



THE MACHINE TESTED HOWARD HUNTING BOW

\$85.00

FREE BOW CASE COMES WITH BOW



70 YD. GROUP

This tight group was shot from 70 YDS. with a Howard Hunting Bow in a shooting machine. We believe that this kind of grouping directly reflects the years of experience, engineering and design that has gone into the Howard Hunting Bow. The eye-catching beauty of the Gamemaster will make you the envy of all your friends. We're sure that you will agree the Howard Gamemaster is in a class all of its own.

Leader in the field of Scientific testing

No expense is spared to bring the archer the finest, most accurate bow available. The Gamemaster bow was designed and developed under exacting and scientific testing. The old-time problem of designing a bow of maximum cast and still keep the bow 100% stable has been solved by Howard Enterprises. To design a completely stable bow, with maximum speed, is what Jack Howard kept in mind when creating the Howard Gamemaster.

To create a bow such as this requires the use of the finest testing equipment available, with many years of bow making knowledge behind it. Howard Enterprises utilized a special high speed camera to help develop such a bow. The use of this camera has brought about the controlled limb recovery of the Gamemaster. Our definition of controlled limb recovery is the science of controlling the limbs of the bow to recover in such a way as to give maximum stability to the arrow as it leaves the bow.

To further increase the accuracy of the Gamemaster, a special handle was designed. The purpose of this special handle is to add weight to the riser section. We feel that this added weight has a number of advantages but mainly helps to keep the bow arm steady after release. Naturally the ultimate of accuracy would be if the arm was held solid like the shooting machine. As this is not possible we feel the added weight to the handle is the next closest thing. This Ebonite weighted handle is an exclusive Jack Howard feature and CAN NOT be found in any other bow on the market.

10 DAY FREE TRIAL — YOU BE THE JUDGE

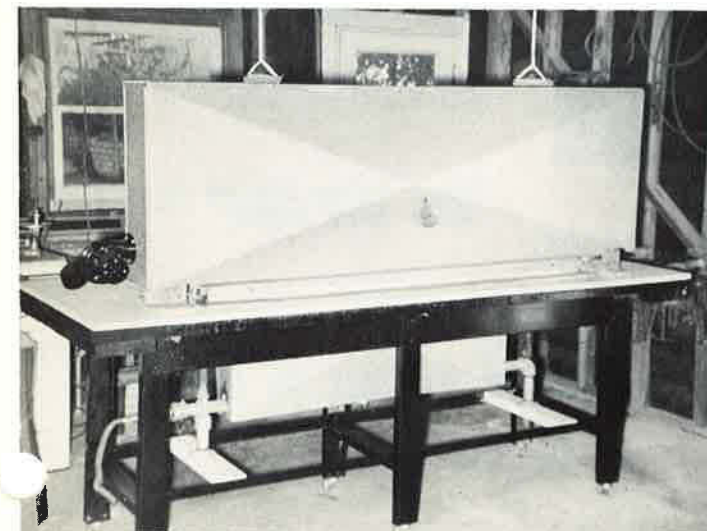
We realize that all bow manufacturers claim to have the bow with the most stability, speed, accuracy, etc., etc. This no longer means much to the average archer, and no doubt there is much skepticism among many. So we say, "you be the judge." The Gamemaster bow has been accepted with such enthusiasm we can make this 10-day Free Trial plan at no cost to you. We do ask that you send purchase price of bow with order to show sincerity of interest in the bow. If you are not satisfied in every way with your Gamemaster bow, simply return the bow within 10 days and we will send your money back plus your mailing cost.

SHOOTING MACHINE



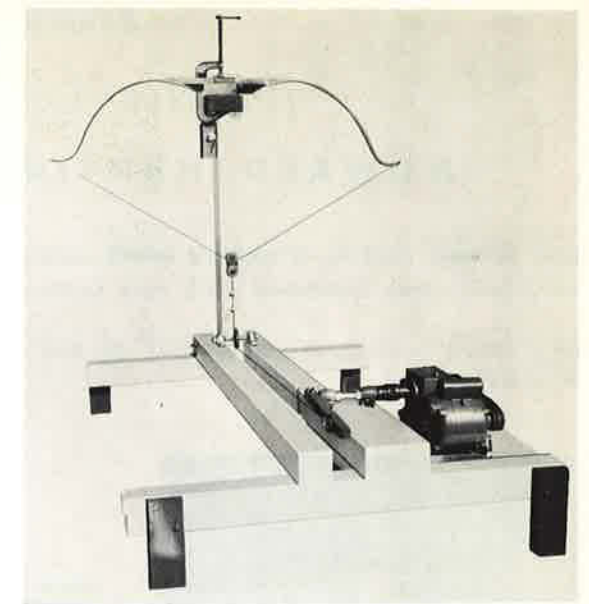
Jack Howard making slight elevation adjustment on 70 YD. deer target. Many years of experience in the development of better equipment for hunting has brought about the design of the Howard Hunting Bow. A great amount of our development has been with numerous designs in flight bows and the testing of flight and hunting arrows. The ultimate in speed and accuracy is our final achievement in the Machine Tested Howard Hunting Bow. The Gamemaster length is 5' 6".

CURING OVEN



One of Howard Enterprises huge overhead ovens being lowered into place to begin curing cycle of bow. This assures an even, controlled glue line temperature throughout the entire length of bow.

ENDURANCE TEST MACHINE



This machine is used to evaluate the materials that are used in the Howard Hunting Bow. Such materials as glues, hardwoods and most important fiberglass. We have endurance tested many different brands of glass backings and glass facings and have come to the conclusion the brand we use is the best money can buy.

An exclusive manufacturing feature is that every Howard Bow is pulled on this machine 300 times at 30". This exclusive feature is done for a purpose. The process acts as an initial stress relieve and is begun just before final exact tip aligning. This assures there will be no change of weight or shooting characteristics in the field.

