



## SBAC October 2011 Newsletter

Please contact [villyangelico@yahoo.com](mailto:villyangelico@yahoo.com) to make archery related announcements (e.g. other club shoots), to provide archery related articles, to submit any archery related photos or to sell archery items in this newsletter.

# SOUTH BAY ARCHERY CLUB, INC.

***Motto: To foster, expand, and perpetuate the practice of field archery and the spirit of fellowship among archers***

## 2011 SBAC OFFICERS

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### Classification Chairperson

OPEN

### Entertainment Chair

Niels Goerrissen  
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### Big Game Chairperson

OPEN

## General Information

SBAC meetings are held on the **second** Wednesday of each month from 7:30 to 8:30 p.m., at **the Ladera Linda Community Center**, located on Forrestal Drive, off of Palos Verdes Drive South, across the street from Trump's Golf Course, up the hill almost the end. We meet in one of the classrooms to the right of the parking area.

SBAC monthly shoots are held on the **fourth** Sunday of each month, except in December, when it is held on the *third* Sunday. All shoots start at 9:00 a.m. **Registration closes at 9:15.**

Monthly Shoot Fees are as follows:

Single	\$5.00
Family	\$10.00
Juniors (Young Adult, Youth, and Cub)	\$1.00
Guests (first time with a member is free)	\$10.00

Club patches are \$5.00      Club T-shirts are \$15.00 (regardless of size)

Items (articles, want ads, etc...) should be submitted to the Newsletter Editor via e-mail no later than the Saturday following the club meeting.

## October President's Report

### President's Report

There's not a whole lot to report at this time, except a profound apology once again for disseminating false information about the status of John Burns. I'd posted on our Facebook page that our dear friend and fellow archer had passed away—based on a rumor—when indeed he hadn't. I'm sorry for any ill will that that may have caused.

The concept of the gate remains in limbo because 1) most manufacturers are far enough from Los Angeles to make the freight exceed the cost, and 2) feedback from the Land Conservancy has been minimal at best.

We are attempting to get our nonprofit/not-for-profit status in order. A lot of assumptions governed the way we did or didn't do taxes, records, etc. We're attempting to become (we thought we already were) a 501 C 3, which will enable us the qualification to move to a more convenient and less expensive meeting site.

It appears we may only have one last work party opportunity before our year ends in February. If you don't want to spend \$120 in dues, make sure you're there from 9:00 a.m., for at least three hours. Make sure also that you check the website AND that we have your email for notification purposes. The work party—mostly to make carpet bales—may actually take place at a site *other than the range!*

As hunting seasons approach, I hope that having sharpened your skills at our range will prove itself of significant benefit.

***Keep shootin' sp@ts!***

*- Paul Farbman*

## South Bay Archery Club, Inc. - Meeting Minutes October 12, 2011

- CALL TO ORDER - 7:30 p.m.
- Welcome to new guests
- Minutes approval from Newsletter online. No changes.
- President's report - Paul Farbman
  - Paul apologized over the misinformation concerning John Burns
  - The question of a new gate is up in the air as shipping costs exceed the cost of the gate, and there's still a question if the Land Conservancy will pay for it
  - "nasty" mail will not be responded to
- Vice President's report - Michael Ude
  - Michael echoed the apology.
  - Hats have been ordered
  - There's still a good selection of T-shirts
  - CBH/NFA membership applications are available
- Membership/Secretary's report – none
- Treasurer's report – Leon Fricke
  - Funds ample for much-needed road repair and gate if Land Conservancy doesn't pay for it
  - Still awaiting receipts for road maintenance
  - Report accepted as presented
- Tournament Chair's report – Bob Dupuy
  - About a dozen archers at the last tournament.
- Range Captain's report – None.
- Target Captain's report – Dieter Vees
  - Carpet bales very popular. More to be made soon Watch for work party.
  - The 23<sup>rd</sup> is a field round.

BREAK - T-shirt sales and member sign-ups

- Entertainment Chair Report – None
- Newsletter Editor Report – None
- 3-D Chair's report – Bobby Carrillo
  - None scheduled except mini 3-D in December
- Old Business – none
- New Business from the floor - none

ADJOURNMENT - 8:30 p.m.

