on the latest — and oldest —

Tommy Bish's simple, informative prose.

in military weaponry, and Francis Sell and

others will be in every issue to insure your

knowledge of shotgunnery. If you haven't

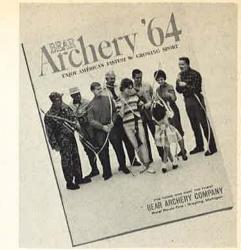
tried this leader in the field, start today!

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12 big monthly issues of this leader in the

According to Gene Ellis, superintendent of the Michigan firm, seven bows priced from \$19.95 to \$200, the latter the Imperial for tournament use. This bow is made of Brazilian rosewood and fiberglass. coming with leather case and a built-in sight. It will be produced in limited quantities with checkering inscribed. The grip is flat with an adjoining thumb rest, and the bow carries a guarantee against defects in material and workman-

Accessories included in the new line are: Arrows, arm guards, bow string protectors, pouches, bow cases, bow fishing equipment, feathers, tips, shafts, nocks, feather burners, bowstrings, string silencers and brush buttons. For information write to Darton 3261 Flushing Road, Flint, Michigan.



NEW BEAR CATALOG

Bear Archery's 1964 catalog is now available. It is printed in full color and runs thirty-four pages, including not only the firm's complete line of archery and bowhunting equipment but tips on bowhunting and outfitting advice from Fred Bear, president of the firm.

On the product side, there is the story of the revolutionary new Bear Premier bowsight, which Bear says is the first bowsight ever engineered into the construction of a bow. The catalog is available by writing to Bear Archery Company, RR1, Grayling, Michigan.

NORTHWEST MONEY SHOOT

Burien Archery Lanes has scheduled its annual Pacific Northwest Indoor Championship shoot April 25-26, it was just announced. The shoot, featuring \$1,000 in cash prizes and trophies, has been one of the leading contests in past

will be shot by experienced archers. while the Stamps round will be held for new archers.

were shot by Marcy Bangert of Salem, Oregon, and Gene Criss of

registration blanks write to Burien

Los Alamos, New Mexico, have been selected to host the annual NFAA Sectional Tournament, according to Dick Phillips, Southwestern Representative.

It has been announced that this tournament, a forerunner of the National Field Archery event, will be held at Los Alamos on June 21-22, but at this writing, details have not yet been ironed out. Further announcements will be forthcoming.

The Denver and Frisco rounds

Last year's championship scores Yakima, Washington.

For further information and Archery Lanes, 15701 Ambaum Blvd., Seattle 66, Washington.

NEW MEXICO TOURNEY

The Pajarito Field Archers of

HUNTING WITH KITTREDGE (Continued from page 6)

Bowfishing line is a good grade of 60 to 100-pound test nylon fish line. This may be bought in small amounts from most archery supply houses or in bulk from fishing stores. A length of 75 to 100 feet is the usual length used. It is wise to carry an extra length of line so unexpected breakage will not put an end to your trip. Extra arrows, heads and shafts are another sound investment.

Setting up your fishing equipment is determined by the type of fish you are hunting. With smaller fish that cannot fight back too strenuously the strength of line, method of attaching to arrow and reel are not too important, but with large fish such as shark, it is not wise to underestimate what will happen when one of these finny critters finds himself restrained by the pull of a fish line and they sometimes become real provoked when the fish head first tickles their sides. There is no question about who has the greater strength when it comes to a tug of war involving your equipment on one end of the line and the fish on the other. With such fish the line is never fastened to your reel or bow. The usual procedure is to either fasten direct to a stout fishing rod so the fish can be played in the normal manner after the shot is made, or it is fastened to a closed five gallon can which is tossed into the water upon hitting the fish. A fish working against the pull of a can will soon wear itself out and can then be brought up to the side of the boat and gaffed. The fishing rod arrangement can afford more fishing fun than you've ever seen before, but the can situation will provide more shooting at fish.

