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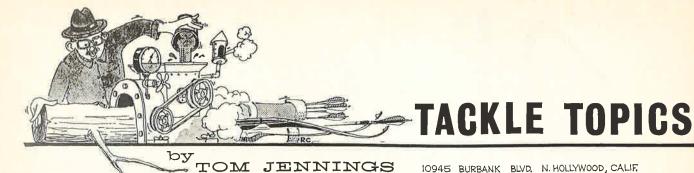
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CROSSBOW WARNING

Dear Mr. Jennings:

Before I start asking questions I'd like to say that between your column and the Archery Clinic I have learned very much which has helped me considerably in my shooting.

Question #1. When making a laminated bow is there any certain direction in which the grain should go in a core lamination? Question #2. In January there was an article started called "The Construction of a Modern Crossbow". I read this article and decided to build one. I would like to know where I could get a car spring to fit the dimensions. I could not find one of the right thickness. I have looked almost everywhere. I would also like to know where I could get hold of some Bakelite for the butt

Question #3. Recently I started to use a new grip, the straight arm grip. When the bow is strung and the string is held stationary, the riser section flexes freely up and down. I built up the handle on my bow so that there is a downward pressure on the handle. Does this have any effect on the nocking point at full draw?

Question #4. I shoot free style and use a metric sight and anchor under my chin and have the sight out as far as it will go but I still shoot about eight inches to the left at twenty yards. When the string is center on the limbs it also comes flush with the bow shelf (there is no space). I have a draw of 311/9" into the bow and use a 66" bow. 28 pounds at 28" of draw. Could you please give me some advice on this situation?

Question #5. Should a nocking point be put on a brand new string right away or should it be stretched by shooting and then put on?

Question #6. I recently bought a set of Bear Easton aluminum 31" long arrows with four plastic vanes.

I tried to use these on my bow using a feather rest. This didn't work so I tried a Hoyt standard flex rest and a Hoyt pro flex rest but these did not work either. I also tried a Brush rest placed vertically instead of horizontally. This didn't work. The arrows are properly fitted. Could you give me any help with this?

Thank you for any help you can supply. I appreciate it very much and will be looking forward to seeing your answers in TAM and Archery World,

Sincerely yours, Gregory Sobole Euclid 23, Ohio

Dear Gregory:

Answer to question #1. Most bow builders agree that edge grained laminations are superior in the construction of a laminated bow. Answer to question #2. Frankly, Gregory, I do not advise using a car spring to make a bow for a Crossbow. At the very best this is an extremely dangerous thing. Steel has a tendency to crystallize upon flexing a given number of times such as a bow has to stand. Regardless of the quality of the steel it is eventually going to snap. When this happens, you are likely to wipe out your teeth in one swoop. This may sound a little gruesome but it has happened and can happen again.

I would suggest that you spend a little money and build a laminated bow for your Crossbow. If you cannot do this, have some local bow maker do it for you. Laminated glass faced and backed bows are much safer. Bakelite used to be used in radio bases but I doubt if it is used any more. So many exotic plastics have come along since Bakelite that you have a very wide range in choice at any plastic sup-

Answer to #3. Yes, downward pressure on the handle will definitely have effect on your nocking

point. By applying more pressure at the lower part of the handle such as when you heel a bow when using a bent wrist hold, you will bend the lower limb sharper and hasten the recovery quicker on release. When you speed up the lower limb recovery, it will require a higher nocking point. Frankly, I do not advise building the handle up into your hand when you use the high wrist method. The whole idea of holding a bow in this method is to narrow the pressure point on the handle to eliminate the very problem of unnecessary pressure on either the lower limb or the upper limb. You defeat your purpose when you build the handle up under your thumb.

Answer to #4. If everything is correct, your sight should be very nearly directly over your arrow point when shooting. You say that you have correctly spined arrows but you did not mention what you were shooting. People with very long draws, such as yours, experience more difficulty in arrow flight. For you, I would suggest 2013's. Frankly, I believe that the 66" bow is a little short for your 311/9" draw. If you were lining your string correctly and your arrows are correct and you are releasing correctly, the only thing left would be that your bow is not centershot enough. Try removing any arrow pads.

Answer to question #5. You should "shoot in" a string before installing the nocking point. Answer to question #6. Shooting plastic vanes is rather difficult and, frankly, there are very few people who can shoot them without occasionally hitting a vane. It requires a delicate combination of abilities.

The position of your hand on the bow handle is extremely important. You cannot heel the bow or turn your wrist in to the bow or you will crack vanes on the front

(Continued on Page 4)

A MONTHLY COLUMN HELPING ARCHERS HELP THEMSELVES



TACKLE TOPICS

(Continued from Page 2) of the arrow sight window. You must have just the right amount of centershot, your arrows must be perfect, and your arrow rest should be of a solid type, only a fraction of an inch wider than half the diameter of your shafts.

Disappearing rests or feather rests or brush rests will not work unless your arrow is passing the bow correctly. Actually, the back of the arrow is far enough away from the sight window to clear any solid rest of the correct width. This is something that I could not iron out for you two thousand miles away. Try to locate some combetent coach who could help you with this.

YOU MADE ME MAD

Dear Tom:

You finally made me mad with your constant, unjust remarks against the Longbow. Your answer in Tackle Topics, April TAM, is WRONG. I shoot a 70 pound Tembo, bamboo and fibreglass, duplicate to Bob Swinehart's and made by Jim Darling. I challenge you to back up your statement, "The bamboo in the core has very

little to do with the quality of the performance of the bow.'

Make a bow physically the same as any of Jim Darling's Tembos, length, width, thickness, taper of limbs, etc., on any of the "modern" bow woods such as Hard Rock Maple and compare its performance. The fibreglass is the most modern component in the Tembo. but the bamboo is the superior performing wood to use. By the way, Bob proved himself and the Longbow in Africa. My hat is off to a fellow, a Howard Hill fan, and Tembo shooter. Enough of the bickering. TAM, for which you write, is one of the best archery magazines around. Sincerely.

Mike Hahn

Dear Mike:

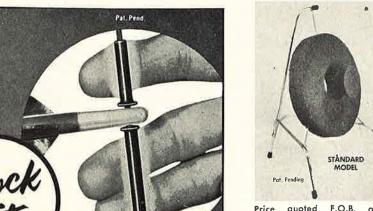
Glad to hear from you, Mike, I was beginning to think that I knew everything and was right about everything. You are the first dissenter I have had since writing for TAM.

Firstly, I do not understand what you mean by "modern" bow woods such as Rock Maple. Maple was used as a core wood by the Chinese, Mongolians and Turks

many hundreds of years ago. The Chinese were right square in the middle of the best bamboo available anywhere in the world and they did not use it in the core of their bows. Bamboo was easily available to the Turks and they were the finest bowyers in the world and made bows that exceeded anything that we have been able to produce today. Authenticated distance of 950 yards was shot by the Turks. They used a wood that is impossible to tell from Maple.

If I remember correctly, the statement in April TAM was not about a Howard Hill straight limbed designed bow. Anyway, it was not meant to be. In the case of the straight limbed bow, following Howard Hill's design, the bamboo is a superior wood to use. The bows are what you call a stacked bow and there is a tremendous amount of stress in the core itself, stacked meaning they are very thick in ratio to the width. No one will deny that bamboo is an extremely tough wood and has a high tensile and shear strength. In the Hill Longbow design, this is neces-

(Continued on Page 12)



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Number 8

AUGUST 1965



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ARTICLES ON ALL ARCHERY

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PETER L. STEVENSON, Managing Editor SHERWOOD SCHOCH, Advertising and Circulation Director

HOMER R. WAMBOLD, Outdoor Editor WILLIAM STUMP, NAA Editor

THE COVER
Wouldn't you know it? The little lady gets to go along bowhunting and when she sees her big buck all can do is admire it. And all the while hubby is out trying to locate a trophy.

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ABOUT AN AUTHOR

You will find a thoughtful article, "My Favorite Hunting Partner," in this issue and its theme is the theme of this month's issue.

Favorite Hunting Partner," in this issue and its theme is the theme of this month's issue. We believe more emphasis should be placed on women's part in the sport of archery. The article, by Lonnie Emerick, thoughtfully underlines the theme. He has written a number of times in the past for this magazine and we think this article is one of his best. Here's what he has to say: "One summer while vacationing in Michigan's water-winter wonderland, we chanced to take a visit to the Bear Archery Factory in Grayling. So impressed were we that we ordered southpaw fiberglass recurves, bought a supply of arrows and haunted the campus archery range. (He is in the Department of Speech, Speech and Hearing Clinic, Moorhead State College, Moorhead, Minn.) My work as a college professor . . . I teach students how to help children and adults overcome speech defects . . brought us to the edge of the long grass prairie in western Minnesota. Here we started a brand new program in speech therapy . . and haunted the sparsely wooded river bottoms for whitetail deer. This next year we will be at Northern Michigan University, Marquette, Mich. Here the giant white pines march up from the rocky shores of the Big Sea Water, here tumbling trout streams wind through dense forest primeval and here we shall stalk the wily whitetail with antlers. Incidently, as the photograph reveals, we two, Lynn and me, are now four. The littlest win archers, Lynnie and Mary, surprised doctor, mother and author Dad by making their appearance. Talk about Power Archery!"

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LATHAN GARNETT, Hot Springs, Arkansas, 1964 runner-up in BIG BUCK CONTEST.

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antler at the base	′′		
b. Length of main beam around outside			
c. Spread at widest point			
d. Number of points (must l	be over 1	inch	c ———
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August, 1965

ARCHERY

By Jack Witt

CLINIC

Problem: CONCENTRATION

THIS is a subject in shooting that we continually get back to in conversations. In the past I have quoted a number of champions and their thoughts on how to concentrate in tournament shooting. But to tell someone how to concentrate is like telling one how to relax.

Before going into this concept on concentration I should like to point out that this is not for the beginner. I say this in that the basic fundamentals of good shooting technique have to be firmly established before any degree of concentration can be of help.

Sometime back I met a man who traveled extensively in India. During the course of our conversation he told me of the religious men in India. These are called Fakirs, which can be any Hindu ascetic. Some of the things that these Fakirs do are inexplainable, while others, claiming to be religious, are to the people merely beggars. But some of these religious men have a great deal of influence over large masses of Hindus.

This man went on to say that most of the Fakirs practice Yoga to some degree. Yoga is a Hindu philosophy, mystic and ascetic. This philosophy teaches to establish identity of concentration with the object of concentration. This, I'm sure, sounds a bit confusing; but this man went on to say, in explanation, that basically, Yoga is that the mind cannot think of but one thing at a time. So if a person can concentrate hard on one object, then nothing else can clutter his mind. For example he said: "Take the Fakir who walks on hot coals or will lie down on a bed of nails. If these men concentrate hard enough on some one object,

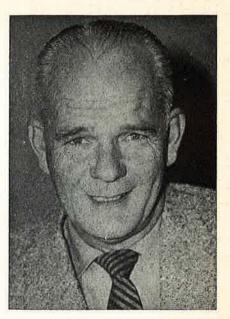
then they reason, how can they feel pain if they do not think of the pain?"

You may ask, "How can this have anything to do with concentrating on shooting?" It can have everyhing to do with it. I firmly believe that to varying degrees this same philosophy has been used. In most instances I doubt very seriously that the person realized what process, or philosophy shall we say, he was using

When Ben Hogan was at his prime in golf, winning almost every tournament he entered, he was given the nickname of "The Wee Iceman". This was given to him in Scotland when he won the British Open, the reason being that Hogan had no nerves. Some said he had icewater in his veins, but there has been no other golfer who has attained the high degree of concentration that Hogan attained. Hogan admitted that many times he didn't remember seeing a soul on the golf course during a big tournament, when actually there were as many as 20,000 people milling over the course.

I remember speaking to Bob Kadlec at the FITA trials once. Bob not only didn't hear me, he didn't even see me and I was only three feet from him. A few minutes later Bob turned and saw me and was quite surprised. He was concentrating so hard that he didn't realize anyone else was there.

Jack Clark actually teaches this philosophy to his wife, Ann, and to his daughter, Debbie. I can see Jack's expression when he reads this. "Do you mean that I teach Yoga?", he will say. I mean that Jack teaches this same philosophy of concentration. Jack has both



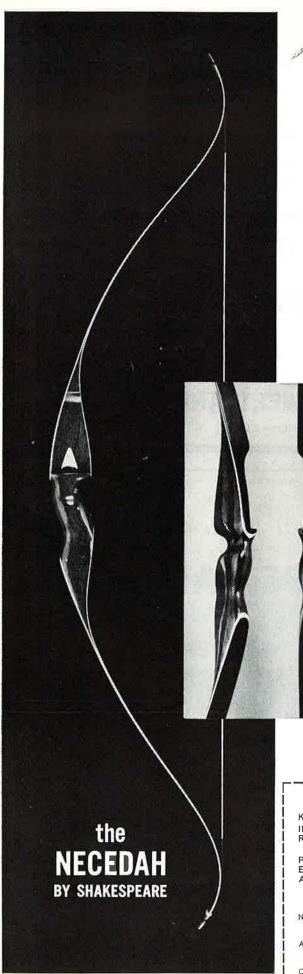
Ann and Debbie practice aiming. They never go out and practice shooting. Jack says they know how to shoot. They know the basic fundamentals of good shooting. All he wants them to do is practice aiming, concentrating on the center of the center of the target. Know that they can put the sight on the center and hold it there for a slow count of seven. Isn't this the same thing as practice concentration?

T is said that by concentrating very hard on one object that everything else is blanked out, that your mind can think of only one thing at a time. I have been told that this takes a great deal of practice. At first it is next to impossible to concentrate hard enough on one object more than a few seconds, but by practicing you eventually can hold this concentration for several minutes. In India this degree of concentration has been developed to the point that certain individuals can hold this concentration for several hours.

Rember a few years back when Jim Caspers was called "The Shooting Machine"? He was this. He set records on the Chicago Round as well as the York Round and I am one who believes that Jim had developed a very high degree of concentration that was responsible for this kind of shooting.

When archers like Charlie Sandlin and Bob Kadlec tell you it takes several weeks to prepare themselves mentally for a big tournament it is obvious that practiced concentration is the answer. Jim Ploen who

(Continued on Page 10)





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CONCENTRATION

(Continued from Page 8) won the last Ben Pearson Open said he had prepared himself mentally and felt that he could win the Open before he came to Detroit. Bill Bednar would never contradict the importance of practiced concentration as it is obvious that no one has worked harder on this one point than has Bednar.

Power in concentration!! Well, I believe that the next really great

archer of our time will develop his own system of practicing concentration. I believe it will be a form of Yoga.

By concentrating solely on getting the sight to stop in the center of the target and by thinking only of this one thing, another champion will be born. It will take work, hard work. When your mind wanders to "Why can't I get it to stop? I've got to get this shot in the center—Iam just two points behind

-I only have one more End to

Any one of these thoughts or similar ones have interrupted your concentration, so let down. Draw again and concentrate on the one thing-Get the sight to stop dead in the center. Remember, at first this high degree of concentration will only be for a second or two. But also remember that this same high degree of concentration has been held for hours.

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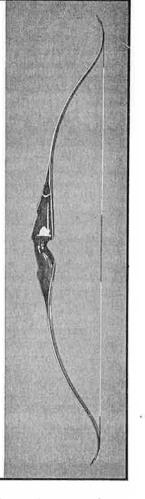
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TACKLE TOPICS

(Continued from Page 4)

You bet Bob Swinehart did archery proud. He is indeed a great credit to the sport, just as Howard Hill is. For a man's accomplishments in archery to be rated by the equipment that he uses is just as ridiculous as rating a gun hunter's ability by whether he shoots a Winchester or a Remington. I have proved with my shooting machine that all bows are capable of shooting better than any man behind them. I have broken nocks, arrow after arrow, with bows priced from \$5 to \$200. From straight ended to super-duper deflexed, reflexed, re-curved bows. Frankly, Mike, it's just the man behind the bow.