Respectfully submitted,  
Paul Farbman

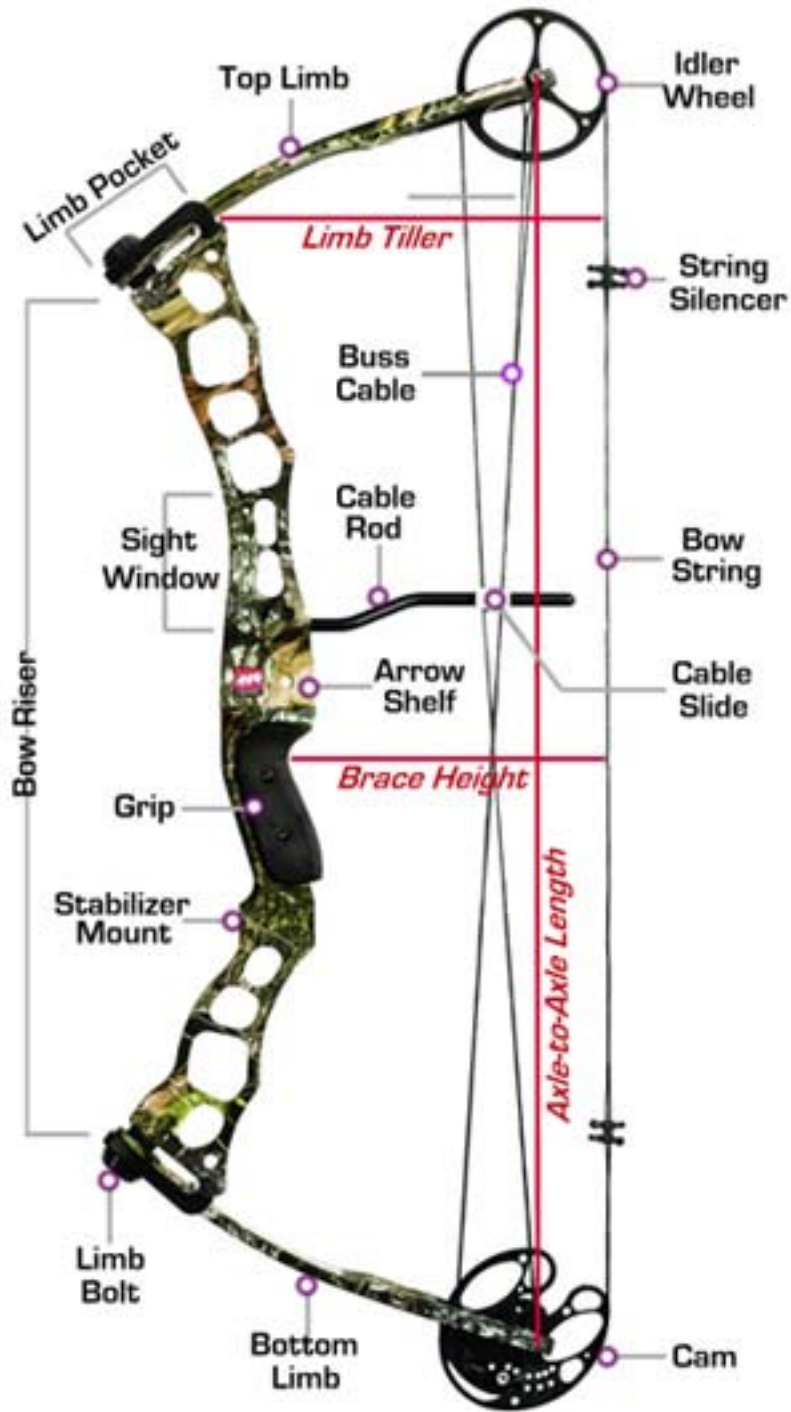
# Tournament Scores

## SOUTH BAY ARCHERY CLUB

HUNTER ROUND SEP. 25, 2011

NAME	STYLE	SPOT	SCRATCH SCORE	HDCP	HDCP SCORE	NEW HDCP	PLACE
THOMAS SMITH	TRAD-RC	16	317	200	517	200	
DALE WARREN	BH	24	413	126	539	124	
BOB DUPUY	BHFS	58	495	58	553	283	
PETE GUARRASI JR	BHFS	55	495	40	535	40	
PETE GUARRASI SR	BHFS	35	458	86	544	86	
TOM MAGILL	BHFS	48	492	81	573	62	
DAN MARTIN	BHFS	53	495	-	-	54	HNDCP EST.
DEITER VEES JR	BHFS	40	489	68	557	65	
DIETER VEES SR	BHFS	27	442	102	544	102	
MICHEAL UDE	BHFS	49	489	62	551	62	
GLEB DEOBER	FS	51	491	61	552	61	
ARNIE VILLACORTA	FS	69	509	35	544	35	
<b>FIELD 20 PIN AWARDS</b>							
BOB DUPUY	BUNNY, 15-14, 19-17						
GLEN DEBOER	14-15						
PETE GUARRASI JR	BUNNY, 14-15, 23-20						
PETE GUARRASI SR	14-15						
TOM MAGILL	14-15, 36F						
DAN MARTIN	19-17, 28F						
DEITER VEES JR	14-15, 19-17						
DIETER VEES SR	19-17						
MICHEAL UDE	14-15, 19-17, 40						
ARNIE VILLACORTA	14-15, 19-17, 23-20						