A four foot length of seventy-five pound wire leader fastened between the arrow and the line will prevent the rough skin or sharp teeth of a fish cutting you off just at the wrong moment. The use of a large snap swivel to each end of the leader makes it easy to snap on new arrows or leaders in a hurry . . . also is a great help in removing arrow and line from a caught fish.

Aim your shots just below where the fish appears to be. Refraction bending of light in the water distorts how the fish seems to be and makes him appear farther out than he really is. The deeper down in the water the fish is, the more below him you must shoot. A little practice and you'll

Shark is normally hunted from a boat using a trailing sack of blood meal to attract their attention. A supply of anchovies comes in handy after the shark is located to entice him close into shooting range. Once a shark or two have been hit, the fish blood in the water will bring on enough of their friends to provide shooting for some time to come.

Carp are best hunted during the spring spawning months when the weather turns warm. The fish come up from the deep water into the shallows where they are often found just basking along the surface. Hunting can be from the bank of a canal or by wading a shallow slough and stalking them as you would any form of game. The carp can be frustratingly wary and the successful hunter must take care. Warm sunny days will bring best results.

So with rough fish to be found in the back waters of most states, unlimber that bow and treat yourself to a big helping of bowfisherman's fun!

There's an old trappers recipe I heard about some years back that converts the lowly carp into a real taste treat . . . instead of throwing that fish away, why not give this dish a try during your next bowfishing trip?

Cut a four pound cleaned carp into serving pieces. Sprinkle the pieces with a tablespoon of salt and set aside for thirty minutes or so. Place the fish in a stew pot with three cups of beer, two onions finely chopped, one bay leaf, six whole pepercorns, and one sliced lemon.

Put the pan over the fire, bring to a boil, and simmer gently for 15 to 20 minutes or until the fish is tender. Re move the fish to a heated platter. Blend one tablespoon but ter with one tablespoon flour, and add to the fish broth along with one tablespoon of sugar. Continue to cook up the broth for a few minutes, stirring constantly. Strain the broth through clear cheese cloth, old deer bag, or a strainer and pour the strained sauce over the waiting fish. Serve piping hot with huge chunks of crusty bread.

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ment, beautiful at it is accurate, funters knock down game at 200 ft. Two-way sights—open and peep—windage and elevation. Anyone can target-shoot right in backyard. Harpoon fish with free line attachment. 34" hardwood stock, 33" bow. Handsome den display. Possession legal in all states Money back if not completely satisfied. Target arrows 80c ea. Hunting and fishing arrows \$1.25 ea. Send to: WHAM-O MFG. CO., Box 20 , San Gabriel, Calif. 91778

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Dyed Barred No.	2	12.9	M0	11.90M
DIE CUTS	3"			51/4"
	100	1000	100	1000
Grey Barred	\$1.50	\$ 9.90	\$2,50	\$13.90
Dyed Barred	1.70	10.90	2.90	14.90
White	2.25	13.90	3.50	19.90
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329 Papago Dr., Tempe, Ariz. (945-0909)

MAIL POUCH

(Continued from page 4)

made, but it comes to mind that the World's Fair will be in progress at this time and many archers from other states will be visiting this area.

We feel that an opportunity to enter a qualified NAA tournament only fifteen miles from the fair sight might be enjoyable. There will be pre-registration forms available for anyone who wishes to enter. They need only write to:

ATA, c/o John L. Moore, 1838 Casper Avenue, East Meadow, L.I., N.Y.

VARMINT CALLER

I would like to commend you on your wonderful magazine. I have just read my first two issues and think it is great, especially your article in the Nov.-Dec. issue on fox hunting.

I sent to Burnham Brothers for a fox call, took it out without any instruction and called a big red within twenty feet on the first day. I think their calls are as good as any on the market.

By the way, I didn't get a shot at the fox. I was sitting on a stump in plain sight with my bow lying on the ground beside me, my arrows, too. I didn't think the call would work but now I'm a believer.

> L. Benson, Wellston, Ohio

TECHNICAL SIDE

In the Nov.-Dec. issue, Hal Hasenbeck wrote Arrow Speed Versus Bow Weight. This method of measuring arrow velocity is a practical one, I believe, if the process is carried through carefully. It is also useful, because of the simplicity of the equipment and its low cost.