THERE IS NO SUBSTITUTE FOR EXPERIENCE

As of the printing date of this brochure, Jack Howard has killed 36 deer with a bow. Many of these have been trophy bucks. The problems of the hunter are certainly not unknown to us. One problem exists that many are not aware of. That is, the reason you may have missed your deer could be due to a tricky bow, and not as you surmised—a poor guess of distance. When practicing or shooting on the range a person is comparatively relaxed. If by chance your bow was a little tricky, you may never realize it. But when shooting at a deer the story changes about 100%. The tension builds up worse than if you were top man at the national. It's how the bow reacts at this moment that counts. Just how far your arrow will be thrown off its mark by a slight plucking of the string could mean the difference between meat on the table and a very disappointed hunter. You will be amazed how well the Gamemaster reacts to a poorly released arrow.

HAVE ANY ARCHERY PROBLEMS?

We welcome any questions pertaining to hunting, hunting equipment or shooting a bow. Mr. Howard is a qualified archery instructor and instructs classes weekly. So if you have a problem, maybe we can help. All questions will be answered personally by Jack Howard.

ONE YEAR GUARANTEE

First two months unconditional, after which the replacement rate is 10% per month based on the purchase price.

HOW TO ORDER

When ordering bow or quiver if you send check or money order with order we pay mailing cost. On C.O.D. orders customer must pay all mailing cost. 25% required on C.O.D. orders.

FASTER BOW DELIVERY

We can sometimes give faster delivery if a little tolerance on weight desired is given. Ex—You want a 45 lb. bow but will accept a 44 or 46 lb. bow.

Whether you strictly hunt, shoot field or target, you will know you have decided on the finest, the first time you shoot your new Howard Hunting Bow.

SHARP BROADHEADS

But How Long Will They Stay Sharp?

HOWARD HUNTING QUIVER IS THE ANSWER

Comes in ^{two} models, Standard ~~\$9.75~~ ^{12.95} and Swivel ~~\$12.95~~. Both come equipped with rain protector.

When ordering swivel quiver, state waist size and whether right or left handed.

If your Broadheads are sharp when installed they will be sharp for that all-important shot.

Made of dual hardness rubber to hold shape, yet have an easy draw.



~~SWIVEL QUIVER~~

~~Comes with beautiful wide leather belt, worn same as standard except rotates 360° to allow easy positioning of the shafts to get thru those tight spots. For going through a large brushy area with swivel quiver, most hunters prefer to slip the quiver from center back position and swivel as shown above.~~



For those hunters that like to pack in as does Jack Howard, you probably have found the conventional shoulder quiver is not practical. The Howard Quiver is an ideal way to carry arrows on a pack trip. Worn in a position between the hip pocket and side pocket you can draw and shoot without any difficulty whatsoever.

SILENT

CONCEALED DRAW

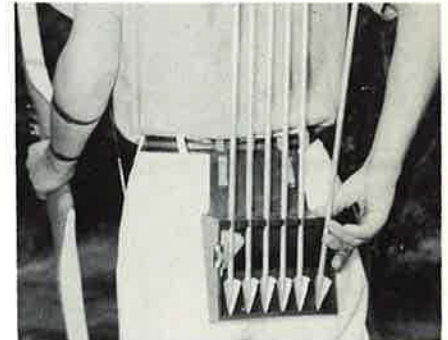
Arrows held firmly in place—No arrow rattle or feather rustle. A downward draw—No overhead movement to alarm game.

SPEED

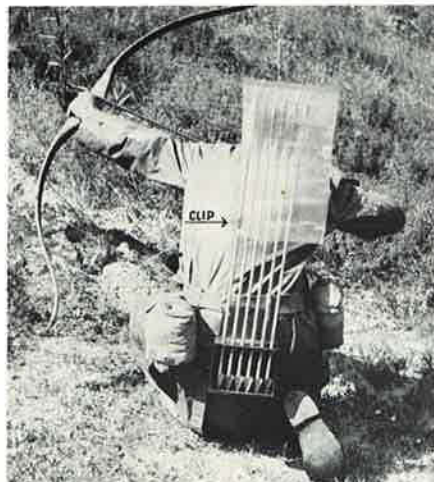
arrow may be drawn quickly from any position—kneeling or standing.

PLUS

SHARP BROADHEADS AT ALL TIMES



STANDARD QUIVER



RAIN PROTECTOR

When using rain protector, use clip that holds protector to quiver and clip to last arrow to be drawn as shown above.



For going through brush with standard quiver, simply push up on back of quiver so arrows rest against back as shown above.

Note: When inserting arrows into quiver rotate slightly. Pat. 176982

Proven by experienced hunters in the field to be the best

HOWARD ENTERPRISES

415 W. LOMA ALTA DR.

— ALTADENA, CALIF.

The **GAMEMASTER** ONLY BOW OF ITS KIND

Technical information on how the HOWARD GAMEMASTER is made

This technical information folder on how the Gamemaster is made has been enclosed so you will better understand the bow and why it must cost more. I have put this information on a loose sheet as some may not be interested or care to do this much reading, if this is the case, just lay this sheet aside.

Although I have released certain trade secrets in the past, there is additional information given here never before released. When I first started making bows over 25 years ago, I made them using the standard technique as the rest. This was before the introduction of fiberglass. After the glass became available I noticed that bows seemingly made identical varied in shooting characteristics. It was through my curiosity to know why this difference that the development of my present bow making methods came about.

HOW HANDLE RIGIDITY & GLUE LINE EFFECTS BOW EFFICIENCY

Before I give you information on the glass spine method I developed, I would like to give some other information that is perhaps a little easier to grasp. In past literature I mentioned briefly that one of the secrets of making high quality bows requires a long glue period (10 to 12 hrs). I have also mentioned importance of handle rigidity but did not give any details on either. I put these in the same category as they are sort of invisible and are not known by most bow makers, also both these factors effect bow efficiency. Only through the highly accurate spining of the bow glass technique that I use could these two obscure factors become evident.