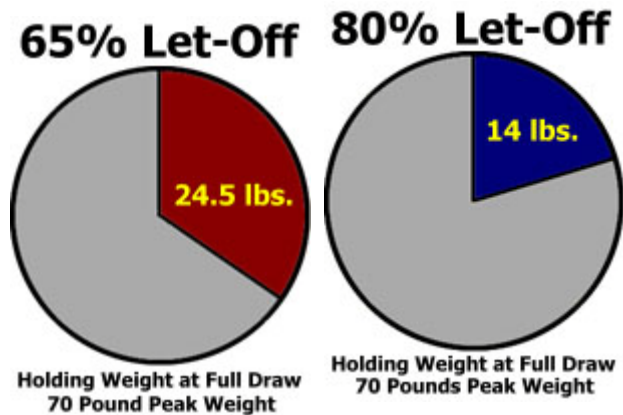
## Compound Bow Selection Guide



Article continued from September newsletter:

## Let-Off Basics

If you've ever shot a heavy recurve or longbow, you've certainly noticed that you're holding back the maximum draw weight just when you come to full draw, so you must aim and release the arrow quickly before you run out of steam or begin to shake. The original compound bow was designed to eliminate this problem, offering the shooter more time to aim and release the arrow. In contrast with the traditional bow, the draw weight of the compound bow decreases (sometimes dramatically) just as you come to full-draw. This is known as LET-OFF, which is controlled by the geometry of the cam system.



Early compound bows featured a 35-50% let-off, a welcome relief. But today it is common for bows to have let-off in excess of 75%. A bow with a 70# draw weight and 80% let-off will require the shooter to hold back only 14 lbs. once the bow reaches full draw. Holding back such a small amount of weight, the shooter has the luxury to take more time aiming and releasing the arrow. Of course, some argue that you can have too much of a good thing. There is some concern that a bow can have too much let-off, making the bow feel "sloppy" at full draw. Maintaining some level of resistance at full draw is perhaps necessary to keep things in good natural alignment. However, the average archer will find the mid to high let-off bow to be more comfortable to shoot. Advanced archers and back-tension shooters often prefer a little less let-off.

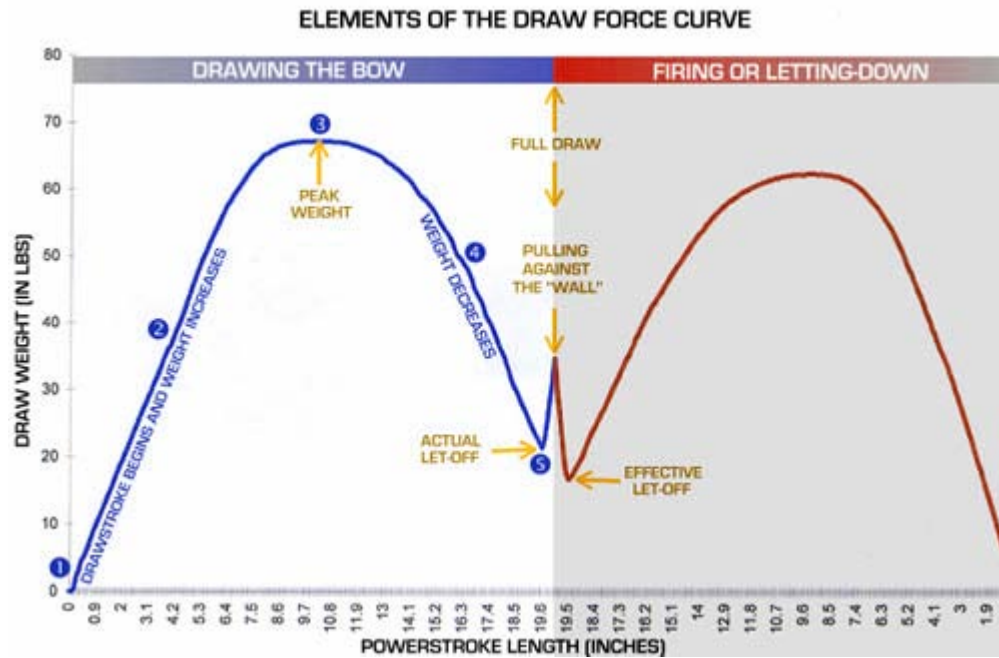
The only other disadvantage to a high (over 75%) let-off cam is a small reduction in arrow velocity vs. a lower let-off cam system. All other things being equal, a bow with 65% let-off will shoot faster than a bow with 80% let-off. However, the difference in speed is usually only a few fps. Fortunately, many cams use interchangeable modules which give you the option to easily switch between different available let-offs. Some cam systems even offer adjustable let-off right on the cam without the need for additional modules. If you would like the option to experiment with different let-offs, look for this feature on your new bow.