More information of this kind

More information of this kind would be helpful in improving archer equipment. Since he has access to an electronic timer, why would not it be useful for Mr. Hasenbeck to make a careful comparative test between the target drop method and the electronic timer? By this means, the pitfalls in the drop method could be identified and cautioned against. To make the solenoid sharp in release, the exciting current should be suddenly broken with a wide gap between contacts so no drawn out arcing would occur.

W. F. Borgerd, Evansville, Indiana

GATER FANCIER?

Before reading your article on "Gator Grabbin'," (B&A, March-April 64 issue), I thought BOW & ARROW was a high class magazine. All I have to do now is read another article on shooting snapping turtles or some other equally asinine pastime to start me on slingshots.

Bruce J. Morgan, Rockville, Maryland



"We'll gradually work down to an apple on your head."

QUOTABLE QUOTES

Your first issue I enjoyed very much and went over it so often, I can almost quote it word for word. Your new issue appears just as fine.

Glen R. Streicher, Los Angeles, Calif.

PUBLICITY TIPS

Going to Watkins Glenn for the National Field Archery Tournament? Concerned about publicity back home? Well, so are your local and state news media. They depend upon you to provide local news, and this is where you can be of service regarding the tournament.

Let me assure you that you need not be an accomplished writer. News media provides rewrite men to handle the actual writing job. Your chore is merely to get the information to them.

As to procedure, let me illustrate by my own past experience: I checked around and found who in my state was planning to participate at the National, then noted who, in my opinion or other opinions, might place well in the final standings. I paid a visit to the sports editors, who I informed that I was going to attend the NFAA tournament and listed those to participate from our area. I then asked if I could represent the media as a special correspondent to cover local

This agreed upon, I requested a not to present at headquarters at the tournament sight. At the tournament, an area is set aside for the publicity department. Upon presenting my credentials, I was allowed to copy names and addresses of all from my home state participating.

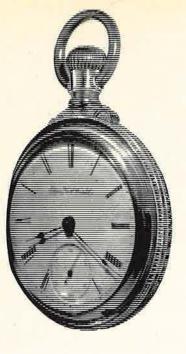
I enlisted help of some of the archers from my state, and wrote a paragraph pointing out which of our archers were doing well and then, in order, wrote each archer's name and hometown, his scores and placement in the standings. Then I posted a night letter (at Press Rates Collect) to the newspaper and television station with which I had made arrangements. In all, I spent 1½ hours per day.

The resulting stories covering the tournament turned into columns of copy with nice headlines. After it was over, the sports editors informed me they received thank you letters from archers in appreciation of the coverage given the tournament.

Any further questions will be answered by writing to me:
W. J. Bohr.

1011 Racine Avenue, Waukesha, Wisconsin ("Chum" Bohr, has been designated as publicity director for the 1964 NFAA Tournament to be held

at Watkins Glen, New York.)