ABOUT GLOVES

Dear Tom Jennings: I really appreciate the expert advice you have given me in the past. I do have a few more questions concerning archery and would greatly appreciate your answering them. They are as follows. Number 1of the two shooting gloves "King" offers, the #227 and the #230, which is the better? Is the soft tip better than the cordovan tip or vice versa? Which is for hunting? Question 2-of the #425S and the #420S "King Quivers", which do you think is better for white tailed deer, hunting in the Pennsylvania area? Should this quiver be modified in any way for hunting? Question 3-do you feel that the "King" silent stalker has any disadvantages in brush country hunting? Which material arrow is the most humane for hunting whitetails? What would you use as a hunting rest? Thank you very much for your time and effort. I appreciate it greatly.

Sincerely yours, S. Blaskevitch University Park. Pa.

Dear Mr. Blaskevitch:

The difference between the 227 and the 230 is in the type of leather on the shooting tips. This is entirely a personal preference. I. personally, like the soft, form fitting type of leather. This glove requires no breaking in and is shootable from the first arrow that you shoot. In the case of the cordovan it is a very stiff leather and requires shooting before it stops feeling like you are shooting with a boxing glove on. Again I say, personal preference. Answer to question #2-the number 425S is what is known as a centerback (Continued Next Page)

TAM AND ARCHERY WORLD

TACKLE TOPICS

(Continued from Page 12)

quiver and the #420S is a side

back quiver. My personal prefer-

ence is the #420S in a side back and I remove the cross strap so that I can slip the quiver around under my left arm when I run into a lot of brush. The four strap harness in the #425S will not allow you to do this." Also, I have gotten used to reaching to the side for my arrows and would probably never be able to find an arrow in the centerback in a hurry when Old Beer Hall Rack was going over the horizon. Answer #3-anyway you slice it, to wade through a briar patch with a bow and a dozen arrows is no piece of cake. The only answer as to whether the silent stalker would have any disadvantages for you would be to give it a try. I think it's a fine quiver and many people swear by it. Answer to question #4-the most humane arrow material is the material attached to a broadhead in the dead center of a whitetail's heart. Answer to question #5-an arrow rest for hunting must be of a solid type. When you are hunting, you move through the woods with your left finger (if you are a right-handed shooter) resting over the nocked shaft and positioned for a quick draw. You cannot be using some soft horizontal feather or brush rest. These rests are strictly for target. The pile and vertical feather rests fasten directly to the arrow shelf of the bow and are fine. Many production factories supply rests of this type on their bows directly from the factory and these are fine for hunting.

SHAFT SELECTION

Dear Mr. Jennings:

I have a new Bear HC-30 and I am having problems selecting the proper shaft for it. Also, I am having trouble with the bottom vane on a four-fletch arrow chipping the front of the vane. The arrow rest I use is a magnetic one. Also the arrow rest is more forward of the belly of the bow. The bow is 35 pounds at 28". Question #1-is the bow weight measured from the "back" of the bow or at the arrow rest? If the bow is measured from the back and I pull the 28" arrow point all the way to the middle of the arrow rest, then that means I must be pulling 21/2 to 3 pounds more than the bow says it is. Ouestion #2-if this is so does it seem that my XX75-1816 would be too light in spine? I have been using vanes for two months and I have

made the bare shaft test as Mr.
Max Hamilton suggested but all of
THIS FREE*
CATALOG the adjustment in as far as I could but they still went to the right. I think this means my arrows are too stiff in spine but I don't think so. The vanes are getting little chips in the front of them just on the bottom vane only. Could this mean that the arrows are too light in spine and the fletching is hitting the bow? Question #4-can you tell me what the string height should be on HC-30? The factory says nothing on this line. Thank Norbert Specht Louisville, Kv.

As far as I know, Bear is still

measuring the draw length from

Dear Norbert:

the back of the bow. However, to be certain of this I would suggest that you write directly to Bear Archery Company, Grayling, Michigan and get the information straight from the horse's mouth. Answer to question #2-yes, if you are drawing the arrow at 28" from 1 to 11/2" inside of the back of the bow, you will be increasing the for this draw weight. Answerto question #3-I think that your ar- Supplies . Specialties rows are just right for your bow but your problem lies in your arrow rest. It is extremely difficult to get plastic vanes to clear your bow unless you do everything perfectly. On top of this, you must use a very narrow arrow rest. The rest should be of solid construction and just slightly wider than half the diameter of your 1816 arrows. In other words, your rest would be about 10/64 wide. It is difficult to keep an arrow on such a narrow rest but if you are going to clear your plastic vanes, you must practice until you can keep your arrows on such a rest. Answer to question #4-why Bear did not put recommended string height in his 1965 catalog is amystery. However, re-ferring to his 1964 catalog, he recommends 71/2" to 81/2" for the 63" and the 66" Tamerlane and 8" to 9" for the 69" Tamerlane. The HC-30 is actually the same limb design as the Tamerlane but has a special synthetic riser section. I think you would be safe in using the Tamerlane specs for brace height. This distance is measured from the inside of the handle at the lowest point right where your bow hand thumb rests on the bow.

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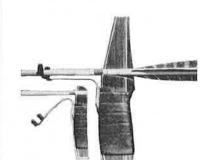
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TEEN MAIL TOURNAMENT

By BYRON LAHER TMT Tournament Director 12722 Woodmont Detroit 27, Mich. 48227

Having just spent eight wonderful days at Teela-Wooket, I am bursting with news and pictures of the camp. First we'll report the June Flint Round scores and then the

TWAC news.

Remember, since this is our first Flint Round, all of the winning scores will stand as T.M.T. records.

RESULTS OF JUNE FLINT ROUND

Instinctive

1. Bear Archery Shop-Michigan -Steve Cassells, 538; Paul Lewis, 464; Gayle Jamison, 416; Elayne Laher, 232–1650.

2. Rebel Sharpshooters-Oregon -Daryl Madura, 492; Mike Harris, 464; Tom Todd, 363; Mike Beene, 314-1633.

3. Side Winders-California-Cliff Ward, 154; Craig Bartlett, 151;

BOWHUNTER'S FESTIVAL SET FOR SEPT. 17

Each year, in September, a rural county in central Pennsylvania, Sullivan County, plays host to the greatest fun shoot of all, The Pennsylvania Bowhunter's Festival.

The hard working citzenry of the host county provides an archery program geared for the whole family, unmatched for versatility anywhere in the country. There are full size running deer, ground hog, rabbit and squirrel targets. There are static, three dimensional, full life size targets of bear, deer, racoons, turkeys.

During the course of the weekend eight wild Russian boars will be released in the hills adjoining the festival grounds. Hunters by the hundreds are posted along the sides of the undulating mountains waiting for their chance at a bow and arrow kill on a boar testing their nerve and skill.

They also conduct an animal calling contest, select a bowfestival queen, have live coon hunts each night and serve up 3000 bar-B-Q'd chicken dinners.

To fill the hole between shooting and to give the archers a rest period, they have camping demonstrations, spotlight tours, club contests, square dances, bowhunting films and exhibits.

This year, 1965, the festivities

Joey Stone, 148; Pat Clark, 147-

4. Goldfields Eagles-Australia -5. Goldfields Marksmen-Australi

Free Style

1. Halls Archery Shop-Connecticut—Edward Gaffney, 532; Bill Gaffney, 464; Mike Lindsay, 458; John Athinson, 420–1874.

2. Halls Archery Lanes-Connecticut-Harold Bayer, 322; Lonnie Ray, 274; Dave Tedford, 250; Dave King, 246-1097.

3. Limbows-California - Karen Holdson, 134; Randy Stedman, 195; Benny Lee, 114; Jeanette Stone,

116-559.

-inc.

Individual

Allen Murphy (Pennsylvania) -

The instinctive race was pretty tight this month. The Rebel Sharpshooters thought they had it all wrapped up and so did I, 'til I totaled the scores from the Bear Archery Shop. Just 17 points sep**DURYEE ROUND** SEPT. TMT

arated these two teams. That big 538 from Steve Cassells made the difference.

We had a tie for third place this month between Paul Lewis and Mike Harris. Mike gets the medal because Paul did not turn in his scorecard. Since I'm still on vacation (with Paul) I can't get his card until we go home-tough break Paul.

Two new teams from Connecticut took first and second in the Free Style Division. Halls Archery Shop made it a runaway by almost 800 points from their second team, Halls Archery Lanes. We had two 500 scores from our freestylers: a winning 538 from Allen Murphy of Pennsylvania and a 532 (only six points off the pace) from Ed Gaffney of Connecticut.

It is interesting to note that the T.M.T. individual Inst. and Free Style records are both 538.

Byron

BEDNAR AND TILLBERRY WIN PAA

Bill Bednar took his second professional Archers Association Championship over the Fourth of July Weekend when the PAA held its tournament at Rouge Park in Detroit. The Suffield, Ohio, ace shot a 1164. He came from behind to beat Ed Rhode, Muscatine, Iowa, who had a 1161 and John Rudy, Syracuse, N.Y., with a 1155. Bill Partin, '64 winner, was not present. Margaret Tillberry, Springfield, Ohio, took the women's class with a total of 1117, ahead of Evelyn Goodrich, Flint, Mich., who posted 1072 and Jane Waite, Tyrone, Pa., with 1055. Margaret has won the women's division three years in a

The tourney experienced wind, causing low scores on the first day. Second day saw calm and clear weather. For the first time a public ad-



will begin Friday morning, September 17, and go until Sunday evening, September 19. Registration for the whole weekend only costs \$5 per couple or \$3 per individual. Children under 16 may register for \$1.50 for the weekend or 50 cents per day.

dress system was used with Dave Staples commentating, even while archers were on the shooting line. Movies of the championship will be used for promotional purposes. The Detroit newspapers gave good coverage. Prize money was \$4,000 put up by the PAA and archery manufacturers. Bednar won \$550 and Margaret Tillberry \$300. MEN \$550—Bill Bednar, Suffield, Ohio 1164

\$400-Ed. Rhode, Muscatine, Iowa	1161
\$325-John Rudy, Syracuse, N. Y	1155
\$250—George Clauss, Saginaw, Mich \$200—*Norm Pederson, Chicago, Ill	1154
\$200-*Norm Pederson Chicago III	1149
Sind—Ron Bilner Rig Ranide Mich	1149
\$125-*Doug Brishana Rochaster N V	1147
\$115_Arnold Floming Lafavatta N V	1147
\$125—*Doug Brisbane, Rochester, N. Y. \$115—Arnold Fleming, Lafayette, N. Y. \$110—Owen Jeffrey, St. Charles, Mo.	1146
\$105 Dill Warmen Detroit Michigan	
\$105—Bill Warren, Detroit, Michigan\$100—Bill Jackson, Champagne, Ill\$95—*George Zimmerman, Huron, Ohio\$90—Bill Learn, Vandergrift, Pa\$85—Mel Nelson, Cedar Lake, Ind\$80—Don Herold, Saxonburg, Pa\$75—Victor Berger, Springfield, Ohio\$70—George Catlin, Ballston Spa,	1144
5100—Bill Jackson, Champagne, III	1141
5 55—George Zimmerman, Huron,	1110
Onio	1140
5 90—Biii Learn, Vandergrift, Pa	1140
\$ 85-Mei Nelson, Cedar Lake, Ind	1137
\$ 80—Don Herold, Saxonburg, Pa	1135
\$ 75—Victor Berger, Springfield, Ohio	1132
\$ 70—George Catlin, Ballston Spa,	
	1129
\$ 65-Earl Hoyt, Bridgeton, Missouri	1128
\$ 60-*Bob Bohnsack, Dysart, Iowa	1127
\$ 65—Earl Hoyt, Bridgeton, Missouri \$ 60—*Bob Bohnsack, Dysart, Iowa \$ 55—Paul Hart, Lafayete, N. Y \$ 50—Don Cleghorn, Lorain, Ohio \$ 45—Vincent DeLorenzo, Niagara	1127
\$ 50-Don Cleghorn, Lorain, Ohio	1126
\$ 45-Vincent DeLorenzo, Niagara	
Falls, N. Y.	1125
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WOMEN	
\$300—Margaret Tillberry, Springfield,	1118
Ohio	1117
\$200-Eveleyn Goodrich, Flint,	
Michigan \$100—Jane Waite, Tyrone, Pa	1072
\$100-Jane Waite, Tyrone, Pa	1055
\$ 80—Gwen Learn, Pittsburgh, Pa	1033
\$ 60—Marie Horwath, Harrisburg, Pa	1018
\$ 80—Gwen Learn, Pittsburgh, Pa \$ 60—Marie Horwath, Harrisburg, Pa \$ 40—Diane Miller, Corry, Pa. \$ 20—Marilyn Tinkey, Detroit,	950
\$ 20-Marilyn Tinkey, Detroit,	
Michigan	901
-Dorothy Cleghorn, Lorain, Ohio	818
Dorum, Cicellorii, Dorum, Cinc	510

"WE'LL BIVOUAC HERE!" ordered King Edward III, with a vast sigh of relief. "If the French mean to have at us, it'll be against defense positions of our own choos-

It was August 25, 1346. The English monarch's heartfelt sigh was for the retreat corridor he'd now established toward his distant allies, the Flemings. His army, numbering 3,900 men - at - arms, 5,000 Welsh light infantry and 11,000 English archers—plus nobles and mounted knights-was weary. That night in camp near Crecy, bowyers and armorers worked feverishly preparing and repairing

battle equipment.

Edward had landed his force at Cherbourg on July 12. The compact army had pillaged and looted through Normandy, living high

There's more, much more, to archery than a beautifully crafted bow, colorful target, quiver of perfectly made arrows. Behind our modern, well-organized tournaments; our field sport; our daily practice, lies the wisdom of centuries, the cumulative craft and effort of literally millions of ancestral burners belongs.

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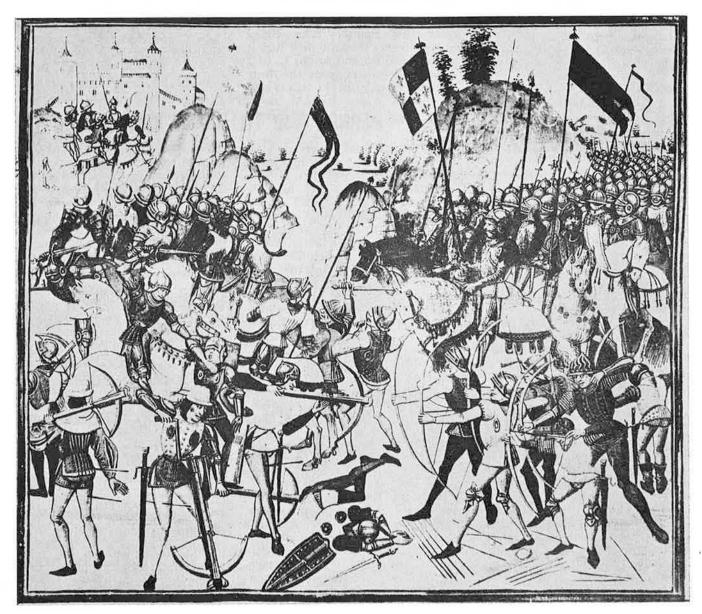
In this article and others to follow we want to highlight the history, romance, ideals and ideas which have helped shape our hobby, and made it the enjoyable recreation it is today. How archery equipment was and is built, the materials used in ancient and modern times; the pastimes dreamed up for amusement or sport, all are part of archery's heritage. That heritage, we feel, is worth examination.

off the bounteous land, practically unopposed by organized arms in that day of minimum communications. The king had planned to retire toward Flanders in the autumn, possibly to re-embark for English soil.

TO DO SO, both the Seine and Somme Rivers must be crossed. The slowly gathering French armies, under King Phillip of Valois, had four times thwarted that crossing; mainly with very effective cross-bow fire against clumsy boats and rafts of the English. Finally, under cover of darkness, the Welsh light infantry slipped across, followed by the men-at-arms and

CRECY: THE LONGBOW'S FINEST HOUR

By TOM BURRIER



heavily weighted knights.