As with many discoveries I will admit the importance of glue line and handle rigidity was found more or less by accident. In the case of the glue line, I had changed temporarily from the slow cure but very hard type glue I was using to the fast cure epoxies. It would have helped with my production considerably using a glue with a cure time of 10 minutes over the 10 hour glue I had been using. Quite to my surprise the poundages of my bows started dropping 3 to 4 lbs. using the epoxy type glues I was experimenting with over my usual type. Further checking of my records and a bit more experimenting left no doubt that a weight loss was suffered by use of epoxy glue in the bow limbs. As far as I know just about all the production bow manufactures use epoxies. A good majority of the bow glass manufactured can only be glued with an epoxy. This glass is made especially for a fast cure and can not be glued with the extremely hard type, slow cure glues.

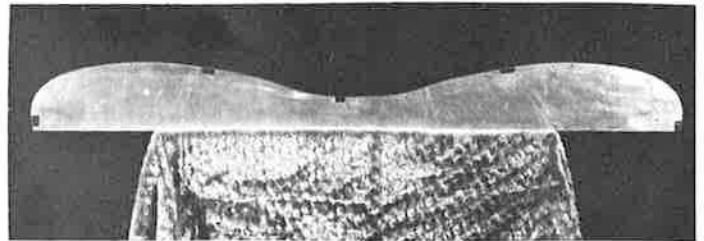
As with experimenting with different glues, at a different period I was working with assorted handle materials. Material of plastics, hardwoods and a combination of both. Like the results of my glue tests, I found that with certain handle materials of slightly less strength, there could easily be a drop of 4 lbs in bow weight. When making a bow, certain thicknesses of laminations are used to come up with a certain final bow weight. The glass spine method I use is the only method accurate enough to gage final bow weight and prove the two loss of weight factors I mentioned to be true.

There could be a lot more information given in regards to

tests I made proving out the handle rigidity and glue line factors. I think tho, it is more important to the archer just how these factors effect his bow rather than exactly how the tests were made. I also am trying to keep this technical information sheet as condensed as possible, I certainly don't wish to bore you. Actually how do these factors effect bow efficiency? When you purchase a bow of 50 lbs, so its 50 lbs. You might ask yourself what difference a slightly weak handle makes, you still have a 50# bow. This is true but a properly made bow of the same final weight can be much more efficient than one made with lack of thorough technical knowledge.

I think the simplest way I can best explain Bow Efficiency is to point out a certain fact that many are acquainted with. If you load your bow limbs down with a heavy bow sock, large string silencers, brush buttons, tip protectors and the like, you will loose a definite amount of speed. You still have the same weight bow as you had before, yet it is not as fast. The simple fact is that the bow is no longer as efficient because of the extra weight you have added to the bow limbs. Take two bows, both 50 lbs, say one is made with a very strong handle and a very hard glue line while the other bow is made with a handle on the weak side and epoxy glue. Both bows are 50 lbs. but the bow with the weak handle and soft glue line must have more of a mass of materials in the limbs to make up a loss of 7 to 8 lbs not suffered by the properly made bow. This added mass of materials adds unnecessary weight to the bow limbs. The bow is then not as efficient just as you loose efficiency when adding the weight of a lot of extras to the working part of your bow.

CONTROLLED LIMB RECOVERY



Basically **CONTROLLED LIMB RECOVERY** is designed into the bow through a Master Pattern and regulated by accurate control of the laminates

Some of you that have read my past brochures may remember my mentioning a little on Controlled Limb Recovery. As long as I am going sort of "Hog Wild" in presenting this technical information, I might as well go a little further into Controlled Limb Recovery. Controlled limb recovery is actually built into the bow through basic design and accurate control of the influencing laminates. High speed photography combined with machine testing played a valuable part in bringing about controlled limb recovery to my Gamemaster Hunting Bow. In simple

terms this is the science of controlling the recovery of the bow limbs in such a way as to give truest flight possible to the arrow.

I feel that many manufactures do not take much heed to real accurate control in the recovery of their bows limbs. Most do what they can to try and get the limbs to recover somewhat evenly but not knowing for sure just how they do recover. Because of many variables in production bows, both limbs may or may not recover equally. The upper limb may recover before the lower limb or visa versa. How does limb recovery effect arrow flight? Within certain limits a bows limbs can recover any one of the three ways just mentioned and perhaps give no problems. If tho the lower limb recovers entirely too fast (before the upper) the arrow nock will drop too low and will have to hop over the arrow shelf causing erratic arrow flight. On the other hand if the upper limb recovers entirely too fast (befor the lower), the arrow nock will be raised too high and the arrow may start off with its point down and take an unexpected nose dive. The latter of these two conditions can cause the most problems with arrow flight.

Actually the ideal condition for best arrow flight is if the lower limb recovers a minute amount before the upper insuring against the worst condition of the upper recovering too fast. This is the way all Gamemasters have been designed over the years. That is, designed so the lower limb recovers a minute amount before the upper. This amount is so slight it is hardly measurable but it does assure the best flight to the arrow under all possible conditions. No matter how bad your release is or how much you pluck the bow string under pressure you will still have good arrow flight with a Gamemaster.

Could other manufactures obtain this extremely accurate control in limb recovery? Because of the varying strength of bow glass, (even a single full length piece may be tapered in strength) it would be highly improbable without the glass spine method that is used only in the Howard Gamemaster. Controlled limb recovery is only a part of the importance that spining of the bow glass plays in the making of a high quality bow. More on glass spining comming up.