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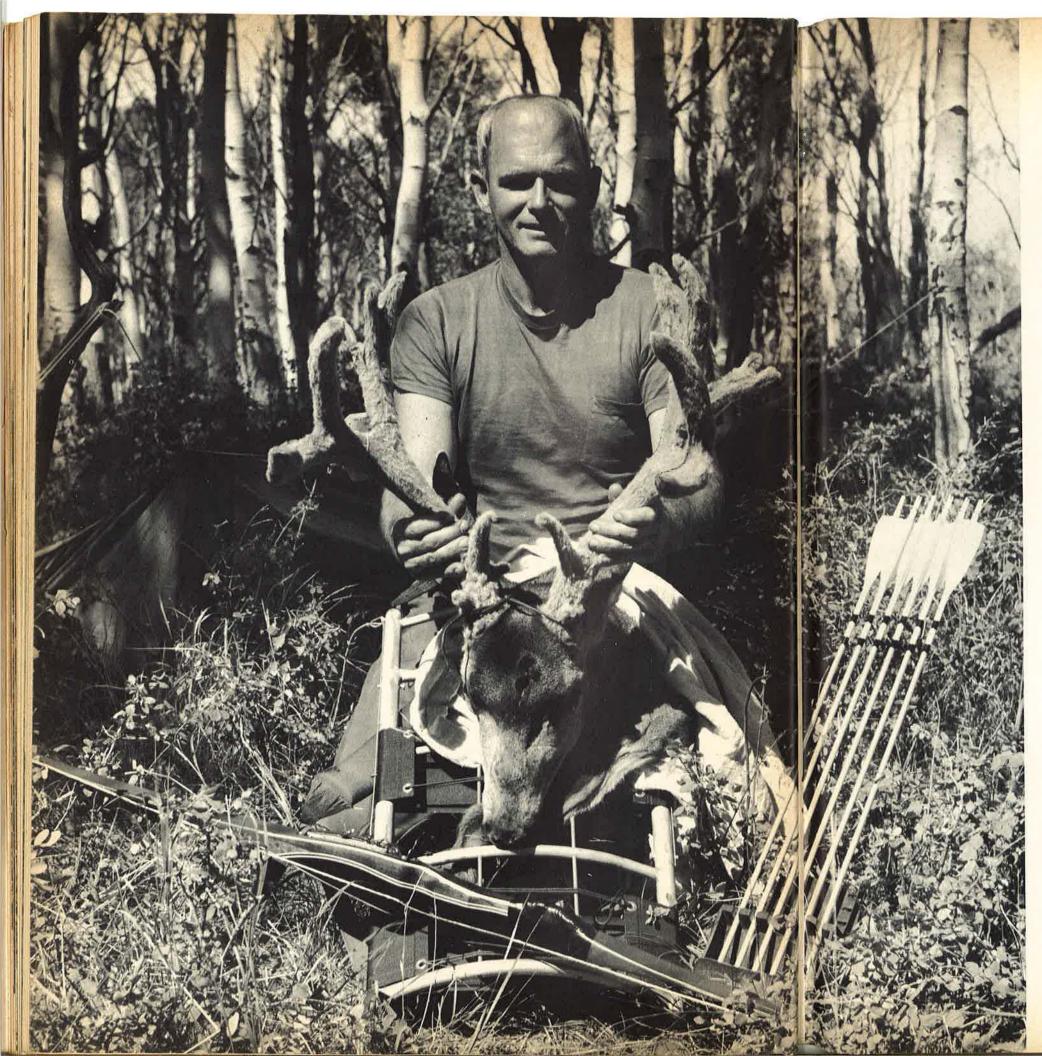


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JACK
HOWARD
HAS
TAKEN
FORTY
BIG
BUCKS.
HERE
IS
HIS
FORMULA
FOR
SUCCESS...

(1) PLANNING (2) PATIENCE

By Jack Lewis

URING one of those post-midnight sessions when the final work is being done on an issue of BOW & ARROW, the subject got around to bowhunting, and what one should do to assure himself that he is not likely to be blanked when the season opens.

There are varying statistics, of course, as to the number of bowhunters who actually come home with a deer; the one that sticks in my mind is three percent. But at the other extreme, there are those who invariably come home with venison for the pot and make it seem so effortless.

"So what do these people do?" a staff member wanted to know. "How do they prepare themselves? What plans do they make to assure success?"

Everyone on the staff had his theory, and no

two of them matched up. Besides, it's difficult indeed to do an article on untried theory. The best angle, we figured, was to find someone who had put his own theories into practice and had the trophies on the wall and meat in the locker to back them up.

That's how we ended up, camped on Jack Howard's sofa one evening, eyeing his record elk, picking his brain for information that could prove beneficial to BOW & ARROW readers.

Howard has been a bowhunter since 1945, when he bagged his first big buck with a bow of his own design and manufacture. That was eighteen years back, and he's been making bows commercially for the past decade and a half. In that period, he has brought home some forty deer, not to mention the huge elk he downed a couple of years back in Colorado.