"The French are concentrating at Abbeyville, about 100 furlongs (12 miles) southwest of us," Edward's scouts reported to him that night, in Crecy. "And they're far stronger than we: they're preparing for battle!"

So they were, but not efficiently. The French counted some 12,000 men-at-arms, 20,000 milice des communes, and many foot soldiers from the feudal levy. Their "fire power" was 6,000 cross-bowmen, Genoese mercenaries and experts in their line. Coupled with the French knights was a detachment of armored horsemen from Luxemborg under blind King John of Bohemia; plus other units from feudatories of the Holy Roman Empire.

BUT THE FRENCH problem was "every man a chief." Phillip, billeted at Estrees near Abbeyville, wanted to hold the attack until all elements of the army could assemble. His headstrong nobles and the feudal chiefs, eager for glory in battle over the hated English, disagreed. As a result, French strength was dispersed, and the advance from Abbeyville toward the English a long, straggling column of disorder.

Edward, a born tactician, fed his troops well the morning of the 26th. Of his three divisions, or "battles" as they were called, the first under the young Prince of Wales anchored the right flank at Crecy. The second under the Earls of Arundel and Northampton hinged on Wadincourt. The third division under his personal com-

"Here they come!" cried the outpost scouts, early that afternoon. PHILLIP, committed to action by his impetuous lieutenants, ordered the Genoese cross-bowmen forward, backed by a long column of men-at-arms. The other French units were still miles away, straggling in from Abbeyville. At the advance moment, a heavy thunderstorm postponed the battle: then the Genoese "artillery" op-

mand was held in reserve. All bag-

gage and camp gear was clustered

to the rear.

ened at long range. English longbowmen, eleven thousand strong, flanked each of the line divisions. As the showers of bolts fell short, they coolly picked their targets and raised havoc in the massed ranks of crossbowmen. After a few volleys and enormous losses, the French forces broke and ran. The English men-at-arms wisely held position, on the forward slopes of a gentle

hill chain. "Faint hearted rabble!" screamed several groups of French knights, and charged headlong into their own retreating bowmen. In moments the first French line was a mere mob of horses and soldiers, struggling to move anywhere! Bowyers rushed up fresh arrow supplies, and the English longbowmen continued compounding the French misery.

The second French attack, an hour later, simply enlarged the

A LARGE GROUP of knights

who had come up from Abbeyville charged the English lines. A few made it through their own screaming, agonized lines only to fall to the spears of men-at-arms and their terrible broadswords; longbowmen accounted for the rest. The blind King of Bohemia was killed by the Prince of Wale's personal body-

guard. The action now became one long series of desperate, badlyconducted charges as each fresh corps of French arrived from Abbeyville. The English held firm, letting the enemy come to them. The crossbowmen had now ceased to be a factor. The longbowmen

(Continued Next Page)



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CRECY

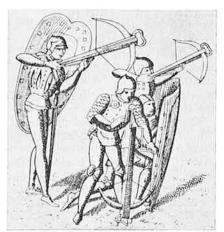
(Continued from Page 17)

had "wheeled up" on the short English front to form three strong salients: on each flank, and in the center between the two line divisions. The English front resembled a herse or harrow to the French, with the archer battalions the strong, threatening points.

As each French attack sought to close with the men-at-arms, their flanks were exposed to the deadly accuracy of the longbowmen.

French foot soldiers climbed over piles of their own dead, only to be themselves cut down by the deadly

AT EVENING, the two line divisions regrouped, the men-at-arms and armored knights now getting in their work. By midnight, the French army had been practically annihilated, 1542 French "chivalry"-knights and barons-were counted dead on the field. The English lost 50. Foot soldiers at that time weren't counted in cas-





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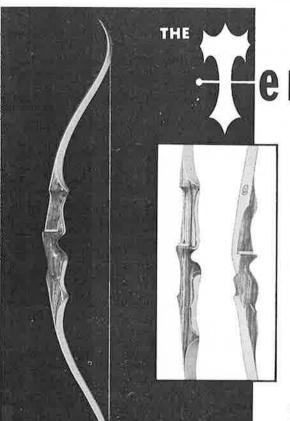
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Page Eighteen

TAM AND ARCHERY WORLD

CRECY (Continued)

ualty lists. The battle of Crecy was

But in a single day of battle, monumental events had occurred that would influence warfare, and the very history of Europe, for centuries.

Although the English longbow and its potential was well known in England and local battles, here for the first time it proved its worth in Continental warfare. Tactics for most military bowmen of the day was to merely let arrows fly in the general direction of the enemy. The English longbowmen at Crecy picked individual targets. and the superior range of their weapons proved decisive. The results of this sharpshooting staggered even the victorious King Edward.

A NEW ERA in tactics was also born. Crecy graphically demonstrated the defensive qualities of combining steady spearmen (Men-at-arms) with selective archery shooting; a small, well-trained force could rout a huge army organized along conventional lines. As the use of the longbow had been learning from the English-Welsh wars, so the new defensive tactics had been hard won in the Scottish highlands.

The cross-bow, although not entirely discredited, was relegated to second position in tactical thinking. Deadly at close range, the bolts simply could not compete with longbow arrows.

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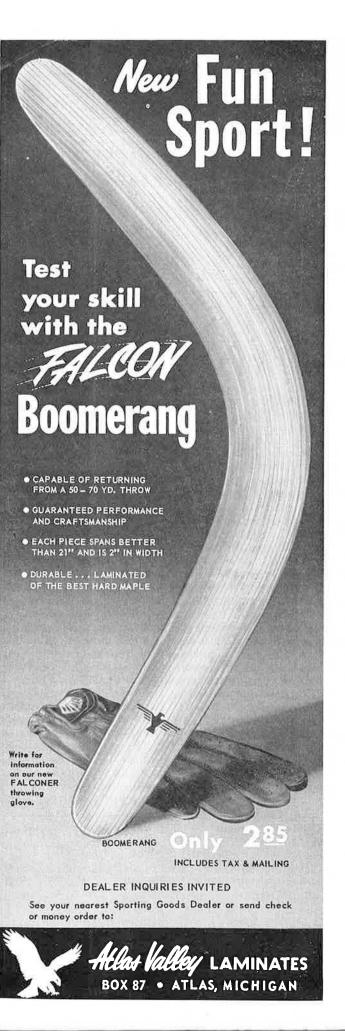
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HEAD ANGLES AND HOW THEY AFFECT YOUR SHOTS

A problem in shooting form which many archers have (because they are usually not aware of it) is an ever changing position of their head when they come to full an-

Usually much more emphasis is placed on the bow arm and the anchor placement. The position of the head is not considered because it seems pretty natural and one would think that as long as the string alignment is proper the head must be in the same position. This does not necessarily hold true.

Occasionally when an archer begins to tire he will draw back a little closer into the body and in so doing will allow his chin to be drawn back by the pressure of the string. This can occur very easily without the archer being aware of it. When the chin is drawn beyond the normal position the eye is then lowered and the angle between the eye and the sight changes, causing a change in the elevation of the point of impact of the arrow.

Another problem arises when the archer moves from a short distance to a longer distance and has a tendency to raise the chin to accommodate the angle of the elevated bow. This can sometimes shorten the draw length of the archer and cause him to shoot low on occasion.

Another condition can occur when the chin is drawn too far back. The archer can sometimes lose the feel of his anchor point (particularly if he shoots under his chin) and because his jaw bone is withdrawn into the neck, the hand can easily ride up over the jaw bone. He then anchors in a higher position, causing the arrows to drop low.

On many occasions you have heard an archer remark that he has lost his anchor point. This merely means that he has shifted his head into some position other than normal and can not find the exact location of his anchor because of this

There are two excellent ways to help an archer maintain head position and to keep him from drawing his head too far back with the draw hand. One is the application of a rear sight, or marker on his string at eye level. The other is the use of the level on the bow.

When using a level, draw back and anchor securely and then check your level. If the bubble has shifted to one side or the other it's usually because you have adjusted the bow and the string to fit the angle of your head. This means that you should do the reverse. You should maintain the bow in a vertical position and adjust your head angle to fit the bow and the string. This may seem a bit awkward but it can be quite important.

Sometimes when attempting to adjust the anchor and the string to the chin and the eye, it's necessary to twist the bow to the right or left. This is the wrong adjustment to make. The bow should be started out in a absolute vertical position with the level bubble in the center. After coming to full anchor, recheck



your level and make the adjustment by shifting the head and eye slightly to line up with the string and the

bow in level position.

To help eliminate over-draw and drawing the chin too far into the neck, put a peep sight in your string. Place a knot or a ball on the string at a position so that you are looking just under the ball when at full draw with the head in the correct position at a stationary distance (say twenty yards). After this small ball is placed in the proper position on the string, and darkened so that it can be seen, shoot a few arrows with the head in the correct position so that you can just see the bull's eye by looking directly under the ball on the string.

Then over emphasize your draw by allowing your chin to be pulled further into the neck or backwards and you will notice the ball will be pulled down in front of your vision and will block out the bull's eye. This is an indication that you are distorting your proper head angle and the necessary correction should be made. Without the ball on the string you can make the same maneuver without it being noticeable. A change can occur in the point of impact of your arrow (either high or low) and you may really never find out why.

(Continued on Page 23)

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My Favorite Hunting Partner

By LONNIE EMERICK



THE SUN edged over the rim of the river bank sending pale yellow fingers dancing on the soft white mantle of snow. I shifted my bow to a more comfortable position and contemplated the densely wooded riverbottom and the well-worn deer trail close to my blind. An occasional shot punctuated my reverie for this was the opening day of the Minnesota rifle season; archers may hunt at this time on their regular bow and arrow license. Then, faintly but distinctly, a call from my wife's stand. She must have a deer!

Hurrying toward Lynn's blind I began to think about our partnership, both in marriage and bowhunting. Like most avid hunters, I had approached marriage with a mixture of wistful hope and belligerent defensiveness about future hunting. The inevitable toll of wedding bells had depleted that old hunting gang of mine. When Fall came around my buddies' wives somehow forgot my phone calls, they shrewdly managed to plan family reunions that coincided with opening day of the season and they made many sarcastic comments about wild bachelors. Gradually, like a creeping plague, the marriage dissease spread and my former hunting companions sold their guns and bows and joined suburban bridge

ALTHOUGH MY BRIDE, like many women, had never hunted, she nonetheless appreciated that her husband was obsessed with antlers, broadheads and shooting irons. On our first anniversary she gave me a new hunting bow and a matched set of arrows. Lynn insisted that she was not interested in hunting but that she would go along as an observer and record the action with our movie camera. But she knew that a lasting understanding and tolerance of hunting comes from more active participation and so, after some

persuasion, she finally consented to get a bow for

During our practice sessions, my wife showed little interest in archery. Her muscles ached from pulling the bow, the arrows refused to stay on the arrowrest and even the straw bale seemed an incredible elusive target. By late summer, however, she began to show promising skill despite her lack of enthusiasm.

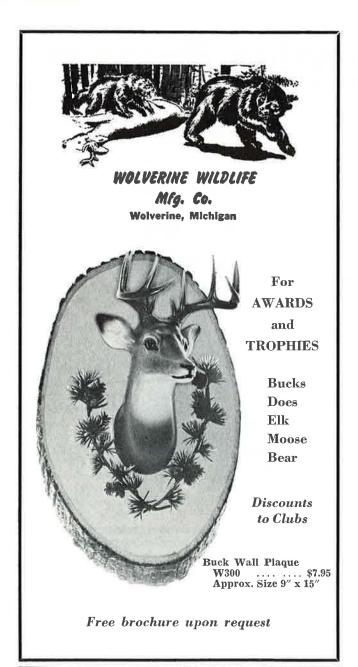
But I had a plan that might work. On one of those delightful and incredible Fall mornings that seem to gently unfold, crisp, clear and colorful, I positioned Lynn on a saddle of cover between an oak ridge and a dense cedar swamp. It was the best runway I could find. Her thoughts were still of movies and the camera was ready in her hands; her bow, however, was close beside her as she positioned herself under a small ash tree.

WAVING GOODBYE I headed up an old logging road where the sun filtered down through the violently colorful leaves making the pathway more beautiful than a stained glass window. The yellow birches danced, the scarlet maples blushed and the quiet brown oaks nodded gently against the dark green of the cedars.

Then, suddenly, a movement caught my eye. I made out the ears, backs and tails of two deer 80 yards away and partly screened by a clump of alders. Slowly I raised my bow and drew the shaft back until the feathers touched the corner of my mouth. The deer moved forward, sensed my presence and bounded for the safety of the swamp before I could release the arrow. I stalked the area slowly for a while and then retraced my steps to Lynn's stand.

If I hadn't been so interested in my own encounter

(Continued Next Page)





WHAT IS THE MOST VERSATILE ARROW HEAD EVER DESIGNED?

Hillseid Archery Co., Des Moines, Iowa Knows.

MY FAVORITE HUNTING PARTNER

(Continued from Page 21)

with the two deer, I would have noticed right away. She was holding her bow, not her camera, and there was a certain sparkle of excitement in her eyes. I described in detail how I, old wise hunter home from the hill, almost had a shot. She listened indulgently and respectfully as her husband talked about his hunting prowess. The she said:

"I had a shot!"

WITHIN SECONDS after I had left her three does had walked up to her stand. All thoughts of movies had vanished as she scrambled for the bow, tangled it in the tree and shot at the biggest deer. The broadhead sailed over its back and all three whitetails bolted for the swamp before she could nock another arrow. "And I found the arrow, too," she said proudly.

That did it. That single experience, that thrilling moment of challenge on a Fall morning transformed my wife into an avid hunter. It was astonishing to behold the change and to see her become one of the

best hunters that I have ever known.

She never wanders off her stand or complains about the weather even under severe conditions. When I get on post I tend to wiggle and fidget but Lynn is able to sit for hours without moving. She stood so quietly last year when the mercury was hovering at zero and the snow crinkled at every step that she almost froze to death!

LYNN NEVER TALKS in the woods like some former hunting companions of mine. She even devised a method of communicating simple messages by using a crow call. Most important of all she doesn't

talk when I miss an easy shot.

And now Lynn was kneeling beside a sleek doe, her first deer, on a knoll overlooking the riverbottom. She smiled with a saddness as she looked up at me over the fallen deer and I knew exactly how she felt, how most hunters feel when the beautiful wild creature that you admire so much is dead before your feet. It is a bittersweet time, a time for which we plan, dream and work and yet a time of sorrow and pity blended with the feeling of thrill and success.

The doe, spooked by gun hunters, had sneaked up the knoll and, not 30 feet from Lynn, it had bedded down. She had killed the doe in its bed with one shot which, I discovered when dressing it, had penetrated the heart. The deer weighed a delicious 130

pounds.

TOO MANY MEN overlook a darn good hunting companion, the gal who cooks the food, cleans the house and tends the children. Some men take their wives hunting but make the "wait here till" mistake. While they amble down into good hunting territory, the wife is left to "wait here till" they get back. Others say the heck with it and take off hunting with whomever and whenever they please. They aren't really very happy, though, because they either feel guilty as the dickens or are nagged with a vengence.

Even when my wife can't go hunting everytime, and we have two recent little reasons, twin girls, she understands the pull I have to the woods and she never complains. She knows what I want, because she understands and understands because she has also expierienced it. That is the significant thing to provide a thrilling hunting experience that will initiate exciting memories of the chase. In a few years my two youngest archers will be able to join us and then I will have three favorite hunting partners.

POWER ARCHERY

(Continued from Page 20)

The best cure for changing head angle is the rear peep sight or a small metal disk inserted into the string which has a hole approximately 1/16" in diameter. Place this in the proper position so that at full draw, with the head in the proper position, you are looking directly through the hole, into your sight, and into the target. With a hole 1/16" or smaller it only requires a very slight change in head angle to block out the target either one way or the other.