While you're bow shopping, you may notice some bows are advertised with 2 different let-off percentages. There's a bit of a technical snafu here, so bear with us, this takes a little time to explain. Depending upon how you compute the let-off percentage, you can get two clearly different let-offs for the same bow, the "Effective" and "Actual" let-off. While you're drawing the bow back, friction in the bow's cables, cam bushings, cable slide, etc. adds a little draw weight to the cycle. Unfortunately, the extra energy you used to overcome that friction gets lost when you let the bow back down (or fire the bow). So basically, the bow doesn't put-out as much energy as you put-in. Some of the energy is stolen by friction (hysteresis). Bummer!

### Actual vs. Effective Let-Off Computation

Due to hysteresis, it would take more energy to draw the bow all the way back than it would to hold it while slowly letting it back down from full draw. It's kind of an abstract concept, so imagine if we put a bow in a vice and then drew it back using a rope and winch. Now imagine we also had a spring scale

hooked to our winch, so we would know exactly how much pressure was on the rope at all times. If we started drawing back the bow by cranking the winch, and watched the reading on the scale the whole time, the weight would go up and up until the bow reached its peak weight about 1/2 of the way back. If we kept cranking on back to full draw, the weight would drop-off as we arrived at the draw cycle's point of let-off (full draw). NOW! If we reverse our winch and slowly let the bow back down, we should expect the scale to read the same, just with the cycle in reverse, right? Nope! As soon as we begin letting the bow back down, all the readings will be slightly less than they were when we drew the bow back. This degradation or loss of effective draw weight due to friction forces is called hysteresis.



SO...to compute our percent let-off, all we need to know is the bow's peak weight and its minimum weight at full draw. In the example above (blue line), the bow's peak weight is roughly 67# and the minimum weight is about 20#, which computes to a 70% actual let-off. But when you measure the peak and minimum weight on the return stroke (red line), you'll get slightly different numbers. The minimum holding weight is clearly less on the return stroke (about 16#). So if you compute the 16# on the red line as a percentage of the original 67# on the blue line, you get 76% let-off. This is the bow's "effective" let-off.

Why the mathematical trickery? Simply put, high let-off bows are better sellers. So it's pretty common for manufacturers to only list their effective let-offs, and make little mention of actual let-off. In fact, unless the manufacturer specifically notes the word "actual" in their let-off specifications, assume the let-off measurement is the *effective* variety.

### Let-Off Compliance for State Regulations

While the 75-80% let-off bow has certainly become the "standard" in the industry, be advised that a few states still place restrictions on let-off. Several of the western states have restricted high let-off bows for big-game hunting, permitting only 65% maximum let-off. If in doubt, please check your current state hunting publications to be sure your your new equipment will be in compliance with your state's regulations.

### Let-Off for Pope & Young Club

One final consideration for choice of let-off....the Pope and Young Club is one of North America's leading bowhunting and conservation organizations. Founded in 1961 as a nonprofit scientific organization, the

Club is patterned after the prestigious Boone and Crockett Club. The Club advocates and encourages responsible bowhunting by promoting quality, fair chase hunting, and sound conservation practices. Bowhunters who harvest record animals may qualify to have their trophy listed in this organization's record books. However, for a compound bow, Pope & Young has traditionally allowed a maximum of 65% let-off (actual) to qualify for listing in their record book. But in response to increased pressure by high let-off enthusiasts, the rule was changed in 2004. Record animals taken with higher let-off bows will now be listed, but an asterisk "\*" will be placed beside the hunter's name, indicating the animal was taken with a high let-off bow.