"With me, deer hunting is an obsession," he admits a bit wryly. "In addition to meat, I'm a trophy hunter, always looking for a buck that's bigger and better. As a result, I never really quit planning. As soon as one season is done, I'm busy thinking about the mistakes I made and devising ways of not repeating them the coming year."

But Howard is a firm believer in the idea that putting an arrow into a buck is more than simple luck; it doesn't just happen. Instead, it requires a good deal of study and preparation.

"Everyone has his own ideas as to the type of archery equipment he should use," Howard allows,

One of the world's most respected deer hunter's, Jack Howard, proudly displays 227 pounds of trophy. How he gets the big boys is explained in text. In background is lightweight vinyl shelter.



Reading will never replace practical experience, but books can be helpful to the novice before starting hunt.



The game can see better than you, so a good pair of binoculars will boost your percentages. Howard will spend days selecting and observing his intended trophy before making the actual, and painstaking, stalk.

"but not everyone who goes after a buck thinks in terms of comfort and the efficiency that this can mean."

For example, during a recent hunt in Utah for which he had to back pack into the wilds, Howard had some pretty unlikely supplies, but they added materially to his personal comfort at the end of each long day of hunting.

For example, he carried dacron underwear; a specially built 1½-pound sleeping bag; a quart of water, a thin vinyl plastic tube that could be used either as a tent or simply as a ground covering and an array of dehydrated foods. Also included were a lightweight plastic raincoat, a cheesecloth deer bag, snake bite kit, wrist alarm watch, small flashlight with spare batteries and bulb, compass, knife, water-proof match case, nylon cord, small cook set, and a small grill of steel tubing weighing only 3½ ounces.

"And when I'm in a fire hazard area, I carry two small cans of canned heat for fuel," he adds in totaling up his equipment.

Admittedly, this equipment doesn't add up to the facilities of the Ritz, but it allows for warm, dry sleeping and good eating. For example, on his Utah trip for a big buck, Howard spotted the critter the night before at something like a thousand yards, but knew it was too late to go after him.

Instead, he waited till morning, then got a good breakfast under his belt before setting off to stalk the buck. He doesn't believe in hunting on an empty stomach no matter how great his excitement. That energy derived from breakfast may be needed either in the chase or in holding that bow steady for that telling shot.

Once Howard was on the track of the big buck, it started to rain. Instead of charging around through wet underbrush, possibly tipping the deer to his presence, he simply unslung his small plastic tent, set it

His bow and hunting quiver are manufactured by himself. Aluminum arrows were used to take the buck shown at right near Nevada's Jarbridge area. Tennis shoes were worn during the final phase of the stalk.

up and waited out the rain. When the shower was over, he took up the hunt again, but meantime had had an opportunity to study the habits of the big buck he had selected. The animal grazed alone at night, but was with three others during the day.

Before it was over, Jack Howard had followed the deer for several days, observing him, but when the day finally came that he was within 125 yards, he began to stalk the buck. He finally slipped off his shoes, creeping to within sixty yards of the creature in his stocking feet. It may be hard on socks, but it prevents the possibility of a leather heel resounding on a rock or log, frightening the game further into the back country.

"I had to fight down the impulse to shoot from that range," he recalls, "and I ended up stalking him the next fifteen yards on my belly, being careful to keep my bow from catching on brush or banging against rocks." When at only forty-five yards, with the animal grazing broadside to him, he loosed his arrow. At that moment, the buck spooked, snorting at him, but it was too late. The arrow was already into his lungs.

For this shot, he used a modified three-bladed head with Schick injector razor blades cemented on, leaving a 1½-inch hole in its wake through flesh. His arrows were Easton 24 SRT-X and the bow was his own Howard Gamemaster.

Howard is admittedly a lone hunter and would much rather pack into the back country by himself than participate in one of the more socially acceptable gang hunts which some hunters favor. He rightfully contends that there is a better chance of coming out with game, too.

In 1962, when he went into the Colorado mountains for his elk, he was alone, packing much the same supplies that were listed earlier. Patience, of course, is one of his chief virtues and in this case, he climbed mountains for three days before he finally spotted the trophy he wanted. At the time, he was perched on a rocky out-cropping, glassing the area with binoculars, which he feels are a necessity for this type of hunting.