IMPORTANCE OF GLASS SPINE METHOD

As I mentioned at the first of this technical information, after bow glass first became available I noticed bows seemingly made identical varied in shooting characteristics. With some experimenting I found that there was a great difference in the strength (spine) of the glass and this was causing the variance. This difference in glass strength could not be accurately measured with a micrometer, the mic tells the thickness but not the real strength. Fiberglass has such a great influence on the bow that just a slight strength variance is quite critical. The glass in a bow makes up about 80% of the bows pull weight, wood does very little in comparison except it plays an important part in limb stability.

Glass comes in 3 stock thicknesses .030, .040, .050, this is how other manufactures receive and use their glass. Some of the more cautious ones may even mic some of their glass. Just how accurate is my spining method compared with using a micrometer? By spining the glass I segregate each basic thickness into as many as 40 different individual group readings. Where other manufactures would be using glass as .030, .040 and .050 thickness and be working with just 3 basic thicknesses, I

would be using this same identical glass but would be working with as many as 120 different spine readings rather than just the 3 basic thicknesses. Just as you match arrows and use a certain spine in a matched set, I match the glass in my bows. If I use a number 22 spine glass on the upper limb face, I would use a 22 on the lower limb face. The fact that the glass varies can give problems in a bows performance if not known. This variance tho has GREAT VALUE when taken advantage of. By having a choice of spine, you can come up with the ideal wood and glass combinations for different bow weights and draw lengths.

Much of the fiberglass is tapered in strength. A full piece of 72" long by 2" wide may not have the same strength at one end as the other. This is why I use 4 seperate pieces of glass in my bows, to assure each piece is properly matched. You could not have controlled limb recovery if you had a bow with glass of tapered strength in it. The only way you can have complete control of the action of the bow limbs is to know the exact strength of each of the four sections of glass used.

SHELF OF SPINED GLASS



The above shelf holds spined glass that has been segregated into many groups. This large selection is from just two colors and mostly from just two basic thicknesses.

IMPORTANCE OF WOOD TO GLASS RATIO

Another important factor of accurate spining of the glass is the wood to glass ratio. Although wood in the bow limb does very little actual work, it does play an important part in bow limb stability, mainly in the flexibility of the limb. If the spine of the glass is not known it would be impossible to achieve the best wood to glass ratio. There are countless different combinations of wood to glass ratios that can be used for each pound of bow weight and different draw lengths. One

of the tricks of making a good fast stable bow is to know the proper combinations. You must know the right portion of wood to use, you must know the spine of the glass. I use a chart that I have derived from many tests to compute the best wood to glass ratios for each different pound of bow weight. Also draw lengths over 29" I compute on a different chart. The wood to glass ratio is not based simply on the total of glass used, the face must be computed seperately and the back is computed seperately.

DRAW LENGTH — LIMB FLEXIBILITY

About draw lengths and limb flexibility. You may have noticed where some manufactures put a no draw limit on their bows. You may read this and think, this must really be a great bow, it has no draw limit. Is a no draw limit a good feature? One of the main reasons that a bow can have a no draw limit is because the limbs have a good deal of flexibility. From the standpoint of mass production, this is the only way to make bows, one that will fit as many as possible, then you don't have to worry about making them special to fit the archer. As I pointed out, with draws over 29" I compute on a seperate chart formulated for longer draws. I do this to increase the limb flexibility slightly for the longer draw, a long draw should have a slightly more flexible limb. To increase limb flexibility you decrease wood content and increase glass ratio. Rather than make a bow that fits all draw lengths, I prefer to fit the individual. This way each person will receive a bow with maximum stability suited for his draw length. When you purchase a bow with a no draw limit, expect a bow with a pretty flimsy limb.

BOW RECORD AND ASSEMBLY CHART

Bow SERIAL No.	MASTER CONTROL Lam.	Spine of GLASS FACE	Spine of GLASS BACK	Bow Weight
203	.070	6-3	7-6	40 #
204	.062	8½-6	13-9	60 #
205	.060	10-6	14-6	52 #
206	.064	15½-6	17-9	65 #
207	.0675	17-6	17½-6	60 #
208	.065	5½-3	15-6	45 #
209	.0625	12-6	16½-6	55 #
210	.063	5-6	11-9	58 #
211	.067	21-6	24-6	67 #
212	.0725	18½-6	20-6	63 #
213	.060	7-6	10-6	47 #
214	.060	9-6	13-6	50 #

GLASS SPINE SYSTEM

As I have put such an emphasis on the importance of the spine of the glass and the part it plays in making of high performance bows I thought it best to show the type chart I use and explain a little about it. There are 4 laminations used in a Howard Bow. A glass facing, next to the facing comes a tiller lamination, then a master weight control lamination and finally the backing. In the chart I do not show the use of the tiller lamination as this lam is more of a constant. It does vary slightly tho in different weight categories and could confuse you. (For your reference, the tiller lamination has an average thickness of .072 and helps control the tiller of the bow). Also I have not shown my chart for the longer draws as this is also apt to be confusing.

The basic glass thickness of .030, .040, .050 are spined in 3 strength categories. Dash 3 representing .030 glass, dash 6 representing .040 glass and dash 9 representing .050 glass. The figures preceeding the three strength categories of 3, 6, 9, are the actual spine of the glass in that category. A figure such as 8½-6 means the glass has an actual spine of 8½ and is in a 6 strength category (representing .040 glass). The figures listed under the title Master Control Lam are in thousandths of an inch and show the varying amounts of maple that goes into a bow. I think it may be interesting for you to note the wood quantity in the first two bows listed. The 60# bow has .062 of wood in the Master Control Lamination where as the 20 pound lighter bow of 40 lbs has a greater amount of wood .070. This is a good example of the part Wood to Glass Ratio plays in a bow to maintain maximum limb stability. In this particular 40# bow, to maintain maximum limb stability in a light bow, it was desirable to increase wood content and decrease glass content. For a long draw tho, the 40# bows wood to glass ratio would be somewhat reversed.