A slight change to the right or left will cause you to look into the washer rather than through the center. By pulling your head too far backwards you will be looking into the top of the washer instead of the center. I think the adaptation of a rear sight on the string will do more to cure changing head angles than any other thing you can do.

There are other problems that can occur with the use of a rear peep sight. If you have a tendency to roll your string on your fingers as you draw the bow your string will twist and the peep sight will change angles and you will not be able to see through it at full draw. Changes must be made in your draw to accommodate this condition.

The other problem that you may find is light glare, or reflection, from your rear sight with some indoor lighting, or possibly the sun when shooting outdoors. The peep sight should be darkened with a very dull black finish to eliminate this reflection. Keep in mind that a small peep (as I have described above) is only good for distances within about a twenty-five yard variance. This means that you can possibly shoot an indoor Flint Round from five to thirty yards with a peep sight the diameter of 1/16".

For greater variance in distance the peep sight window must be elongated. There are elongated string sights available on the market. The elongated peep sight can be adapted very well to field shooting or the P.A.A. Round. The longer peep sight should be adjusted within the string so that you look just inside the top portion at your shortest target. This gives you a check on your head angle when shooting at the short distances. The longer peep sight does allow room for error at longer distances be-

cause you can overdraw or pull the chin back and not know it.

If you are one of those archers that sometimes believes you are shooting much better than you are scoring and can't understand why, by all means investigate the possibility of changing head angles and the use of the aids I have described.



TAM



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STATE AND CANADIAN BOW

CODE: (1)-State, write to.

(2)-Licenses required for bowhunting.

(3)—Special archery seasons.

(4)—Mics.

(5)—Big Game Species.

(6)—Special Bowhunting Regulations.

WARNING! This tabulation is compiled from official sources; but in the space available it is impossible to give full details, and in some cases the authorities have the power to change seasons on short notice. So before you plan a hunt in any state or province, get a copy of current regulations from the proper agency and then read up on bag limits, local exceptions, and other similar data pertinent to the hunt.

- ALABAMA: (1) Dept. of Conservation, Game & Fish Div., Montgomery 4, Alabama; (2) Non Res. 7 days \$10, Non Res. Annual \$25; (3) Yes—check regulations for dates and areas; (4) Turkey can be hunted in certain areas-Sunday hunting; (5) Deer, Turkey—Bobcat all year round; (6) No special regulations—longbow only.
- ALASKA: (1) Alaska Dept. of Fish & Game, Subport Bldg., Juneau, Alaska; (2) Non Res. hunting \$10, Non Res. hunting & fishing \$20; (3) None—hunting in regular firearms seasons—check regulations for special dates in various areas; (4) Non Res. big game tags must be taken before hunting any of the listed species of big game. Brown and Grizzly Bear \$75; Black Bear \$10; Deer \$10; Moose and Sheep \$50; Elk, Goat, and Caribou \$25. Tags not used for specific animal issued can be used on another species for which the tag fee is equal or less value, but only for the year issued; (5) Grizzly, Brown, Black, Polar, Blue or Glacier Bear; Sitka Deer; Moose; Dall Sheep; Elk; Goat and Caribou; (6) None -hunt under firearm regulations.
- ARIZONA: (1) Arizona Game & Fish Dept. 105 State Office Bldg., Phoenix, Arizona. (2) Non Res. hunting \$20, Non Res. archery \$15 plus deer and javelina archery tags \$1 each (3) Yes-check regulations for dates and areas; (4) Special archery license good for deer and javelina only) (5) Deer, Javelina, Turkey, Bear, Antelope; (6) Minimum bow weight 40 lbs., no less than inch broadheads.
- ARKANSAS: (1) Arkansas Game & Fish Commission, Game & Fish Commission Bldg., Little Rock, Arkansas; (2) Non Res. archery \$5-if deer is killed the hunter turns in the \$5 license and pays \$20 in addition for Non Res. big game license of \$25; (3) Yes-check regulations for areas and dates: (4) Also crossbow season-check regulations; (5) Deer; (6) Minimum bow weight 40 lbs. at 28 inches draw, using broadheads of no less than % inch width.
- CALIFORNIA: (1) California Dept. of Fish & Game, 722 Capitol Mall, Sacramento, California; (2) Non Res. \$25, Deer Tag \$10, Bear Tag \$1; (3) Yes—check regulations for dates and areas; (4) Deer, limit two bucks forkhorn, limit bear two-check regulations for special areas where this applies; (5) Deer, Bear, Wild Pigs; (6) Bow must cast hunting arrow 130 yards. Hunting heads may not pass through hole % inch in diameter.
- COLORADO: (1) Colorado Dept. of Game, Fish & Parks, 6060 Broadway, Denver, Colorado 80216; (2) Special archery license Non Res. Deer only \$10, regular season Non Res. Elk \$50, Bear \$10, first Deer \$40, second Deer \$7.50—special archery license cannot be used in any regular season; (3) Yes-check regulations for dates and areas on Deer. Also a special Elk area for archery using regular \$50 license in San Luis Valley,-check regulations for time and area; (4) One Bear can be taken by bowhunter on original or first deer license of \$40 and or Elk license of \$50—Sunday hunting; (5) Deer, Elk, Black Bear; (6) Bow must cast hunting arrow minimum of 130 yards-no hunter safety examination required.
- CONNECTICUT: (1) Connecticut Board of Fisheries & Game, State Office Bldg., Hartford, Connecticut 06115; (2) Non Res. hunting \$4.35, archery for deer \$5.35 additional; (3) Yes-check regulations for dates and areas; (4) Black Bear, Bobcat, Canadian Lynx, Gray or Red

Fox, Otter, Panther and Woodchuck open all year round-no Sunday hunting; (5) Deer; (6) Bow must cast hunting arrow of 400 grain minimum of 150 yards and all arrows must have name and address of bowhunter placed thereon-no hunter safety examination required

FLORIDA: (1) Game & Fresh Water Fish Commission, Tallahassee, Florida 32304; (2) Non Res. special 10 days \$11.50, annual \$26.50; (3) Yes—special archery hunts prior to regular seasons in wildlife management areas, special season for wild hogs-check regulations for dates and areas; (4) Archery hunting permitted during all regular seasons, special public hunting permit of \$5 required to hunt in wildlife management areas-Sunday hunting permitted in certain areas; (5) Bear Deer, Wild Hog, Turkey; (6) Hunting bow must cast hunting arrow of one ounce weight distance of 150 yards-no hunter safety examination required.

GEORGIA: (1) State Game & Fish Commission, 401 State Capitol, Atlanta, Georgia; (2) Non Res. archery big and small gave \$20.25, small game only \$10.25; (3) Yescheck regulations for dates and areas; (4) Sunday hunting is illegal throughout state, but enforced only by local discretion-check with county sheriff. Eight counties do not permit special archery hunting-check regulations; (5) Deer; (6) Minimum bow weight 40 lbs. Minimum hunting head width % inch and bow must be unstrung while transporting in automobile.

HAWAII: (1) Division of Fish & Game, 400 S. Beretania St., Honolulu, Hawaii 96813; (2) Non Res. \$10 all game; (3) Special archery season areas—check regulations; (4) Hunting permitted on Saturdays, Sunday, and State Holidays only. Exceptions: game mammals may be hunted on private areas year round with permission of land owner. No bag limit; (5) Axis Deer, Goat, Sheep, Pigs in special areas: (6) Bow weight of 45 lbs, minimum -no hunter safety examination.

IDAHO: (1) Idaho Fish & Game Dept., Dept. 518, Front St., Boise, Idaho; (2) Non Res. Fish & Game \$100 entitles holder to one Deer, one Elk, one Bear, game birds and fish; Non Res. Deer or Bear special areas \$25. Must apply for permits for Antelope, Moose and Mountain Goat controlled hunts; Mountain Goat tag \$10 and Sheep tag \$10; (3) Yes-special Deer, Antelope, Elk, Mountain Goat and Bear archery seasons—check regulations for dates and areas; (4) Deer and Elk controlled hunt applications must be in Boise by 5 p.m. (MST) Aug. 7 or postmarked no later than midnight that date—drawings on Aug. 19. Antelope, Moose and Mountain Goat controlled hunt applications must be in Boise by 5 p.m. (MST) July 17 or postmarked no later than midnight that date—drawings on July 28 - Sunday hunting; (5) Elk, Deer, Moose. Mountain Goat, Mountain Sheep, Antelope, Bear; (6) None.

ILLINOIS: Not Open to Non Res. Hunting Archery. INDIANA: Not Open to Non Res. Hunting Archery IOWA: Not Open to Non Res, Hunting Archery.

KANSAS: (1) Forestry, Fish & Game Commission, Box F, Pratt, Kansas; (2) Deer Tag \$25 plus Non Res. hunting license \$25; (3) Yes—check hunting regulations for areas and dates; (4) Sunday hunting-no hunter safety examination; (5) Deer; (6) Longbow of no less than 35 lbs. pull using broadheads, crossbows not allowed.

KENTUCKY: (1) Dept. of Fish & Wildlife Resources, Frankfort, Kentucky 40601; (2) Non Res. archery \$5.50 plus deer permit \$10.50; (3) Yes-check regulations for dates and areas; (4) No hunter safety examination-Sunday hunting in most counties. If home state of Non Res. hunter does not permit Kentucky residents to hunt deer as a Non Res. such applicants may not hunt deer in the state of Kentucky. Crossbows are allowed; (5) Deer, Turkey, Fallow and European Red Deer in certain areas; (6) Barbless broadhead arrows of no less than % inch width

LOUISIANA: (1) Louisiana Wildlife & Fisheries Commission, 126 Wildlife & Fisheries Bldg., 400 Royal St., New Orleans, Louisiana 70130; (2) Non Res. hunting \$25; (3) Yes-check regulations for dates and areas; (4) No hunter safety examination required-Sunday hunting; (5) Deer; (6) No special archery regulations listed.

HUNTING REGULATIONS

 $\mathbf{B}\mathbf{y}$ HOMER "Dutch" WAMBOLD

MAINE: (1) Dept. of Inland Fisheries & Game, Augusta, Maine 04330; (2) Non Res. archery \$10.25; (3) Yes check regulations for dates and areas; (4) No closed season of Black Bear-no Sunday hunting-no hunter safety examination; (5) Deer, Black Bear) (6) Hunting bow must cast hunting arrow 150 yards.

MARYLAND: (1) Maryland Game & Inland Fish Commission, State Office Bldg., P. O. Box 231, Annapolis, Maryland 21404; (2) Non Res. \$25 plus Deer Stamp \$3; (3) Yes—check regulations for dates and areas; (4) No Sunday hunting—no hunter safety examination; (5) Deer; (6) Minimum bow weight 30 lbs., minimum

hunting head width % inch.

MASSACHUSETTS: (1) Division of Fisheries & Game, Field Hdqtrs., Westboro, Massachusetts 01581; (2) Non Res. \$15.25 plus archery stamp \$1.10; (3) Yes-check regulations for areas and dates; (4) Archery stamp required for special archery season only, can hunt regular season without stamp-no hunter safety examination—no Sunday hunting; (5) Deer, Black Bear; (6) Broadheads no less than % inch width or more than 1½ inch width, bow minimum weight draw at 28 inches 40 lbs. All arrows must have name and address of bowhuntinter clearly applied.

MICHIGAN: (1) Dept. of Conservation, Lansing, Michigan 48926; (2) Non Res. archery Deer and Bear \$15; (3) Yes-check regulations for dates and areas; (4) Sunday hunting-no hunter safety examination. Special Bear season Upper Peninsula with Non Res. \$25 license bow or rifle; (5) Deer, Black Bear; (6) Bow must be carried

in trunk or case and unstrung while in car.

MINNESOTA: (1) Dept. of Conservation, Centennial Office Bldg., St. Paul, Minnesota 55101; (2) Non Res. archery \$10.25; (3) No special archery season; (4) Sunday hunting-no hunter safety examination; (5) Deer; (6) Minimum bow weight 40 lbs., hunting heads must be all steel, barbless, and not less than one inch width two blade, not less than three inches in circumference three blade. Bow must be unstrung in trunk or case while in

MISSISSIPPI: (1) Mississippi Game & Fish Commission, Box 451, Jackson, Mississipi 39205; (2) Non Res. archery \$5.25; (3) Yes-check regulations for dates and areas; (4) Sunday Hunting. If deer is killed in special archery season, license is exchanged for all game license at additional \$20 before transporting deer out of state; (5)

Deer: (6) None.

MISSOURI: (1) Missouri Conservation Commission, Highway 50 West, Jefferson City, Missouri 65102; (2) Non Res. archery \$10; (3) Yes—check regulations for dates and areas; (4) Sunday hunting not legal but not enforced by Game Commission-no hunter safety exam-

ination; (5) Deer; (6) None.

MONTANA: (1) Dept. of Fish & Game, Helena, Montana; (2) Non Res. big game \$100 Elk, Deer, Bear. Deer \$20, Antelope \$21. Additional archery stamp required \$2; (3) Yes-check regulations for dates and areas for Antelope. Deer, and Elk: (4) Permits needed on drawing basis for Antelope \$21, Moose \$25, Mountain Sheep \$15, Mountain Goat\$5—Sunday hunting—no hunter safety examination required of Non Res. (5) Elk, Moose. Mountain Sheep, Mountain Goat, Deer, Black and Grizzly Bear; (6) Minimum bow weight 40 lbs., casting hunting arrow for 150 yards, minimum shaft length 24 inches, minimum hunting head width one inch.

NEBRASKA: (1) Game Forestation and Parks Commission, Game Division, Lincoln, Nebraska 68509; (2) Non Res. Antelope or Deer \$25; (3) Yes-check regulations for dates and areas; (4) Sunday hunting. Second deer permit available; (5) Whitetail and Mule Deer, Antelope; (6) Minimum bow weight 40 lbs. at 28 inches, hunting heads at least 7/16 inch radius from center of shaft and no more than 12/16 inches from center of shaft, total cutting edge length must be three inches minimum.

NEVADA: (1) Nevada Fish & Game Dept., Box 678 Reno, Nevada 89504; (2) Non Res. \$10 plus \$10 tag; (3) Yes— Aug. 29 to Sept. 13, either sex, statewide; (4) Archery license does not make holder eligible for antlerless deer tags in drawing-check regulations for areas closed to Non. Res. hunting-Sunday hunting; (5) Mule Deer;

(6) Hunting heads must be at least ¾ inch wide, bow must cast 400 grain hunting arrow minimum of 150 yards on level terrain, all archery licenses and tags must be purchased by mail.

NEW HAMPSHIRE: (1) Fish & Game Dept., Concord, New Hampshire; (2) Non Res. archery Deer \$10; (3) Yes-Oct. 15 to Nov. 15, either sex Deer. Black Bear entire state Sept. 1 to Dec. 10 no limit. Non Res. \$25.25 plus archery \$4. Dogs may be used; (4) Bobcat and Lynx not protected with bounty of \$20—Sunday hunting; (5) Deer, Black Bear; (6) Minimum bow weight 40 lbs., all arrows must have name and address of bowhunter placed theron-no hunter safety examination for the special archery season only.

NEW JERSEY: (1) New Jersey Dept. of Conservation & Economic Development, Div. of Fish & Game, 230 West State St., P. O. Box 1809, Trenton, N.J.: (2) Non Res. \$15.15: (3) Yes—Oct. 7 to Nov. 7, limit one deer either sex; (4) No Sunday hunting; (5) Deer; (6) Broadheads minimum width ¾ inch, maximum width 1½ inches, bow weight minimum of 35 lbs. and must cast

hunting arrow 125 yards to similar elevation.