There was an advantage in this situation, for winter had come early and the weather was well below freezing, the ground covered by snow.

Howard stuck to his vantage point for three more days, studying the habits of the huge elk he had selected as his personal trophy.

"I wanted to know all about him," he recalls. "Where he bedded down. Where he moved to feed and when; what trails he took. All of this was important

If I was to determine the best way of approaching him for a killing shot."

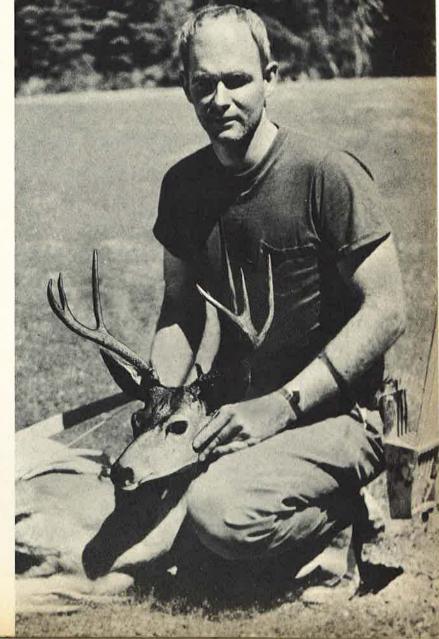
Although this was his first elk hunt, Howard soon learned a great deal about these animals, observing the herd of which the big buck was the leader.

"It was like clockwork," he reveals. "They would come out of the thick timber and begin feeding at dark, then at dawn, they'd move back into the timber.

"But elk, I found, are not like deer. The latter will usually follow the same path, coming within a few yards of the same spot time after time. Elk, though, seldom travel exactly the same trail, and may vary their route as much as two hundred yards. This made it difficult to figure a position for a plan of attack."

It snowed heavily during the night, growing colder, and by now this Southern Californian was suffering, but he had his heart set on that elk bull. The next morning, he dug his way out of his shelter and found that the elk were dangerously close, requiring extreme quiet if he was not to spook them.





"I had hoped to build a blind and wait this buck out," Howard says, "but noting his variations in travel had ruled that out. Meantime, I had been devising another plan."

There was a narrow belt of pines between the heavy timber and the open feeding ground, and Howard had come to realize that if he was to get the trophy animal, it was going to have to be in these pines. There was no cover in the feeding area. One advantage was the fact that he knew the precise time at which the bull would be coming out of the heavy timber.

By now, Howard had been in the area for eight days, and as evening approached, he slipped into the pines and began stalking. He first came across six cows and a young bull, letting them pass within twenty yards.

The elk paused to graze and Howard was unable to move without spooking them. He had spotted his trophy more than a hundred yards away, but by the time he again could continue stalking, it was too dark for a sure shot.

The next morning, he was back in the trees at daybreak, waiting for the animals to return to their cover. He was within thirty-five yards or so of several cows, when he saw the herd bull coming through the trees. He couldn't move without spooking the entire group, so there was nothing to do but wait it out, while this local monarch grazed nonchalantly toward him.

Finally, the bull was within thirty-five yards, presenting a perfect broadside target. But there were problems.

Howard had been in a cramped position for so long that when he drew back on the bowstring, he was unable to hold on his slowly moving target. He slowly relaxed, then tried it again, as the bull was moving away. Again, he was unable to hold his point of aim.

"I don't know what thoughts were flitting around in my head, but whatever they were, they took my mind off my draw for a moment and it steadied down." But the bull was nearly seventy yards away, when he released the arrow. The animal was just disappearing into the timber and he was unable to follow the flight of the arrow, but heard the immediate stampede. Moments later, he found a single drop of blood.

Howard waited three hours before taking up the trail of his wounded elk. He was expecting a long tracking session, but found the animal dead less than a hundred yards from the point where it had been hit.

He had to hike back down the mountain and borrow a horse to pack out this trophy, which now holds an honored spot in his den.