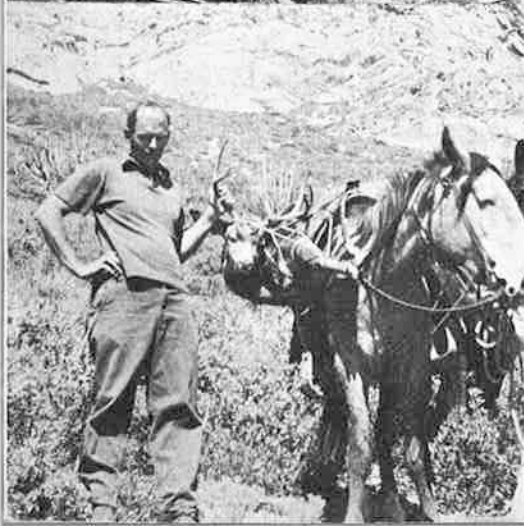
When I originally started preshaping and spining glass, my only thought was to find out just why bows varied in shooting characteristics. This was part of my usual testing and experimental work. I never dreamed of making bows for the public by using this complicated method. The trouble was, I found that the only way to make a perfect bow EVERY TIME was to use this experimental test method. The glass spining system I use is the most accurate method possible that can be used in bow making. It can also become just as complicated as it is accurate because of the many ratios that have to be figured. Many times I have spent as much as one hour just figuring the best ratio for a single bow. To give you somewhat of an indication of what I mean. Let the 4 laminations of a bow which are variable represent the last 4 digits of a telephone number (0 to 9) Just by mixing the last 4 digits of phone numbers there are approximately 10,000 combinations that can be used.

Yes my method of bow making costs more and so must my bows. If I did not use the many unusual techniques I use, my bows would be no different than any run of the mill bows that you will find at most any archery shop and discount store. You will not find a Howard Bow at your local dealer, my bows are sold only by mail and only through one other source besides direct sales. I make the Gamemaster personally and wish to continue with this policy as long as possible, it would be impossible to do this and meet the demands of dealers.

It takes TIME, LOTS OF TIME to make good stable accurate

bows. Most production bows are completely finished (2 to 6 hr) and ready for shipment in a lesser time than I take just for gluing (10 to 12 hrs). Production bows glued with epoxy cure in 3 to 15 minutes. Unlike production methods where time is of the essence, I do not consider the cost of time or materials in making the Gamemaster Jet, only QUALITY is considered and the bow sells for what it must. The glass spine system is one I developed and you will find this exclusive method used only in the Howard Gamemaster. It is extremely doubtful if any other manufacture will ever attempt to use this costly and complicated method no matter that they may claim. As there are so many factors to be considered in bow making, I think it should be fairly obvious that you can not tell how a bow performs simply by looking at it. You must shoot a bow to evaluate its qualities.

If you have read all of the technical information on this sheet, I am sure we both agree you deserve some kind of a medal, at least please except my appreciation.



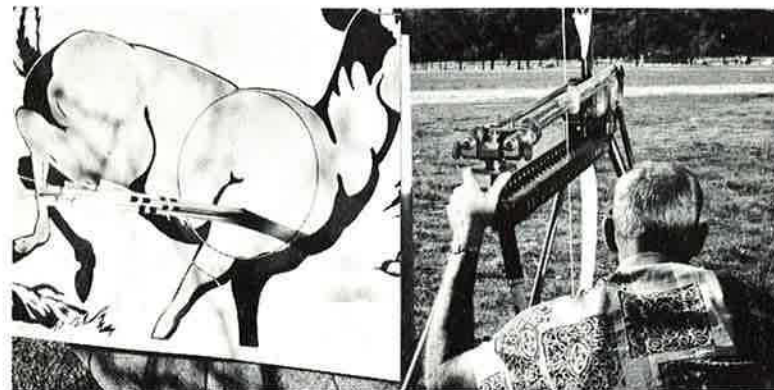
GAMEMASTER JET

The **TROPHY BAGGER**



THE JET ARROW

SUPER ACCURATE HUNTING BOW



Machine testing is just one of the many facets that has brought about the ultimate in speed and accuracy you will find in the Gamemaster Jet. The tight group at left was shot from a distance of 70 yards by a Gamemaster in a shooting machine. This kind of grouping directly reflects the years of research, engineering and design that has gone into a Howard Bow.

GAMEMASTER JET

\$145.00

Complete With Bow Case

WORLDS FASTEST BOW

Yes, the Gamemaster Jet is guaranteed to be the worlds fastest bow. Because of unusual manufacturing techniques and many years of research that has brought about the Jet model Gamemaster, the Jet is guaranteed to be faster than any other bow. Over the years there has been a number of models of Howard Gamemasters. The same technology has been used in all Gamemasters, but a new design incorporated into the Jet makes this model faster and the pull easier than all preceding models. The Jet features controlled limb recovery, this is the science of controlling the bow limbs in such a way as to give truest flight possible to the arrow. Only by the use of high speed photography, machine testing and the unusual Howard spine technique used in the Gamemaster is controlled limb recovery possible.

The Jets recurves are designed in such a way as to make the bow perfectly quiet, string silencers are NOT a must on a Gamemaster Jet as with mass production bows. Special consideration has been given to the handle design to give maximum handle rigidity for high power efficiency. The Gamemaster is undoubtedly the only bow in the world that has the glass spine system used in it. This is a method I developed many years ago. Use of the glass spine technique allows such an accurate gauge of strength that an exact and proper wood to glass ratio can be figured for each bow weight and draw length. Proper wood to glass ratio is extremely important to assure maximum stability in the bow limbs. Also this wood to glass ratio is used to compute the best combination for a given draw length. Bows that are to be drawn over 29" are computed on a separate spine chart. Detailed information on the above will be found in the separate technical sheet for those interested.