NEW MEXICO: (1) Dept. of Game & Fish, State Capitol, Santa Fe, New Mexico; (2) Non Res. big game \$50.25 plus \$2 bowhunting tag; (3) Yes-Deer northern half Oct. 3 to Oct. 18, southern half Oct. 10 to Oct. 25 plus additional limited bowhunts in certain areas,-check regulations. Antelope, Sept. 19 to Sept 20 inclusive; (4) Elk hunted in regular firearms season, Turkey and Bear taken with big game license-Sunday hunting. Game export permit \$1.25; (5) Deer, Black Bear, Turkey, Antelope, Elk; (6) Bow must cast hunting arrow 130 yards (Deer, Bear and Antelope), 150 yards (Elk);

NEW YORK: (1) Conservation Dept., Albany 1, New York; (2) Non Res. hunting \$10.75 plus Non Res. archery \$10; (3) Yes-check regulations for areas and dates; (4) Sunday hunting; (5) Deer and Black Bear; (6) Hunter safety certificate required from New York State. Bow must propel hunting arrow 150 yards, hunting heads must have two cutting edges of minimum width of %

inches

NORTH CAROLINA: (1) North Carolina Wildlife Resources Commission, Raleigh, North Carolina; (2) Non Res. hunting \$20, Special 6 day permit \$15.75; (3) Yescheck regulations for date changes, usually Oct. 1 to Oct. 24; (4) All bowhunting during regular seasons under regular regulations. Antlerless deer can be taken during last six hunting days—check regulations; (5) Deer and Black Bear; (6) Minimum hunting head width of % inches, minimum bow weight of 45 lbs.

NORTH DAKOTA: (1) North Dakota Game & Fish Dept., Bismarck, North Dakota; (2) Non Res. archery \$25; (3) Yes—see regulations for dates and areas; (4) Sunday hunting-no hunter safety examination; (5) Deer and

Antelope; (6) Not available—check regulations. OHIO: (1) Division of Wildlife, 1500 Dublin Road, Columbus 12. Ohio; (2) Non Res. \$20,25 plus special \$5 deer permit; (3) Yes-Oct. 9 to Dec. 26, any sex; (4) No Sunday hunting. Shooting hours 9 a.m. to 5 p.m. on Dec. 3 & 4, otherwise daylight to dark; (5) Deer; (6) No special

regulations on equipment—no hunter safety examination. No crossbows allowed.

OKLAHOMA: (1) Dept. of Wildlife Conservation, Box 53465, Oklahoma City, Oklahoma 73105; (2) Minimum \$15 (reciprocal with home state fee of the Non Res. applicant; (3) Yes-check regulations for dates and areas; (4) Sunday hunting if included in season—no hunter safety examination. Crossbows not allowed; (5) Deer; (6) 40 lb. minimum bow weight, heads minimum % inch, maximum 11/2 inches width.

OREGON: (1) Oregon Game Commission, 1634 S.W. Adler St. P.O. Box 3504, Portland, Oregon 97208; (2) Non Res. hunting \$35 plus Deer tag \$15, Elk tag \$35. Bear in certain areas limit (1) other areas unlimited, no tag needed; (3) Yes-check regulations for dates and areas; (4) Sunday hunting; (5) Deer, Elk, Black Bear; (6) Arrows no less than $437\frac{1}{2}$ grains for Deer and 500 grains for Elk, hunting head must be % inch minimum width. Bow weight minimum for Deer 40 lbs. and for Elk 50 lbs.

(Continued Next Page)

STATE AND CANADIAN REGULATIONS

PENNSYLVANIA: (1) Game Commission, P.O. Box 1567, Harrisburg, Pennsylvania 17120; (2) Non Res. hunting \$25.35 plus archery license \$2; (3) Yes—Oct. 2 to Oct. 29 statewide, any sex, 1 deer limit. Jan. 3 to Jan. 8 certain areas—see regulations; (4) No Sunday hunting. Bear or Wild Turkey can be hunted during the regular firearms seasons without the special archery license; (5) Deer; (6) No special regulations for archery hunting.

RHODE ISLAND: (1) Division of Fish & Game, Veteran's Memorial Bldg., Providence 3, Rhode Island; (2) Non Res. \$10.25 plus Non Res. archery \$20; (3) Yes-Dec. 26 to Jan. 25; (4) Sunday hunting in certain areas: (5) Deer; (6) Bow must cast arrow minimum distance of 150 paces, hunting heads must have at least two cutting edges % inch width minimum, and not be of riveted construction, each arrow must carry full name and address of bowhunter thereon—hunter safety certificate

required, NRA certificate will be recognized.

SOUTH CAROLINA: (1) Wildlife Resources Commission, Box 360, Columbia, South Carolina 29202; (2) Non Res. \$22.25 annual, 3 day Non Res. \$11.25; (3) Special archery hunts to be set in fall by Commission; (4) Sunday hunting technically No-not enforced; (5) Deer; (6)

SOUTH DAKOTA: (1) Dept. of Game, Fish & Parks, Pierre, South Dakota: (2) Gen. hunting 50 cents. Non Res. big game \$35; (3) Yes—check regulations for areas and dates; (4) Antelope and Deer can be hunted with Non Res. \$35 license; (5) Antelope, Deer; (6) Minimum bow weight 40 lbs.

TENNESSEE: (1) Game & Fish Commission, Cordell Hull Bldg., Sixth Ave. No., Nashville, Tenn. 37219; (2) Non Res. \$15 plus big game stamp \$5—no Non Res. archery; (3) Yes-check regulations for dates and areas; (4) Hunter must wear red, yellow or orange cap and jacket-Sunday hunting-hunter safety examination not required. No crossbows; (5) Deer, Black Bear, Boar; (6) Minimum hunting arrow length 24 inches, broadheads no less than % inch wide or more than 1½ inches wide for two blade, not less than three inch circumference for three blade or more, no broadhead may weigh less than 100 grains, no required minimum bow weight.

TEXAS: (1) Parks & Wildlife Dept., John H. Reagan Bldg., Austin, Texas 78701; (2) Non Res. hunting \$25, no special archery license; (3) Yes—check regulations for dates and areas; (4) Sunday hunting-no hunter safety examination. No crossbows; (5) Deer, Bear, Turkey, Javelina; (6) Bow must cast hunting arrow for 130 yards broadheads must be % inch width minimum, 11/2 inches maximum, name and address of the hunter must be on each arrow.

UTAH: (1) Dept. of Fish & Game, 1596 West No. Temple, Salt Lake City 16, Utah; (2) Non Res. archery \$7 plus Non Res. big game \$40; (3) Yes-aug. 22 to Sept. 7 statewide; (4) Two areas confined to 1,000 archery permits each. Units 20 and 23B-check regulations for complete information. Second deer permit can be obtained —Sunday hunting; (5) Mule Deer, Black Bear; (6) Minimum bow weight 40 pounds casting an arrow 130 yards, hunting head must not be able to pass through % inch hole—hunter safety examination required if under 21, NRA certificate is recognized.

VERMONT: Fish & Game Dept., Montpelier, Vermont 05602; (2) Non Res. hunting \$22 plus Non Res. archery \$3.50; (3) Yes-16 consecutive days starting 2nd Saturday in Oct.; (4) Sunday hunting no hunter safety examination; (5) Deer; (6) No archery regulations.

VIRGINIA: (1) Commission of Game & Inland Fisheries, Richmond 13, Virginia; (2) Non Res. \$15.75 plus big game license \$5. County stamps required in some counties from \$1 to \$5. National Forest stamp \$1 to hunt in National Forest areas. State Forest stamp \$1 to hunt State Forest areas. None needed for state owned lands; (3) Yes-Whitetail Deer Oct. 15 to Nov. 15 statewide, Sitka Deer Oct. 5 to Oct. 10 Chincoteague National Wildlife Refuge only; (4) No Sunday hunting; (5) Deer, Black Bear, Turkey; (6) Hunting heads % inch minimum width, bow must cast hunting arrow 125

WASHINGTON: (1) Dept. of Game, 600 No. Capitol Way, Olympia, Washington 98502; (2) Non Res. hunting \$35, Non Res. Elk \$25: (3) Yes—check regulations for dates and areas of approx. 1,000 square miles; (4) Sunday hunting-hunter safety examination required under 18: (5) Deer, Elk, Black Bear, Mountain Goat; (6) Bow must cast hunting arrow 120 yards for Deer, Goat and Bear, bow must cast hunting arrow 150 yards for Elk. Arrow weight for Elk must be minimum of 500 grains, other big game 437 grains. One inch minimum broadhead width except on multiple bladed heads of % inch, barbed heads not allowed. Widest point of all broadheads must be closed with smooth unbroken surface towrds feathered end of shaft.

WEST VIRGINIA: (1) Dept. of Natural Resources, Charleston West Virginia 25305; (2) Non Res, archery \$5 plus 25 cents issuing fee; (3) Yes-Oct. 17 to Dec. 31, any sex, Also Black Bear included in same season: (4) No Sunday hunting—Bowfishing allowed on Sundays—no hunter safety examination. Game field tag supplied with license must be attached to deer or bear carcass before it is moved, must take to conservation officer for re-tagging before leaving county where killed; (5) Deer, Black Bear; (6) No bow weight minimum, arrows must have more than three-fourths inch width per cutting blade, minimum of two blades.

WISCONSIN: (1) Conservation Dept., Box 450, Madison, Wisconsin 53701; (2) Non Res. archery \$10 Deer only, Non Res. Gen. hunting \$50; (3) Yes-Sept. 26 through Nov. 17, Dec. 5 through Dec. 31; (4) No hunter safety examination—Sunday hunting; (5) Deer Black Bear; (6) None.

WYOMING: (1) Game & Fish Commission, P.O. Box 378, Cheyenne, Wyoming; (2) Non Res. hunting & fishing, Elk. Deer. Bear. Game Birds and Fish \$100: Deer \$20: Antelope \$25; Moose \$75; Two Bear \$25; Bighorn Sheep \$75; (3) None; (4) Sunday hunting. Guide required for certain hunting-check regulations. All game hunted during regular seasons. Archery permit must be obtained at Cheyenne office free of charge, game tags for each animal 10 cents each; (5) Elk, Moose, Bear, Deer, Sheep, Antelope; (6) Minimum bow weight 40 pounds casting an arrow for 150 yards minimum, hunting head minimum width one inch, shaft length of 24 inches minimum.

Canadian Provinces

ALBERTA: (1) Dept. of Lands & Forests, Fish & Wildlife Div., Terrace Bldg., Edmonton, Alberta, Canada; (2) Non Res. Alien big game \$100, Non Res. Alien Spring Bear \$50, Non Res. Alien Whitetail Deer \$15; (3) None; (4) Hunting with bow permitted anywhere in province during all open seasons on game, no special archery seasons—no Sunday Hunting. Red outer sleeved garment must be worn for all big game hunting; (5) Bighorn Sheep, Mountain Goat, Elk, Moose, Mule Deer, Whitetail Deer; (6) Minimum drawing weight of hunting bow 45 lbs. at 28 inches, no less than one inch width on hunting heads.

BRITISH COLUMBIA: (1) Dept. of Recreation & Conservation, Fish & Game Branch, Victoria, B.C., Canada; (2) Non Res. big game and birds \$25. Big game tags: Moose, Mountain Sheep and Grizzly Bear \$5 each, Caribou \$3 each, Elk and Mountain Goat \$2 each, Deer 50 cents each. These tags must be in possession of hunter when seeking these species; (3) None; (4) Trophy fees: Mountain Sheep \$75; Moose, Elk, Caribou and Grizzly Bear \$60; Mountain Goat \$40; Deer \$25; Black Bear \$5. Trophy fees paid after animal is killed; (5) Mountain Sheep, Goat, Moose, Caribou, Elk, Grizzly Bear, Black Bear, Deer; (6) Minimum bow weight 40 pounds, minimum hunting head width % inches.

MANITOBA: (1) Dept. of Mines & Natural Resources, Wildlife Branch, 908 Norquay Bldg., Winnipeg 1, Manitoba, Canada; (2) Non Res. archery \$20, Deer only; (3) Yes-Oct. 2 to Oct. 17 entire province except few areas-check regulations for dates and areas; (4) Moose can be hunted under regular license, Non Res. \$50: (5) Deer, Moose: (6) None.

NEW BRUNSWICK: (1) Dept. of Lands & Mines. Fish & Wildlife Branch, Fredericton, New Brunswick, Canada; (2) Deer, Bear, Bobcat, Fox Non, Res. \$35.50; Special Bear only \$10; (3) None; (4) All hunting with bow regulated by regular firearms game laws; (5) Deer,

TAM AND ARCHERY WORLD

BOW HUNTING REGULATIONS

Black Bear, Bobcat and Fox. Non Res. huntermust have guide-no Sunday hunting; (5) Deer, Black Bear, Bobcat and Fox; (6) No archery regulations.

- NEWFOUNDLAND: (1) Dept. of Mines, Agriculture and Resources, Confederation Bldg., St. John's, Newfoundland, Canada; (2) Non Res. Moose \$75, Caribou \$150, Bear \$10; (3) None; (4) Hunting with bow done during regular season under firearms regulations. Caribou by permit only, special drawing of limited number-check regulations for dates and areas; (5) Moose, Caribou, Black Bear; (6) Minimum bow weight 45 lbs., minimum hunting head width % inches.
- NOVA SCOTIA: (1) Dept. of Lands & Forests, Halifax, Nova Scotia; (2) Non Res. Deer \$40; (3) None; (4) Sunday hunting not permitted-driving deer not permitted, Non Res. hunter must have guide; (5) Deer, Black Bear: (6) None.
- ONTARIO: (1) Dept. of Lands & Forests, Toronto, Canada; (2) Non Res. Deer, Black Bear, Fox and Wolf \$36; Moose, Deer, Bear, Fox and Wolf \$101; Spring Bear \$10.50; (3) Yes-check regulations for dates and areas; \$10.50; (4) Sunday hunting-hunter safety examination (4) Sunday hunting-hunter safety examination rerequired, NRA certificate is recognized. Guide required to hunt Moose and Deer in certain areas; (5) Deer, Moose, Bear, Wolf, Fox; (6) None.
- SASKATCHEWAN: (1) Dept. of Natural Resources, Regina, Saskatchewan, Canada; (2) Non Res. Alien Deer \$36, Moose \$100, Bear \$11. Must have valid Moose or Deer license to hunt bear; (3) Yes-Deer Sept. 21 to Oct. 7 Game Mgmnt Zones 20 to 36 inclusive and Crystal Beach Preserve; (4) Bear all year round. Non Res. limited to Zones 20 to 36 inclusive, limit 4, either sexno Sunday hunting; (5) Deer, Moose, Bear; (6) Minimum bow weight 40 lbs. all arrows must have name and address of bowhunter on shaft, hunting heads must have minimum of one inch diameter.
- YUKON TERRITORY: (1) Director of Game, Box 2703 Whitehorse, Yukon Territory, Canada; (2) Big Game Non Res. Alien \$100 allowing 2 big game trophies of hunter's choice, additional trophies of other species \$25 each after being killed. Spring Bear Non Res. Alien \$50; (3) None; (4) No trophy or export fees. Guide is required. Wolves, Coyotes, Wolverine and Cougar may be shot at any time-check regulations for dates, limits, and areas; (5) Black Bear, Grizzly Bear, Caribou, Moose, Mountain Goat, Mountain Sheep: (6)

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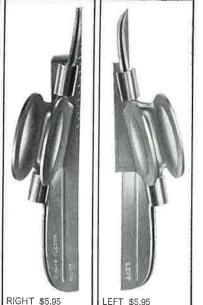
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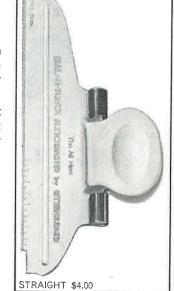
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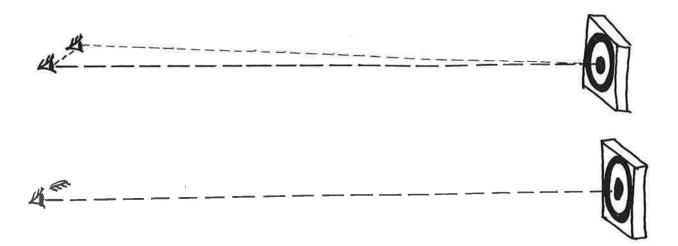
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INSTINCTIVE SHOOTING ANALYSIS



EARLY in 1964 my friend, Henry Fulmer Jr., called me and said "let's go up to Kutztown tonight, Buckeye archery club is having an indoor Flint round and I want to show you something about archery." It sounded interesting because three months earlier, in October, Henry went bowhunting for deer and I missed out because I thought a broadhead was something under a size 71/8 hat. Hunting was my favorite form of recreation and I thought this was a step towards going bowhunting for deer, come the next season. I went along.