Jack Howard took his fortieth deer last fall, again in the Utah wilds, and again he used his technique of finding a vantage point from which to watch the movements of the animals, learning where they grazed and where they bedded down. Utilizing the gift of patience, he watched for three days, picking out a pair of likely looking bucks, then decided to build a blind close to their daily path.

Howard feels that fear among deer is easily transmitted and recalls one instance in which he observed some 250 deer in a small area. However, in starting to hunt in the evening, he spooked three of them. The following day, there were few deer at all in the area. Those that remained, changed their habits.

Therefore, this building of blinds must be accomplished quietly. Howard, as is his practice, had spent three days in observing this area before the deer season even opened. He accomplished the blind without incident, but on the opening day was on the point of taking his buck, when it was suddenly spooked and ran. Two hunters appeared down the trail, and it was not long before there were more than a hundred in the area. Needless to say, there were few if any deer.

Howard moved on into the back country and away from the other hunters. Here, he spotted a huge buck, but waited until early morning for him to start back to his bedding ground. This, again, was after lengthy observation of the animal's habits.

Finally, Howard got a shot at him at about fifty yards. The buck lowered his head and caught the arrow at the base of the antlers, which knocked him down, but it was a long chase and several more arrows before



One basic fact that is often forgotten, is to go where the game is — and people aren't. Sometimes this makes for tough going, particularly when packing out your trophy.

Although Howard believes it is best to hunt alone, in the last couple of years he has invited top hunters like Doug Kittredge to join him in field.



he was down to his last arrow and loosed it through thin brush for the killing shot. This buck had sixteen points!

What does all of this mean? What can you do now to insure your success in bowhunting for your deer this Fall?

First, choose the area where you plan to hunt if it is within driving distance. Check it out for deer population and attempt to determine whether that trophy buck is there. Observe the pattern of daily routine. This can change, of course, and you'll do well to check again before you actually begin hunting.

A tip that may help the beginning deer hunter is one which Howard has found useful.

When he builds a blind, he then paces off various distances, using rocks or other natural landmarks as reference points. He then knows the various ranges to the likely routes of approach.

Then, he may sprinkle deer lure at these points

so that when his deer comes along, it will stop in the immediate vicinity of one of the landmarks for which the range has been pre-determined. With the twang of a bowstring, there's invariably venison in the pot.

But such observation may help you to develop the patience you will need when the season opens and you're tempted to take that first shot that you know is not going to bring a kill.

Learn stealth in the woods and make a point of studying terrain to select vantage points from which to launch a stalk or for building a blind.

And if you learn to stalk with your shoes off, it won't hurt a thing. It's no guarantee, of course, but you can learn from the experience of others such as Jack Howard, a hunter's hunter.

This giant wapiti was taken in the Colorado mountains with a single shot at seventy yards. Photo was taken by hunter who used timer on his camera.



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books for bowmen

RECREATION TRAVEL GUIDE, 1963-64 Edition, published by Recreation Associates, 15 W. 44th Street, New York 36, New York; \$1.50; 220 pp. This little volume attempts to be all things to all men, but can be of use to either the gun or bowhunter, since it goes to great length to list vital hunting areas, and outlines annual events that are of interest to shooters of all types.

Actually, it concentrates exclusively upon nine states: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. Although the book is broken down by state, in each instance, it lists the hunting seasons for each type of game, and what types of weaponry are allowed. Included in this conglomeration of information, too, is a rundown on current hunting regulalations, bag limits and the costs of licenses to resident and out-of-staters. And if that isn't enough, the current liquor laws for each state are included, too!

Each state also has a map devoted and keyed to hunting. This sketch shows what areas are considered best and what types of game are most easily found in those sections. And tidbits of information offered here can be of great value to non-residents. For example, it explains that in Sullivan County, New York, there is the annual Sullivan County Deer Hunt and Archery Meet with over 5,000 acres open to registered guests.

In short, it's a book you can use if you live in the area or plan to visit it for some plain and fancy hunting—MH.