GENERAL INFORMATION

The Gamemaster Jet has a white facing and black backing made from famous Gordon Bo-Tuff. Handle is a composite made from a combination of beautiful Brazilian Rosewood, African Vermillion and strong decorative white strips. Bow finish is a tough durable plastic unequaled by any other manufacturer. Weights up to 65 lbs., the Jet is 66" in length. Guarantee is for 2 years, first month unconditional after which the rate is 4.6% per month based on the purchase price. LEFT HANDED Gamemaster Jet will be made up on special order and only direct from this source. There is a \$10 extra charge on a left handed Jet. All the usual and general information is given here in the colored brochure. The separate enclosed sheet is primarily for those interested in the technical side. If you are not interested in what goes into the making of the Gamemaster, lay this sheet aside.

SATISFACTION GUARANTEE

My Satisfaction Guarantee is simple. If you do not feel all claims I make for my bows are 100% valid or if you do not feel the Howard Gamemaster surpasses all others in workmanship, beauty, speed, stability, return the bow in the free test period and your money will be refunded. You have a period of 5 days in which to test out the Jet, if you need more time because of bad weather, etc. drop me a line and I will extend this test period.

ORDERING INFORMATION

It is wise to order as early in the year as possible (before May) to assure delivery for hunting season. Delivery time will vary but as a rule it runs 8 to 10 weeks. We are away hunting most of Aug. and Sept., no bows are made during this period. Shipping and mail order department are open thru hunting season, bows in stock will be sent out immediately. Shipping weight on the Gamemaster Jet is 6 lbs., check with your post office for mail cost to Nevada City, Ca 95959, add 50¢ for insurance. Mail time can usually be speeded up at least 1 week by Air Mail. When ordering it can sometimes help delivery if you will allow a little tolerance on weight desired. Ex., you wish a 55# bow but you will accept a weight from 54 to 57 lbs. Please give your actual draw length (not arrow length) also state if weight desired is to be at your draw length or 28".

PERSONALLY MADE

Quite often I will have a customer ask if I will personally inspect his Gamemaster before it is shipped. There is no need for this request, every Howard Gamemaster that has ever been sold I have made personally. I will continue to keep the policy of personally making the Gamemaster as long as humanly possible.

Jack Howard

Nevada City, Ca. 95959

PHONE (916) 265-4653

The Jet Set



HOWARD JET ARROW

The Howard Jet Arrow is for you if you want the fastest arrow possible for your bow. All Jet arrows have swaged broadhead tapers to keep tip weight down to a minimum. Too much tip weight is one of the culprits that can give problems with broadhead flight. Other than reducing tip weight, one of the main reasons I came out with the Jet arrow is that I personally do not care for the new type broadhead insert now being used. I feel it does not give adequate support to the broadhead point.

Swaged tapers are the best, yet I sincerely doubt if you will find a dealer in the world that stocks them. The problem is that there are so many different size shafts, draw lengths, feather cuts, crests, etc. desired by different ones that it would be impossible to supply all these demands in a swaged shaft. Even to just supply the different draw lengths and different sizes for various bow weights takes a huge stock.

To make it possible to supply you with a swaged shaft, the Jet arrow crest, feather cut that you see in color is exactly what you receive. Also lengths are in increments of 1/2", 28 1/2", 29, 29 1/2" etc. The normal rule is to leave some clearance between the back of the broadhead and the bow to clear forefinger. This amount will vary with the individual, if a fellow shoots with a high wrist, then his bow hand forefinger is down and he can use a minimum of clearance. If one has a tendency to heal the bow, then his forefinger is up and he needs more clearance. When ordering Jet arrows I will need to know what arrow length you want to the BACK OF THE BROADHEAD, keep in mind the Jet arrow comes only in increments of 1/2". (You will find many other types of arrows of any length available in my Bow Hunters Catalog). Also I will need to know what your bow weight is at your particular draw length.

JET ARROW \$35.95



WHAT MY CUSTOMERS HAVE TO SAY



Perhaps some of you may feel that I am a little over exuberant in giving details on my Gamemaster Hunting Bow. For this reason I thought it best to give you some words directly from my customers

Dear Jack,

I have thoroughly enjoyed shooting my Gamemaster Jet for a year now, I'm so pleased I am placing an order for another one. I have shot a good majority of the TOP bows for the past 19 years. I have found your Gamemaster Jet to be the smoothest and without any doubt the fastest of all the bows I have owned. The workmanship is superior, the finish is flawless. I know I could never get another bow like my Gamemaster so am placing an order for a spare just in case something might happen to you. Enclosed find check for a matched 52 pounder.

Most Sincerely,
Terrence Denman M.D.
Carmichael, Calif.

Dear Jack,

After using your Gamemaster for 3 years now, I just wanted to drop you a note to say how happy I am with it. I have bagged most species of game here in Australia, all quick kills. I guess I have owned and tried more bows than the average hunter, 17 in all. The speed and shooting performance of your Gamemaster excels all the others. I might add that your workmanship is conspicuously superior. Jack I have just finished publishing a book I think you would be interested in, its all about hunting Australian wildlife.

Good Hunting,
Vince Hamilton
N.S.W. Australia

Dear Jack,

I would like to tell you how pleased I am with my Gamemaster. To say just simply that I am pleased with it would be a gross understatement. It is obvious that the appearance and workmanship of the Jet reveals impeccable taste and fastidious attention to detail in all respects. No doubt you produce your bows with tender loving hands. The speed of your bow is really quite unbelievable. When I first received the Gamemaster I set all the sights on the Jet to correspond identical to the sights on my 55# production model bow. In all cases my arrows went higher with my Jet, yet it is only 47 lbs. I have owned 7 bows, none of which are considered "Cheapies," no bow I have ever owned can in any way equal the qualities of my Gamemaster Jet.