That night I only watched as he showed me a few minor points, enough to get my interest going. He explained that he was an instinctive archer and that he shot without the benefit of a bowsight. He said that he pointed the arrow where he wanted it to go and then shot, hoping it got to the exact point he intended. That sounded reasonable and quite easy to do. Merely point it where you want it to go and then let it go there!

HE next week he had me all "harnessed" up wih arm guard, finger tab, quiver, etc., and I was all ready to point it where I wanted it to go.

The longer I pointed the tougher it got. How it could be so hard to make one little ole arrow fly

DEPTH perception (the ability to judge distance) is achieved by a method called triangulation. The brain computes the distance of an object in this fashion by digesting the information that our eyes pass on. Close one eye and all depth perception is lost

By

SHERWOOD SCHOCH

across a room and hit a big 12" face was above my understanding. Henry told me to just keep "pointing" and soon I would have the knack. He said all instinctive shooters have this problem to face.

That was the beginning of the end. I was hooked, there was no getting out, the monkey was on my back. It was learn to hit that blasted thing or live with my defeated ego. Form came easy to me but scoring well didn't. It was a constant struggle. Three months later I shot my first field round in competition and scored 96 points on the 28 targets. It didn't take Einstein to realize that pointing that arrow where you wanted it to go wasn't all there was to this thing. It was going to take some work, intelligent work, unless I wanted to stay with a 96 score.

Just about everything I could lay my hands on to read about form and shooting was directed at the freestyle shooter (sight) and sorting out what I could use was just

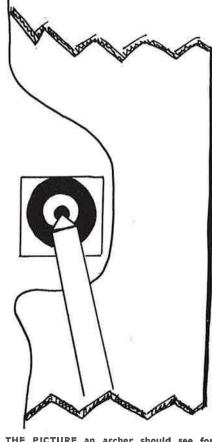
one more thing to confuse my cluttered mind.

One thing was certain though. Good form was equally important for both freestyle and instinctive shooting, the problem lay between the point where full draw is attained and aiming begins, to when the arrow would strike the target. Somewhere in this sequence period lay the problem between good or bad scores. That area is where aiming takes place, the muscles settle on the point the mind has picked out, the arrow is released, and arrow flight to its eventual impact point.

THIS further refines the problem at hand, just where is that point the mind picks out? That predetermined point so often talked about by freestylers is equally important to instinctors. A point must be predetermined for each and every distance and size target. There are no short cuts if you want a good score.

For many archers that predetermined point is not always on the face. Many times it isn't exactly a "spot". For instance, when shooting with both eyes open a different picture is seen than when aiming with one eye closed. The spot might be to see the point of your arrow in your periferal or secondary vision and then lay that point on a spot that is also in your secondary vision all the while you are

TAM AND ARCHERY WORLD



THE PICTURE an archer should see for point "on" aiming is the point of the arrow laying right on the spot at full draw. The archer should move away or towards the target as necessary to find the exact distance where the arrow will actually fly into the spot where it is aimed. This is point "on"

actually focused on the center of the target with your direct vision.

EREIN lies the answer to much of the problem. There are very few good instinctive shooters around who shoot with one eye closed. Most of them learn the knack of seeing with both eyes and still use one eye, the master eye, as the controller in directing and aiming the arrow. As I later found out, this is very important to bowhunters also.

Depth perception means the ability to determine how far away something is from yourself or your eyes. This computation is done by a method called triangulation. The long sides of the triangle being the line of sight from each eyeball to the object and the short side the distance between the eyes. Close one eye and the triangulation is lost, depth perception becomes impossible. Also, when one eye is closed the archer can see only half as much as he could with both eyes open, in fact frequently sees

(Continued Next Page)

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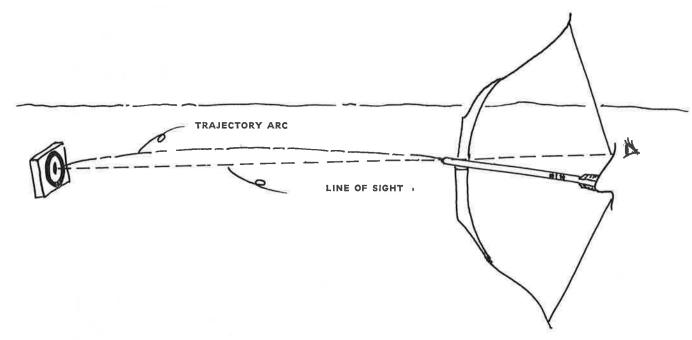
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INSTINCTIVE

(Continued from Page 29)

less than half as much because if he is using good line up procedures the bowstring, the bow, and the arrow itself will all be blocking some of the view of the one aiming eye.

OPEN the other eye and all can be seen that is blocked from view by the aiming eye. The only things that can't be seen with both eyes open are the things obstructed to view for each separate eye.

Back to aiming. Now, with both eyes open, find a distance from a given target where the point of the arrow appears to be exactly on the bullseve and when released the arrow actually goes into the bullseye. If you are shooting a 40# bow this could be around 55 yards using POINT "on" is the distance from the target where the line of sight into the bullseye and the downward drop of the trajectory arc cross each other. There is only one dis-tance for this to occur with each anchor, draw length, bow weight, etc

a conventional anchor and hold. This means that at 55 yards, the cast of your bow will propel the arrow in such a fashion that the arrow will strike the target at the same point where the point appeared to be while aiming.

HIS is called the point where the bow is "on." Find your point "on" and work up and down, holding above the intended impact point for greater distances and holding below the intended impact point for shorter distances. Beware that where your "on" point is may vary greatly from anyone else's.

The point "on" is determined by the picture an archer sees. To date I have never found two archers who see exactly the same picture. You might be "on" at 25 yards or 75 yards. Each archer must find his own personal "on" point. Change anything in your setup (arrows, bow, bow string, fletching, anchor, etc.) and your point "on" will change. There is only one point on for each setup and each archer.

By the time I became aware of all the problems an archer faces in trying to hit a target I wasn't so sure I was ready to go deer hunting with the bow. But it was only May and I had until October to refine my shooting.

Next Month: How to find more than one "on" point for your instinctive shooting.





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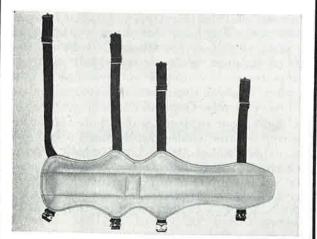
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Amateur Regs Re-Written; Ams, Pros May Compete For Same Non-Cash Prizes Below The State Level

After close consultation with and the approval of the Amateur Athletic Union and the United States Olympic Committee, the NAA Amateur Rules, which govern amateur eligibility for all organized archery, have been re-written.

Approved by the NAA Board of Governors, the regulations go into effect Sept. 1. Although the majority of the regulations have not changed, there are some notable revisions. The highlights:

- 1. Below the state level, amateurs and professionals may compete for the same awards, as long as the awards are not cash and do not have a cost exceeding \$70 for first place, \$40 for second place and \$30 for third place. The particular rule—it is No. 8, entitled Amateur Competition With A Professional—also reads: "The professional may participate with the amateur in state, regional, national and international events but shall not compete for the same titles, prizes and awards as the amateur."
- 2. Professionals may be re-instated as amateurs under Rule 9. They may "apply for re-instatement to amateur status and, if such application is approved, be eligible to participate in amateur competition after one year from the date of last acts of professionalism.

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An archer shall be re-instated only upon recommendation of the Eligibility Committee and approval of the NAA Board of Governors. An archer so reinstated shall not be eligible to compete in any state championships, district (two or more states) championship, national championship, international competition or Olympic Games.

3. Spelled out in detail is the matter of amateurs receiving expense money—i.e., money for transportation, lodging and meals—for travel to and from archery events. In addition to costs of transportation, \$20 a day is allowed save in certain circumstances. Archers who accept expense money must submit a report to the Board of Governors. Details are found in Rule 5.

As reported in a recent issue, amateurs may not accept pay for coaching, but may be paid for instructing in schools, colleges, camps, recreation and charity programs, etc.

Most of the old rules, basic to amateurism in any sport, still stand. Archers may not be paid for exhibitions; archers' names and pictures may not be used in ads and they may not endorse products. Archers employed by a firm on a regular on-the-payroll basis may not receive paid time off for practice and may not accept expense money from their employer. But they can be paid for their regular two-week vacation. Self-employed amateurs who are in the archery business may not exploit their shooting prowess or names or photographs as a basis for selling merchandise.

The new regulations are seen especially benefiting clubs and leagues which have been faced with the problem of offering two sets of tournament trophies. They also liberalize the award system; although an amateur cannot compete for cash at any level, he can compete for merchandise in the values of the amounts mentioned.

Copies of the new rules are available from the Chicago office of the NAA.

Professionals seeking re-instatement to the amateur ranks under the new rules should contact the chairman of the Eligibility Committee, Marvin Kleinman, 207 Second National Bldg., Cincinnati, Ohio.

St. Louis Club Hosting Midwestern Aug. 21-22 In City's Forest Park; FITA, Two Americans, Clout Planned

A FITA Round and twin Americans—with a clout shoot for dessert—are on the schedule for the annual championships of the Midwestern Archery Assn., set for Aug. 21-22 at the Forest Park range of the St. Louis Archery Club.

The shoot, being billed as an "All Archers Tournament," will see a purse for the pros and, following the first day's action, a buffet supper and dance at the city's 6-Gold Indoor Archery Range. Tab is \$2.50.

Shooting fees: \$6 for seniors, \$3 for juniors; cut the prices in half if you plan to shoot just one day. Send registration money plus all details—name, address, NAA class, age, f-s or barebow, amateur or pro, banquet reservation, to George H. Budde, 1027 Lynncrest Ct., St. Louis, Mo. 63136. Make checks payable to Midwestern Tournament c/o St. Louis Archery Club.

George says that nearby motels are the Admiral Ben Bow, 5120 Oakland Ave., St. Louis, \$10 single, \$16 double, and The Diplomat, 433 N. Kingshighway, \$10 and \$14. Hotels: The George Washington, 600 N. Kingshighway, (\$4 and \$5) and The Westgate, 706 N. Kingshighway, (\$6.50-\$8.50).

NAA Interscholastic Biggest In Event's History; Susan Helwig Top Girl; Greene, N.Y., Top Team

NAA's 26th annual Interscholastic Mail Match saw a record 27 high schools enter 47 teams of six girls each, reports Miss Edie Russell, the famed Bloomfield, N.J. instructor who has overseered the tournament since its inception.

The girls shot the NAA Interscholastic Round, 30 arrows at 30 yds. and 30 at 20 yds. Once again, Lura Wilson's team from New York's Greene Central High won the Class A championship. Top individual archer was Susan Helwig, of Cincinnati's Woodward High, who shot 536 out of a possible 540; every arrow was in the gold except two at 30 yds.

Class B winner was Northfield (Mass.) High; Class C went to Cato-Meridian Central School, Cato, N.Y. and Class D was won by Eastern High, Washington, D.C. Pennsy entered the most teams, and Westtown Friends was tops in the state. Highest scoring new school was John F. Kennedy Memorial, Iselin, N.Y. An actual total of 288 girls competed.

Runners-up to Susan for individual honors were three Greene, N.Y., girls—Cathi Towner, 530; Sue Eggleston, 522, and Carol Spencer, 522.

Hamilton, Marshall Win Iowa State

Bob Hamilton, Des Moines, shot 746/718 Americans and a 972 FITA to win amateur honors at the Iowa championps at Des Moines, and non-am honors went to Rodger Marshall with a 1446 Dbl. Am and a 923 FITA. Top scorer, though, was PAAer Ed Rohde, whose Americans totalled 1562 and whose FITA was 1109. Doreen Wilbur was winning amateur gal with a 1468 American total and a 977 FITA.

EASTERN WON BY DICK WEAR AND CAROL HINCKLEY; '66 SHOOT IS SET FOR RUTGERS UNIVERSITY

Dick Wear, of Baltimore's Oriole Archers, led all the way to win the 86th annual Eastern Archery Assn. championship tournament at Springfield College, Springfield, Mass. Wear, who was defending his Eastern title, shot 801 York, 1001 FITA and Americans of 724/782. He beat Walter Chersack, of New Jersey's Pike Brook Archers, whose line was 716/981/712/730.

Although the highscoring woman was visiting Nancy Kleinman, the championship title went to Carol Hinckley, who totalled 2890 for her Hereford, National, Columbia and Twin-Americans. A surprise at the 1965 renewal of the nation's oldest continuing tourney was the Intermediate winner, J. K. LaVasseur, whose 746 was the best American.

Chersack was elected Assn. president, Shirley Renard secretary. Next year, Rutgers University, at New Brunswick, N.J., will be the tournament site, and July 5-9 will be the dates.

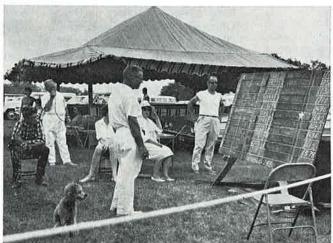
Other winners: Intermediate girls, Lucy Ann Marson; Juniors, Michael Stampfle and Leslie Reynaud. Top teams were the Melrose (Mass.) Archers, Waltham (Mass.) Archers and Oriole. Behind Wear and Chersack: Joe Silva, Bob Kaufhold, Peter Marson, Ed Choyce, Brown Dunning, Brian Metzger, Gil Frey, Adam Konchus. Janet Jacob was runner up to Miss Hinckley.

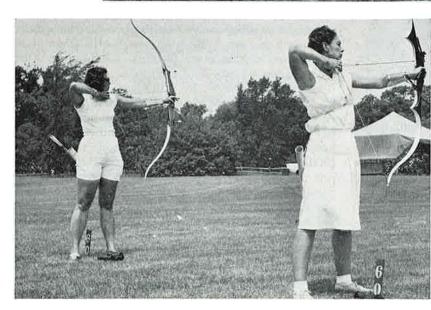
Some Notes On The Tryouts; Three More Archers—Kleinman, Medert, Frost—Joined The Squad, Paying Their Own Way; Team Numbered 11

Those U.S. Team Tryouts—the results got in under the wire for July's issue—made for a handsome and colorful event; there's no handsomer place in the nation than Oak Brook for a big target shoot, and no better club than Julius Butler's Royal Archers to run it. Scores were held down, we'd say, by the wind and by the thunderstorm which swept in with fifteen arrows left to be shot; but shot they were.