THE OUTDOOR COOK'S BIBLE, by Joseph D. Bates, Jr., 212 pp., \$1.95, published by Doubleday & Company. Bates has drawn upon his years of experience as an outdoor product marketing consultant to produce this book of original recipes with illustrations by Jack Murray and additional photographs. The author's goal was to produce something for easy use for the non-gourmet oriented outdoor cook and he fulfilled that requirement easily.

Following his premise that "outdoor cooking . . . is a hobby and an expedient . . . not a profession," he offers recipes for camp cooking that a left-handed ten-year-old could follow. Of course, Prudence Penny might scream over such editorial asides as, "a little too much or too little sugar, flour, or milk . . usually makes no difference," but the author has allowed for common sense and the practical demands of individual taste buds.

What the hunter needs in the way of information about camp cooking equipment and its uses must be culled from the variety of information on outdoor cooking in general. Bates has provided many pages on types of outdoor barbequing equipment and many recipes calling for more ingredients than the average man would want to load in his knapsack.

However, the search is valuable, for the recipes are efficient and mouthwatering. Not every hunter will take the time for Baked Minted Fillets of Trout but Baked Trout on a Rock is a natural and the cooking utensil — the rock — also becomes the plate.

For those interested in more complex forms of outdoor cooking, Bates has many recipes which come close to being beyond the pale of the man who has only a dishwiping acquaintance with the kitchen. The saving grace is that the presentation and directions are so easily followed. Many cook books demand a great deal of sophistication on the part of the cook, and many important details for a beginner are left out as being unimportant. Bates has taken care to avoid this and gives explicit directions for things as simple as the best way to broil a steak.

Everything from soup to nuts—from how to build efficient cooking fires to foods on the flaming sword and recipes for easy camp desserts is contained in this book which will be appreciated not only by the hunter but by the not so field-minded gent with an interest in cooking.—D.J.M.

ARCHERY CHAMPIONS - 4

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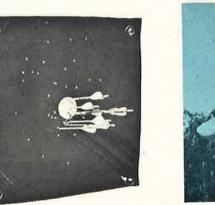
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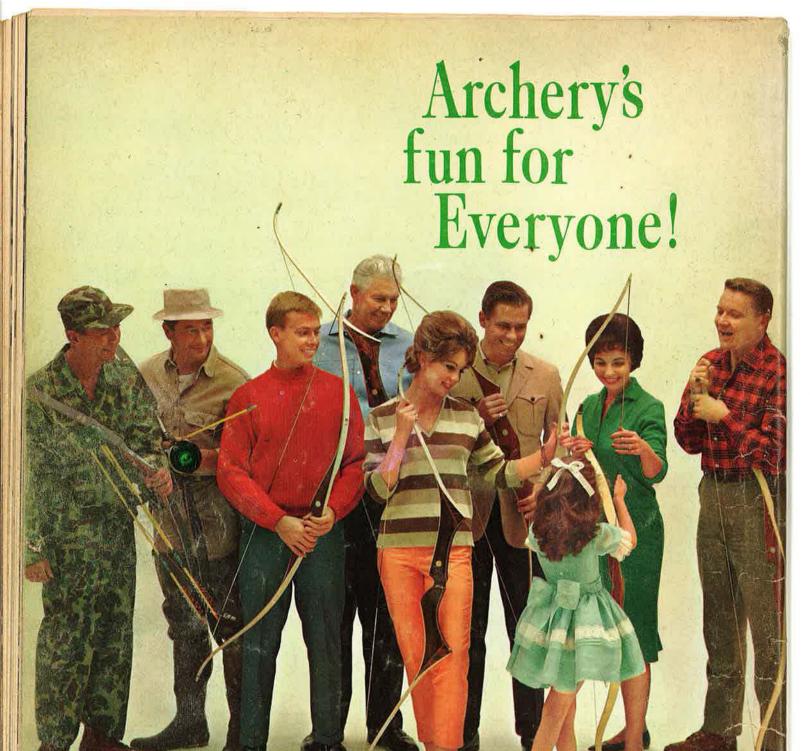


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