Quite Sincerely,
Dick Katchmar
Decatur, Ill. 62526

Dear Jack,

Hope you don't mind if I brag your bow up a bit. My Gamemaster is just out of this world, what a bow! never had anything like it. It certainly has tremendous power, more than my 10# heavier — bow. And super accurate it surely is. I killed two deer my first season with your fabulous Gamemaster. You guaranteed me a 15% increase of accuracy, but it will do 30% anytime for the average archer. What a terrific record archery would have obtained by now if other bows would be like yours. Thanks Jack for making a bow an owner can be very proud to own.

Emery Bomsta
St. Paul, Minn.

Dear Jack,

When I first ordered your Gamemaster Jet my only concern was performance. I didn't even consider appearance until I got my first look at the Jet. It is one of the most attractive bows I have ever seen, the finish is flawless. The Jet is not only beautiful and smooth but it is much faster than I dared to anticipate. Quite honestly, I was really amazed. I had a tough time believing what my eyes were seeing, especially at the 80 yard target. It was interesting to see the difference in trajectory between my arrows and the guy that was shooting with me. I certainly do not feel you have overstated any of your advertising claims. My wife and brother are now planning to order one of your bows too. Thanks for the finest bow I have ever owned.

Gratefully Yours,
Jerry Nicolay
Sioux Falls, S. Dak.

Hi Jack,

Just want to thank you for all the time you spent answering my letters, and the sincere interest you have taken with all my problems even before I became one of your satisfied customers. I have been amazed with the great stability of your fine bow. I am getting the most consistent group of arrows I have ever shot since first starting archery. I received many recommendations from top archers to buy your bow and I'm certainly glad I did. I am really happy with my Gamemaster and know I will never tire of the thrill of its consistent stable performance. Do you do all the work on your bows? I realize no bow could be produced with such fine qualities on a production basis.

Sincerely Yours,
James Doberstein
Green Bay, Wis.

Dear Jack,

A wait of 10 weeks for a bow can seem endless but it was worth every minute of it, and there is something extra special knowing the bow was made to order. Friends of mine can hardly believe you can build such a beautiful piece of sculpture for such a reasonable price, they guessed the price at \$200 plus. More importantly the bow shoots as good as it looks and certainly has power. In spite of my increasing to a heavy bow weight (58 lbs.) I find the bow extremely accurate, it forgives archers errors which makes it ideal for hunting. Since my speciality is hunting those spooky White-tails I feel that a great feature of my Gamemaster Jet is its quietness. Dear jumping the string is a thing of the past. Without silencers my Jet makes almost no noise. By comparison my hunting partner's \$200. bow has 2 sets of silencers and a set of brush buttons and still makes many times the noise of my Jet. In short, the Gamemaster Jet is the most perfect hunting bow I have ever owned. Thanks for your personal and courteous service.

Virgil Duemler
The Archery Den
Newfield, N. Y.

Dear Jack,

In your brochure you told about the Gamemasters speed, accuracy and workmanship and I certainly must agree. There is the another point equally as important to us serious bow hunters that you didn't mention. This is the lack of string noise. My Jet is dead quiet, in fact my bow is quieter without string silencers than most bows are using them. Thanks for making such a fine bow, I am looking forward to many years of good hunting with it.

Clifford McConnel
Sioux Falls, S. D.

Dear Jack,

Some time ago I purchased one of your Gamemaster bows. I have used it almost daily for hunting and target shooting here in Ethiopia. I have been in Archery for over 10 years and have owned many bows, but my Gamemaster is by far the best. The accuracy is superb, it's safe to say that if you miss, you didn't shoot at it. I have tested it against other name brand bows and I must say the power of my Gamemaster is matchless. Most of the animals I have killed took only 1 shot. At 45 yards the bow drove an arrow completely through the thick skin of a 500 lb. Oryx. He took 3 steps and was dead when I got to him. I've got my eye on a huge lion right now. Thanks for making such a fine bow.

S.F.C. Bill Darou
Ethiopia, Africa

Dear Jack,

Thought I would drop you a line to let you know I am more than pleased with my 65# Gamemaster Jet. The top-notch workmanship and beauty of it's construction is unequalled. In shooting the Jet I had to adjust my aiming because of the extreme speed. Speed, accuracy and power are the qualities that make this hunting bow superior to others, the Jet stands in a class by itself. If you miss your game you have only yourself to blame, not the Jet. I have owned the most popular and expensive hunting bows but have not yet come across one which can hold its own when compared to a bow made by Jack Howard.

Sincerely yours,
Joe Szlosep
Ludlow, Mass.

Dear Jack,

I have been knocking around archery for some time now. I guess the reason that I have owned so many bows, 11 in all, is that I have had no one to turn to for professional advice. Yes! I lost quite a lot of money but I have taken it philosophically and have written it off to experience. I have told you this because I know what I am about to say is true. The Gamemaster is without a doubt the flattest shooting, nicest handling and the best looking bow I have ever owned. Thanks loads for the personal and prompt attention you have given me. I think this is really a tremendous asset and it certainly makes a customer feel good.

Sincerely Yours,
Ben Rizzuto
So. Farmingdale, N.Y.



QUALITY TESTED Bow Hunting & Back
Packing Equipment

JACK HOWARD
WHITE BUCK — Nevada City, Ca. 95959

Dear Fellow Bow Hunter,

I must apologize for the fact that the enclosed brochure is a bit out of date. So much time was spent with my new Bow Hunters catalog, I simply have not been able to bring my Gamemaster brochure up to date. As soon as things slow down a bit I will revise the brochure. For the time being, I will give you the latest information here. The Gamemaster price is \$125., shipping wt. 6 lbs. As I now live on a Rural Route in a different location, bows may be sent by regular mail so disregard mailing information in brochure. The Supreme Target bow has temporarily been discontinued. Because of lack of participation and interest in the Big Buck Contest, the contest is no longer being held. Below is technical information on my bows for those that are interested in this type of information.