Due to deadlines, we're writing this early in July, and when you read the issue, the World Championship event, in Vaesteraas, Sweden, will be over. Our Team is a good one-and a big one. At the last minute, money was raised by Chicagoans to pay the way of George Frost, who placed fifth with 1057/1102. And Nancy Vonderheide Kleinman (along with Marv, her husband) paid to go, as did another Cincinnati archer, Mrs. Anna Mae Medert. Team strength? A total of eleven, plus the captain, George Helwig. We're not too much on predictions, but we feel that (a) the U.S. will have some trouble winning 1,2,3 on both the men's and women's squads; (b) it wouldn't surprise us if, as you read this, a husband and wife, the Thorntons, are wearing the crowns. At any rate, you'll find pix from Oak Brook on the next two pages, and a report on what happened in Sweden in the September issue-along with coverage of the National at







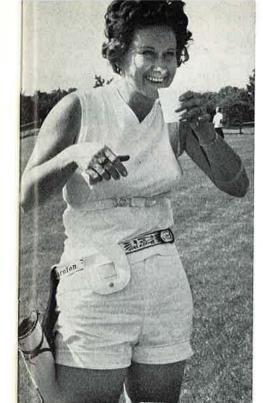
Page Thirty-four



Top left, in a lunch-break scene, are Julie Hamilton, wife of the famed Max; she placed tenth. At her right, World Champ placed tenth. At her right, World Champ Charlie Sandlin, who was way down the list, and at her left, Lucian Sandlin, cousin to Chuck. Above, Nancy Kleinman, who came in eighth. Third man on Team, Al Muller, is holding the sledgehammer—to drive sun umbrella into ground. Bottom left are Ardelle Mills, foreground, fourth gal on squad; Anna Mae Medert is shooting with her. Nancy, Anna Mae and George Frost paid their own way to Sweden paid their own way to Sweden



TAM AND ARCHERY WORLD





Helen Nelson, left, captured the top spot on gal's squad with 1088/1016 FITA rounds and Joe, her husband (he was '61 champand Joe, her husband (he was '61 champion of the world), won for the men with score of 1121/1111. Above, beaming at her hubby Bob is Grace Amborski, who was a '61 Team member. At right, the World Champion from Minnesota, Vicki Cook, who placed second, ahead of Grace. Tryouts took place at the Oak Brook International Polo Club at Oak Brook Ill., and were hosted by the Broyal Brook, Ill., and were hosted by the Royal Archers Assn., headed up by Julius Butler



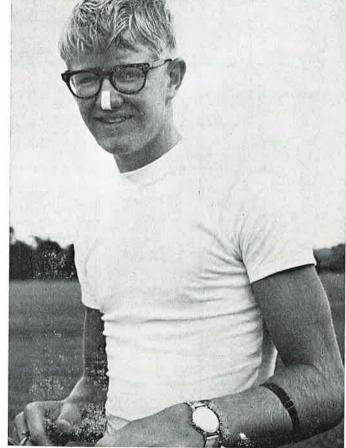
NAA CAMERA AT THE TRYOUTS

Donna Schroeder, below, a Phoenix, Ariz. high schooler, was the high schooler, was the youngest, gal. Center, Cotton Walker, who led at end of first day with highest round shot in Tryouts, 1128. A field archer primarly, Cotton's from Florida. Far right, Dick Tone, 19-year-old Arizona archer who placed fourth in the trials









August, 1965

Page Thirty-five

BUILD A MODERN COMPOSITE

PART ONE

"YOU MUST BE OFF OF YOUR ROCKER," or "I CAN'T EVEN FIX A LEAKY FAUCET. These and sundry other kindred remarks are made by the average archer when I have suggested he build his own modern composite recurved bow. However, ten years of selling the materials to build this type of bow has convinced me that the mistaken opinion that building a bow requires some super craftsmanship that is only acquired with many years of apprenticeship. THIS
IS A MISTAKEN OPINION!

Granted, building a composite bow is an ambitious project. Two things are required. Good, complete instructions and patience and attention to the instructions. I have made successful bowyers out of archers from fourteen to seventy-four. Successful? At least ninety percent! This is not a percentage derived from two or three aspiring bowyers. This is tabulated from in excess of one thousand cases.

When I first learned to build a composite, recurved bow the majority of the small custom bowyers were somewhat jealous of their hard-earned knowledge. At the time there were no books or pamphlets with detailed instructions.

> make a few random remarks pertaining to this project. WHY should I build my own bow? I would rate pride of accomplishment right on top. As stated before, it is an unparalleled thrill to feel an arrow leap from a bow you, yourself, have fashioned. Of course there is a large money

If you make the decision to try this project, develop patience. This is the one thing that will assure success over any other character trait or amount of knowledge.

This first part of the series (there will probably be five) will deal with

getting prepared for building your bow. Assemble the tools, materials and have ready at hand (preferably in a small room where nobody will disturb you) before proceeding to subsequent instructions.

HUNTING & FIELD BOW

tertaining hobby. Sometime during

nearly every archer's career, he builds some portion of his equip-

ment. I am very much in favor of

encouraging this part of our great

sport. It is a well known fact that

you can only get out of a sport

what you put into it. Building your

own equipment is a perfect oppor-tunity to put a little more into

archery than you can put into golf,

bowling, or many of the other in-

dividual sports available to sports-men today. Obviously, few people

can build their own golf clubs, golf

balls and bowling balls. You, as an archer, are lucky. You can

build your own arrows, bows, bow

strings, quivers and a host of other

accessories necessary to pursue the

It has been my observation that the serious bow hunter and field

shooter without exception has built

or does build part or all of the

equipment used in the field. Bow

hunting appeals to the type of man

who has the independence and the skills to build such equipment. The bow hunter is the type of man who takes great pride in accomplish-

ment. He would not long stay in

this demanding sport if this were

not true. If you, as a bow hunter,

field shooter or any type of archer

wish to heighten your sport to

the ultimate, build this modern,

composite bow. Only one time in

your life will you know the thrill experienced by seeing an arrow of

your manufacture projected by a

bow of your manufacture strike to

At this time, we would like to

the heart of your target.

great sport of archery.

If this is your first venture into bow building DO NOT JUMP AHEAD OF THIS SERIES.

Rather than being general instructions on how to build any type of composite bow (the length and design of laminated, composite bows are limitless), we have chosen carefully from literally hundreds of possible bow designs to give a bow with virtually every feature which the vast majority of experienced archers wish in a superior "all-purpose" hunting, field and target bow. We will give you the choice of three different bow lengths. To assure success, and approximate bow draw weight desired, do not deviate from these lengths. This limb and riser design was not meant to be made any shorter or any longer than the indicated bow lengths in Figure #1.

We have built many bows of this design and satisfied archers, such as yourself, have built many thousands. This bow will not take a back seat in the speed department to any bow on the market today. As a matter of fact, one of the fastest bows that I have ever tested in my trajectocaster was a bow built

of this very same design.

The materials used in this bow are standard 13/4" width materials throughout, finishing to a 15/8" width in the limbs. Most of the better professional bowyers prefer this width as it perfectly compromises the wide limb design, with loss of efficiency and tendency to be unstable, with the narrow limb design which do not have sufficient fibreglass area to provide adequate safety from breakage.

We wish to repeat. DO NOT HURRY WITH THE BOW'S CONSTRUCTION !!! This cannot be stressed too much. More beginning bowyers ruin their bows through rushing the process of construction than any other cause. Proceed only as far as this part of the series explains. Do not jump ahead.

(Continued Next Page)

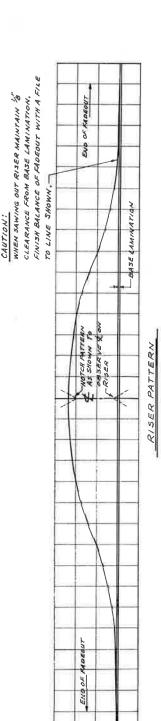
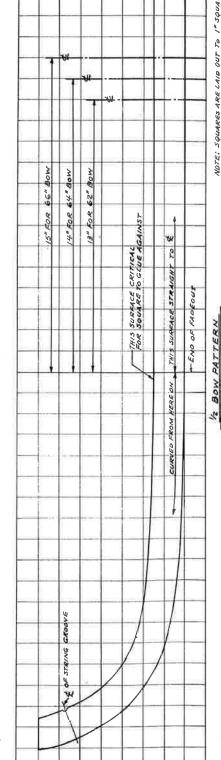


FIGURE #1-Layout of bow form and riser



By TOM JENNINGS

ninety-five percent of the archers who walk into my shop can build a modern bow. Many archers have

Some years ago, it occurred to me that if the average man could build complicated electronic radios, amplifiers, hi-fi sets, etc., etc., via the kit and good instructions, that building a composite bow with instructions of equal quality would be a piece of cake. I sat down and, with the aid of my good friend, Doug Kittredge, wrote a small instruction booklet upon this very subject. In the succeeding years, this little booklet has proved my theory that building a modern, composite, recurved, glass faced and backed bow can be accomplished with few failures.

Archery is one of the few sports that can be made into a very en-

TAM AND ARCHERY WORLD

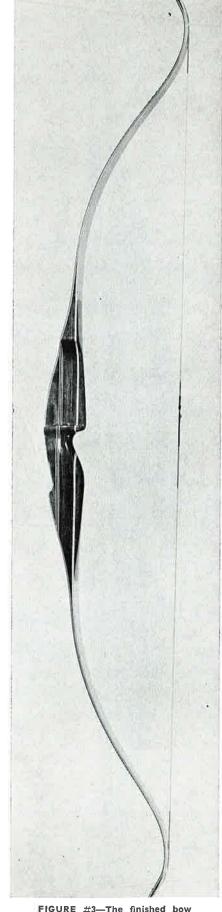


FIGURE #3-The finished bow

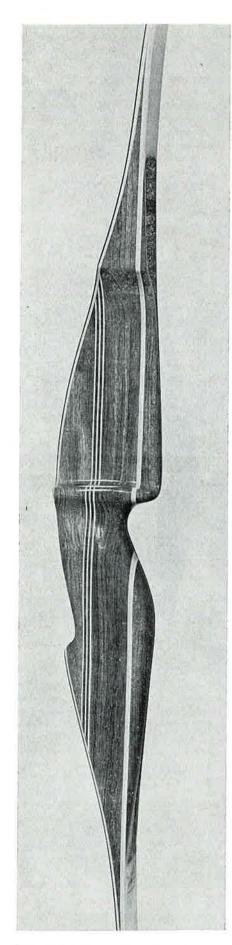


FIGURE #4-Riser section of finished bow

BUILD A BOW

(Continued from Page 37)
A WORD ABOUT EXPECTED
BOW WEIGHT:

Before any bow is built, it must be understood that the greatest "bug-a-boo" is the prediction of the final bow weight. So many factors are involved that it is virtually impossible to predict within often as close as twenty pounds what a particular combination of components will produce in bow weight. This is particularly true when a change in design is made. Changes in bow length, riser length, recurve amount, width of limb, degree of reflex or deflex, etc., make great differences in the final bow weight.

Even by following the instructions and plans in this article to the letter, it is possible to deviate from an expected bow weight. You might use a little more or less pressure when gluing which will change the thickness of the glue remaining in the joint. Your "fadeout" will be slightly thicker or thinner, etc., etc. All these items added together in the wrong direction could make a difference of five to ten pounds quite easily. This is when you are using a perfected design.

When a professional bowyer makes up a new bow design, or changes his form, he figures on building at least three bows as "controls" from which he can compute possible thickness combinations of core laminations and fibreglass for future bows. He carefully measures each component of these "control" bows and varies one from the other by a known amount. His finished bows then give him an idea as to what change in component thickness results in what weight change. From his very first bow he keeps a detailed record of exactly what bow weight results from each set of components he glues up on this particular form. Even then, after building fifty or one hundred bows, he feels lucky if his bows average out within ten percent of predicted bow weight.

Fortunately, a bow that is too heavy can be somewhat reduced in weight (normally about seven to ten pounds). There will be a chart of thicknesses recommended for this design of bow in all three different lengths. THESE RECOMMENDATIONS WILL APPLY ONLY WHEN YOU FOLLOW THE EXACT DESIGN INSTRUCTIONS OF THIS BOW! If any changes are made in the design or dimensions, it is improbable that

our recommended materials will result in the weight stated and the builder will have to proceed as though he were building an entirely new bow design. He will have to expect to build several bows before the correct weight is achieved. THIS IS THE MOST IMPORTANT REASON WHY ALL BEGINNING BOWYERS WILL BE EXTREMELY WISE TO FIRST MAKE A "KNOWN" BOW DESIGN.

RAW MATERIALS AND TOOLS REQUIRED:

The following are row materials and tools that you should assemble before you start to build your bow. These raw materials and tools are excluding the actual materials used in the construction of the bow. We will get to those actual materials subsequently.

RAW MATERIALS — Needed, but not used in the bow:

l piece MAPLE BOARD, for building glue form, pressure bar and pressure blocks. Straight grain, completely dry, no knots, 13/" x 38" x 7" wide. Can substitute Birch, Magnolia, or "Close Grained" Fir. Be certain board has absolutely no warp.

I only OLD INNER TUBE

l only OLD INNER TUBE FROM AUTOMOBILE OR TRUCK TIRE.

1 roll WAXED PAPER. Saw off a 2" wide roll from end of large roll. Polyethylene Plastic sheet is good.

1 roll MASKING TAPE, 1" wide. 1 only STIR STICK AND PAPER CUP FOR MIXING GLUE.

2 only PRESSURE PADS. ½" thick Plywood Veneer is best, cut so top grain is across width. Cork, Cardboard, hard rubber will also work. Cut one pad ½" x 32"; the other 1½" x 32".

FINISHING MATERIALS, LACQUERS, ETC., FOR FINISHING BOW. HOLD UP ON FINISHES AS WE WILL SAY MORE ABOUT THIS LATER.

TOOLS REQUIRED: 1 pair HEAVY SHEARS, for cutting Inner Tube.

I only STEEL MEASURING TAPE, 6 foot length or better. 1 only CARPENTER'S OR MA-

CHINIST'S SQUARE.
1 only PENCIL.

l only BENCH VISE.

I only MEASURING CUP, 1 ounce. (Or scale if glue is to be weighed)

1 only PAINT BRUSH, 11/2", inexpensive type.

STICK TO THE INSTRUCTIONS

l only HALF-ROUND BASTARD FILE, 12".

l only MILL BASTARD FILE, 12".

l only RAT-TAIL BASTARD FILE, 8".

1 only RAT-TAIL BASTARD FILE, 4".

I only VIXEN "BODY" FILE (Optional).

l only HACK SAW. l only "C" CLAMP, 6".

1 pair PRECISION MICRO-METER OR MACHINIST'S VER-NIER CALIPERS (Optional).

1 only CARPENTER'S HAND PLANE.

1 only METAL WOOD SCRA-PER. THE USE OF A POWER BAND

SAW.

MAKING PATTERNS FOR GLUE FORM AND HANDLE RISER:

If you are going to build a bow, you might as well build it right from scratch and do every single step, not only for the knowledge but it's a lot of fun. You will have to lay out your own full size pattern for the form and riser section of the bow. This is a little bit of drafting but it is really not complicated when you work from Figure

All the materials needed here are a clean piece of wrapping or butcher paper, about 3½ feet long, and 2 feet wide, a good straight-edge (a straight yardstick will do), a fine pointed pen or pencil. Actually the pencil is better in case you must do some corrections. A smooth surface to lay the paper out on. Proceed as follows. Number one. Lay out the surface of your paper with a grid of 1" squares. Use the fine pointed pencil. Try to be quite accurate with this. Lay out as many squares as there are in Figure #1.

Step two. You must transpose the dark gluing surface of your form from Figure #1 to your full size grid. To do this, follow the dark gluing surface line along the squares in Figure #1 and make dots on your grid at each point the glue surface line intersects a grid line. When you have done this for the full length, connect these lines by hand (or if you have a French curve it is a great help).

Note: depending on which center line you are going to use, the glue surface will be straight from center line for a distance of from 13" to 15". This distance will require no plotting. From this point to the end of the recurve, you will have to plot a curve. This is not a true arc but a compound curve.

Step. 3. After you have laid out main gluing surface line, sketch in the rest of the form. This thickness of the form is not too important. Simply draw a line following the general contour of the glue surface and about 2" away.

Step 4. Select and mark in the

Step 4. Select and mark in the center line of the length of bow that you wish to make. This is the point that you always zero the center line of all materials to be glued. Mark string groove point as indicated in Fig. 1. (There is no groove in the form as it may appear in drawing). BEAR IN MIND WE ARE MAKING A ONE-HALF BOW FORM. YOU DO NOT HAVE TO MAKE TWO OF THE LAID OUT FORMS THAT YOU ARE NOW DOING.