This information has never been released this fully before as it has been ONE of my secrets of making bows of complete stability and great speed. I guess I am just as human as the next fellow. We all have a tendency to guard what we take great pains to create. My feeling in the past has been that the large companies would exploit and claim to use my method, but because of the high cost of making bows this way in actuality would not. I assure you, as my method is slow and tedious, it would be impossible to mass produce bows this method. Yes by necessity my bows may cost more than a few others and I think you should know why, so am releasing this information.

When I first started making bows around 25 years ago, I made them the same conventional way as everyone else, by gluing blanks together and cutting them to shape later. At that time fiberglass had not yet been invented for the use in bows. When fiberglass became available, we all continued making bows basically the same except replacing formerly used backing and facing with the new glass. After using glass for a time I noticed that bows seemingly made identical varied in shooting characteristics. It was through my curiosity to know why this difference that the development of my present bow making methods came about.

I found that there was a great difference in the strength (spine) of the glass and this was causing a variance in shooting characteristics. This difference in glass strength could not be accurately measured with a micrometer, the mic tells the thickness but not the real strength. The fiberglass has such a great influence on the bow that just a slight strength variance is very critical. The glass in a bow makes up about 80% of the bows pull weight, wood does little in comparison except it plays an important part in limb stability. As the strength of the glass is so critical I preshape my glass to exact finish bow size to get an accurate spine reading on only the exact amount of glass used in the bow.

Glass comes in 3 stock thicknesses, .030, .040, .050, this is how other manufactures receive and use their glass. Some of the more cautious ones may even mic some of their glass. Just how accurate is my spine-ing method compared with using a micrometer? By spining the glass I segregate each basic thickness into as many as 40 different individual group readings. Where other manufactures would be using glass as .030, .040 and .050 thickness and be working with just 3 basic thicknesses, I would be using this same identical glass but would be working with as many as 120 different spine readings rather than just 3 thicknesses.

This may be a little confusing so I will try to clarify. Just as you spine one arrow you get one reading for that particular arrow, I get one reading from one piece of glass. To get 120 readings it would take 120 pieces of glass. Just as you match arrows to use a certain spine in a matched set, I match the glass in my bows. If I use a number 22 spine glass on the upper limb face, I would use a 22 on the lower limb face. Much of the fiberglass is also tapered in strength. A full piece of 72" long by 2" wide may not have the same strength at one end as the other. This is why I use 4 separate pieces of glass in my bows, to assure each piece is properly matched. You could not have controlled limb recovery if you had a bow with tapered glass in it. The only way you can have complete control of the action of the bow limbs is to know the exact strength of each of the four sections of glass used.

Another important factor of accurate spining of the glass is the wood to glass ratio. Although wood in the bow limb does very little actual work, it does play an important part in bow limb stability, mainly in the flexibility of the limb. The spine of the glass varies, it would be impossible to achieve the best wood to glass ratio if a manu-

facture did not know the spine of the glass. There are countless different combinations of wood to glass ratios that can be used for each pound of bow weight and different draw lengths. One of the tricks of making a good, fast, stable bow is to know the proper combinations. You must know the right portion of wood to use, you must know the spine of the facing and the spine of the backing. I use a chart that I have derived from many tests to compute the best wood to glass ratios for each different pound of bow weight. Also draw lengths over 29" I compute on a different chart. The wood to glass ratio is not based simply on the total of glass used, but the face must be computed separately and the back is computed separately. I developed this bow glass spine-ing method and you will find this exclusive method used only in my bows. It is extremely doubtful if any other manufacture will ever attempt to use this costly method, no matter what they claim.

About draw lengths and limb flexibility. You may have noticed where some manufactures put a no draw limit on their bows. You may read this and think, This must really be a great bow, it has no draw limit. But is a no draw limit a good feature? One of the main reasons that a bow can have a no draw limit is because the limbs have a good deal of flexibility. From the standpoint of mass production this is the only way to make bows, one that will fit as many as possible, then you don't have to worry about making them special to fit the archer.

As I pointed out, with draws over 29" I compute on a separate chart formulated for longer draws. I do this to increase the limb flexibility slightly for the longer draw, a long draw should have a slightly more flexible limb. To increase limb flexibility you decrease wood content and increase glass ratio. Rather than make a bow that fits all draw lengths, I prefer to fit the individual. This way each person will receive a bow with maximum stability suited for his draw length. A fellow with a short draw will then not receive a bow that is entirely too flexible for his draw. When you buy a bow with a no draw limit, expect a bow with a pretty flimsy limb.

When I originally started preshaping and spining glass, my only thought was to find out just why bows varied in shooting characteristics. This was part of my usual testing and experimental work. I never dreamed of making bows for the market by using this complicated method. The trouble was, I found that the only way to make a perfect bow EVERY TIME was to use this experimental test method. Yes my method of bow making cost more, but if I did not use the many unusual techniques I use, my bows would be no different than any of the run of the mill bows that you will find at most any archery shop and many discount stores. I take a great pride in knowing I make a bow UNIQUELY DIFFERENT.

No, perhaps you may not find my bows at your local dealers. You will find only mass production bows at ALL the different dealers. My bows CAN NOT be mass produced so the quantity is very limited and are sold mostly by mail. You can buy a mass production bow at a low price, but are you really getting a bargain? This additional information I have given here may seem rather lengthy but actually I only touched very lightly on the importance of spine of glass and computed charts. This spine method I have developed is just one small but important phase of the proper scientific ways of making bows. It takes TIME, LOTS OF TIME, to make good stable accurate bows. Most production bows are completely finished (2 to 6 hrs) and ready for shipment in a lesser amount of time than I take just for gluing. Glue time on production bows usually runs from 3 to 15 minutes. One of the secrets of making high quality in a bow requires a long glue period, I cure all my bows in the bow press 10 to 12 hours. I hope this additional technical information on my bows has been of interest to some of you, without boring you too much. If you have any questions about my bows, please feel free to write.