The most important single factor in insuring the success of your bow is the quality of your bow form. Errors present in the glue form will also be present in your bow. Your bow will take the image of your form. The real beauty of the one-half bow form method of building a bow is that even if you do have some irregularities in your form, they will be duplicated in both limbs and will make your bow draw equal in tiller.

Step 5. While you are on the drafting kick, lay out your handle riser pattern. Follow the same procedure as in doing the gluing surface line of the half bow form. The handle riser pattern is used to cut the glued riser to shape after it has been glued to the base lamination. (If some of these terms and some of these statements do not make sense at this time, disregard, because before it comes time for you to use this riser pattern you will understand what it says.)

Step 6. Be sure you lay out all items in the handle riser pattern just like in Figure #1 including small dotted lines which intersect the center line. When the pattern is complete and you are ready to glue to your glued-up riser section, cut notches at these dotted lines to enable you to line the center line of the pattern with the center line marked on the riser width. Note: "On each end of the pattern is the point where the riser will begin to

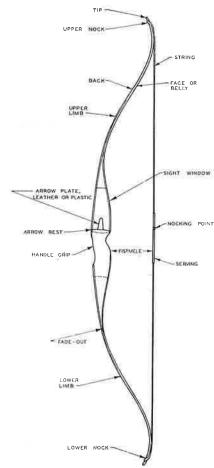


Fig. 5. Parts of a bow.

get close to the base lamination and the final fading out process must be done by hand, rather than attempting to cut closer with the band saw. Mark this point on your pattern so you don't forget when you are sawing.

Step 7. After your patterns are drawn to your satisfaction, cut them out of the large piece of paper, stay about 1" away from all pattern lines (except for the notches in the riser pattern).

Step 8. You will now be ready to continue with the general instructions for building the bow. Your patterns are ready when they are needed.

MAKING THE BOW GLUE FORM:

A very important factor in insuring the success of your bow is the quality of your bow form. Errors present in the glue form will also be present in your bow. BE PREPARED TO SPEND ENOUGH TIME BUILDING YOUR FORM BECAUSE TRULY THIS IS THE BASIS OF A GOOD BOW.

Commercial or production forms (Continued Next Page)

BUILD A BOW

(Continued from Page 39)

are normally made of metal. However, wood is the material used when only a few bows are to be made. A well dried and cured piece of hard Maple is preferred to any other wood; however, Birch, Magnolia, or even close grained Fir will be a satisfactory job. TAKE CARE THAT THE WOOD YOU SE-LECT IS NOT WARPED, AND IS FREE OF KNOTS, SPLITS.

Step 9. Using the form wood that you have previously selected (the wood should be 13/4" thick), no thinner and not more than 1/8 of an inch thicker, 7" wide and at least 38"long. The wood should be planed on both sides. In most cases, the lumber yard where you purchased this wood will be happy to do the planing job for you. In many cases the wood can be bought already planed. Be sure and check that the thickness is 13/4 or slightly more. By making a form for only one-half of the bow leigth, each limb will be glued from the same form and will thus be absolutely identically shaped. With a one piece, full length form, it is a very difficult task to get both limbs the exact same shape.

In fact, they cannot be made as

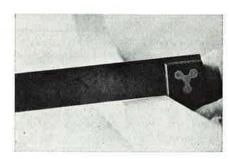


FIGURE #6—Checking form for a square gluing surface

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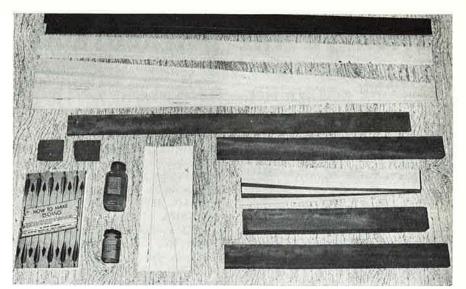


FIGURE #2-Raw materials for building a bow

close as the use of the same form for each limb. This makes bows produced from a full length form more difficult to tiller and unsatisfactory in many other respects. BY USING THE "ONE LIMB FORM", YOUR BOW WILL BE MORE PERFECTLY BALANCED THAN ANY PRODUCTION BOW ON THE MARKET!

Step 10. Using the glue form pattern that you have previously drafted, glue directly to the piece of wood which you have selected for your bow form. This may be glued with any form of paste, Willhold, or wood cement. Take care that there are no wrinkles in the pattern or that you stretch the pattern so as to change the shape of the line that is going to form the curve of your bow limb.

Step 11. You are now ready to saw out your form. (A band saw is a power tool that is hard to dispense with in bow building.) If you do not have one, you surely know someone who has and will be willing to let you use it for a few minutes. Offer to buy your own blade. When the blade is new, you will saw only wood, thus getting a very accurate cut on your form and your riser section.

Later you will be sawing fibreglass which dulls the blade very badly and makes it worthless to saw wood with. Check the saw blade on the band saw with a square to be sure the blade is cutting absolutely perpendicular to the table. DO NOT CUT INTO YOUR GLU-ING SURFACE LINE WHEN YOU ARE SAWING OUT THE





FIGURE #7-Hand filing half bow form

BOW FORM. After rough sawing close to the guide line, this glue surface must be carefully worked down with the hand plane, filed, and scraper. Working around the recurve section will require the use of the round side of your halfround file. It is very easy to get a

"crowned" or curved surface when filing. Repeatedly check this surface with your square and remove the crown with your scraper. WORK SLOWLY! See Figure #6.

Note. Your form is of the "cradle" type and your bow is glued along the inside surface. As the sides of

your form are planed smooth, you will be able to square from either side while filing and scraping the gluing surface of your form. THIS SURFACE MUST BE SQUARE WITH THE SIDES OF THE FORM. If this surface is not square, your bow will have twisted recurves or limbs and even if you manage to get them to line up when the bow is strung, the recurve will not stay straight when drawing the bow.

This is to be a five part series. It would be extremely advantageous to read the complete instructions at one setting. Some of the things that we say in one part will be tied in with subsequent parts. You will be all right if you have the will power not to try to go ahead on your own. If you have lots of patience, you might wait until the end of the series.

However, if you are really bit with the bug, this really is not necessary. Information on the layout of the form and the handle riser section is all in this part and could be done before you read any additional parts of the series. This first part is a little dull and doesn't give you a lot of encouragement. However, in the next part we will start to build THE BOW.



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WHEN HIT in a vital area this buck will leave a legible blood trail to follow. Use it for that purpose and track your deer to recovery

The Bloody Truth About Blood Trails

By Homer "Dutch" Wambold

Have you ever heard the saying—"Don't believe everything you read in the papers?" This could apply to the bowhunter when it comes to blood trails. With a slight change we can say—"Don't believe everything you see!"

When a hunter employs a shooting tool that demands maximum blood loss by hemorrhage to down the game being hunted, it is vitally important to properly analyze the blood sign after the game has been hit with a hunting arrow.

Use a blood trail properly—not as a means of determining how much blood the deer has lost enroute! Instead use such blood sign as a means of tracking your game. At no time should the bowhunter attempt to estimate the amount of blood lost by the deer by what he sees on the ground.

Blood patterns do tell various things to the experienced hunter. Such as: What part of the anatomy the hunting arrow has penetrated, but very rarely just how hard hit the deer may be.

A lung hit will usually throw a blood pattern of spray to the right and left of the trail. Such blood pattern will show a frothy pink color. This is due to the force with which the blood is expelled from the thoracic or chest cavity, where the entrance wound of the arrow has been inflicted. Bear in mind that most such hits find the arrow still imbedded in the chest of the deer. This means that all blood forced out of the chest cavity is restricted in volume due to shaft blockage.

Hence such hits will fool the tracking hunter when the blood pattern appears weak and not easy to find. When the arrow passes through the chest area and out of the opposite side of the deer, there are two wound holes which will permit this spray to be expelled in a more profuse manner. This will result in a prominent pattern which is quite easy to find. Bear in mind that both types find the same amount of blood loss taking place—but the determining amount is hemorrhaging inside the deer—NOT ON THE GROUND!

A hunting arrow that severs a major artery, or a combination of arterial and veinous cutting, will produce a blood pattern of a different nature. Such patterns will usually be a continuous dripping or spattering type, and the blood will be darker in color—either a bright red or a deep dull red color.

The Crimson Trail On The Ground Does Fool The Bowhunter

Blood patterns from such hits are easy to find, and easier to track than the lung hit patterns.

The paunch hit, or gut-shot deer leaves very little sign-on the blood trail. Tracking of such hits is extremely difficult, and many times finds no blood sign for distances up to several hundred feet. The pattern is slight drops now and then, with small pool patterns when the deer stops on the trail. These pool patterns will measure from one to three inches in overall size, but be faint in color. Upon close examination the first footage of such a blood trail may show a slight green or black cast to the color of the blood. This is due to the contents of the intestinal tract being mixed with the external bleeding.

When the tracking hunter comes upon the bed of his wounded deer, he is apt to find what appears to be heavy blood loss. The spattering of blood where the deer milled around before laying down, or before again taking flight, is emphasized by the added pool pattern where the deer had laid. Such pool patterns can measure up to 12 inches in size, but the amount of actual blood necessary to make this pattern is very little!

The remark heard by so many hunters so many times—"That deer can't go far, look how much blood it is losing" as about as far from being fact as possible!

The total blood needed to produce a pattern typical of a good lung hit on a whitetail deer which continues for 100 yards—will not fill a whiskey shot glass!

A hard hit deer which has a major artery and several large veins cut by the broadhead requires only a table tumbler glass of blood to apply the pattern found on the blood trail!

The nemesis of the bowhunter the non-vital gut-shot deer can travel that same 100 yards leaving the hap-hazard blood pattern it does with about a large thimble of blood!

So when you say when you find the wounded bed of your deer—"here is real blood loss!" Again you are wrong. All of this has been produced with less than half a table tumbler glass!

True, there is a far greater loss of blood taking place in any of the (Continued on Page 44)

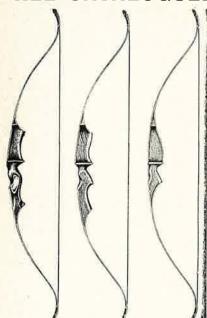


A HARD HIT that cuts arteries and veins will leave the following type pattern for the bowhunter to follow . Following such a hit immediately will get you to your deer within minutes

LUNG HIT blood trail patterns may look something like this with the spray of blood to the right and left of the trail as the deer continues in flight



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(Continued from Page 43)

good vital hits—for you are bound to find your deer down at the end of that 100 yard blood trail. But make your mind up right now that this determining blood loss has taken place where you cannot see it on the ground! Where is this? Inside the animal, where it pools in the abdominal region and produces abdominal shock—the one and only factor that eventually drops your deer!

You cannot possibly determine what this amount of blood loss is by any sign you see on the trail. You can only surmise by careful study of the blood pattern where your arrow has entered the deer.

The wise hunter will then forget all wishful thinking, and settle down to a thorough tracking job, using every drop of blood sign to lead him to the downed deer.

What about stopping and sitting down for the prescribed waiting period after having followed the blood trail for a short distance, and having assumed that according to the pattern you have a lung hit? I say why? If you are correct, the deer can only travel a given distance after which it must fall. It's that simple!

Hemorrhage induced in sufficent volume by a hunting arrow that has cut into the lungs, cannot and will not stop after starting. If nothing else, the breathing action of the deer will see to that. This means that regardless whether the deer moves a short distance and beds down, or keeps moving for the distance of around 100 yards from the site of the hit-that deer will be down for the count at the same precise moment whether you follow right away, or sit down for a 15 to 30 minute wait! So why fool around, and stand a chance of having to hunt longer for your deer? If you follow the hit immediately, you may either sight the deer going down, or possibly hear the deer falling or threshing around in his final death throes.

None of the blood droplets you find on the trail are crimson crystal balls in which you can see the actual amount of blood loss the deer is experiencing as he tries to escape. They are excellent road signs that say "this way", and, also evidence to a great degree as to where your arrow has penetrated.

TAM AND ARCHERY WORLD



The rest is up to you, the bowhunter. Make the proper use of such blood trails, follow and recover your deer.

What if the hit is non-vital? Stay on the trail as long as you find any blood sign to lead you after the animal. You may stand the chance of getting within sight of the deer, and many times get another shot. Many bowhunters have done this and downed their deer with a second and much better placed shot—I have on one deer.

Let's have a little fun and see how much we know about blood in the Whitetail Deer. Pick the answer you think is correct on the following questions. After you have completed the quiz, you will find the right answers on another page. Check your score, and see if you qualify as a Bowhunter, Archer Hunter, or Arrow Buster.

(1) A hunting arrow kills by—

(a) Knock-down power

(b) Bow weight and total arrow weight

(c) Total blood loss

(2) Vital hits are only the—

(a) Ones that produce maximum hemorrhage and blood loss

(b) Brain and Spine

(c) Lung and Heart area

(3) The total life supply of blood in a Whitetail Deer is—

(a) Proportionate to the amount of points in the rack

(b) Different in male and female

(c) An ounce per live weight pound

(4) Non-vital hits should be followed by the hunter for—
(a) About 200 yards

(b) Only until the blood sign disappears

(c) As long as any blood or other sign shows the way (5) Blood trails of wounded deer

(a) Tell how far the deer will travel before falling

(b) Definitely indicate where the hit has been made

(c) Show the way to recovery of the deer

FIND WHITETAIL
QUIZ
ANSWERS
ON

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NON-VITAL blood trail may stop practically anywhere as the droplets cease to show on the trail. Hits in the paunch many times stop bleeding after a short distance. Blood loss on such trails and internally in the deer are at a minimum

August, 1965

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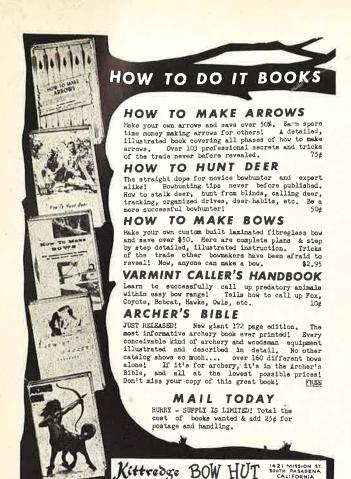
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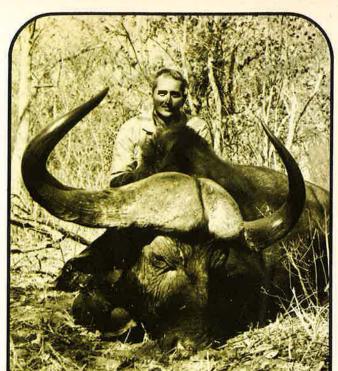
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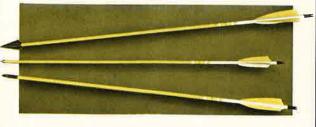
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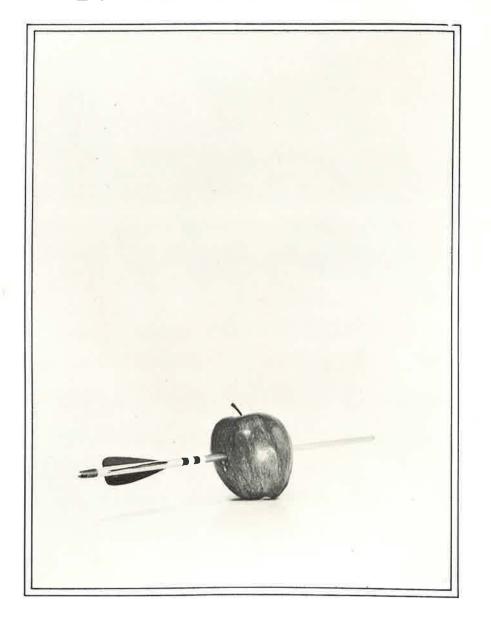
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