## Cam Type

Modern compound bows generally come with a choice of 4 different types - or styles - of cam systems. While they all accomplish a similar mechanical goal, they each have a unique set of attributes and respective advantages and disadvantages.



### Single Cams

Often described as a Solocam or One Cam, the single cam system features a round idler wheel on the top of the bow and an elliptical shaped power-cam on the bottom. The single cam is generally quieter and easier to maintain than traditional twin cam systems, since there is no need for cam synchronization. However, single cam systems generally do not offer straight and level nock travel (though the technical debate continues), which can make some single-cam bows troublesome to tune. Of course, all single cams aren't created equal. There are good ones and bad ones. Some are very fast and aggressive, others are quite smooth and silky. Some offer easy adjustability and convenient let-off choices, others don't. But most single cams do offer reasonable accuracy and a good solid stop at full draw. Overall, the smoothness and reliability of the single cam is well respected. And the single cam is today's popular choice on compound bows.



### Hybrid Cams

The Hybrid Cam system has gained considerable popularity over the last few years. The hybrid cam system features two asymmetrically elliptical cams: a control cam on the top, and a power cam on the bottom. The system is rigged with a single split-harness, a control cable, and a main string. Though originally invented and marketed by Darton Archery as the C/P/S Cam System, Hoyt's introduction of the Cam & 1/2 (a variation of the original C/P/S System) in 2003 brought hybrid systems into the limelight. Hybrid cams claim to offer the benefits of straight and level nock travel, like a properly-tuned twin-cam bow, but without the timing and synchronization issues. Indeed, hybrid cams require less maintenance than traditional twin cams, but it's probably a technical stretch to say that hybrid cams are maintenance free. They too need to be oriented (timed) properly for best overall efficiency and performance. There are several hybrid cam models available which are impressively fast and quiet, rivaling the best of the single cam bows.



### Twin Cams

A twin cam system is sometimes described as a Two Cam or a Dual Cam. The twin cam system features two perfectly symmetrical round wheels or elliptical cams on each end of the bow. When properly synchronized, twin cam systems offer excellent nock travel, accuracy, and overall speed. However, twin cams do require more maintenance and

service to stay in top shooting condition. But thanks to today's crop of advanced no-creep string fibers, they are becoming increasingly easier to maintain. Many hardcore competition shooters are quite loyal to the twin cam concept. And it's probably worth noting that the twin cam bow is dramatically more popular outside of the US and Canada, where there is less advertising to hype the single and hybrid systems. Aside from maintenance issues, the only true disadvantage to twin cams is the tendency for increased noise (compared to typical single and hybrid cams). Nonetheless, the twin cam is still the cam system of choice for many serious shooters. Twin cams are also very popular choice for youth bows.



### Binary Cams

Introduced by Bowtech Archery as a new concept for 2005, the Binary cam is a modified 3-groove twin-cam system that slaves the top and bottom cams to each other, rather than to the bow's limbs. Unlike single and hybrid systems, there is no split-harness on a binary system - just two "cam-to-cam" control cables. This creates a "free-floating" system which allows the cams to automatically equalize any imbalances in the limb deflections or string and control cable lengths. So technically, this self-correcting cam system has no timing or synchronization issues and should achieve perfectly straight and level nock travel at all times. The only drawback is that without split harnesses to equalize the limb tips, slaved cams can be subject to cam lean - which realistically causes little to no shooting drama - but it stirs a lot of debate and complaint. Since 2005, many bow companies have licensed the slaved/binary concept through Darton, who has their own patented version of the slaved cam system. Only time will tell, but we strongly suspect that the binary cam and its variants will continue to gain popularity.

### Cam Type Hype

Cam technology (and its licensing to other bow companies) is the financial bread-n-butter for some bow manufacturers. So it's no surprise that they focus much of their efforts on marketing and promoting their particular cam style(s). As a result, this is one area in particular where CBT often gets out of hand. For example, if a cam is designed to feature an unusually deep string groove, the consumer won't see an ad that says "Now with deeper grooves in the cams". You're more likely to see something like, "Now featuring the CoreTrack™ XS4 Cam with Accugroove Technology". So don't be too swayed by high-tech sounding cam advertisements. Manipulating the geometry of a small piece of machined aluminum isn't exactly a clean-room technology.



### Cam Parity

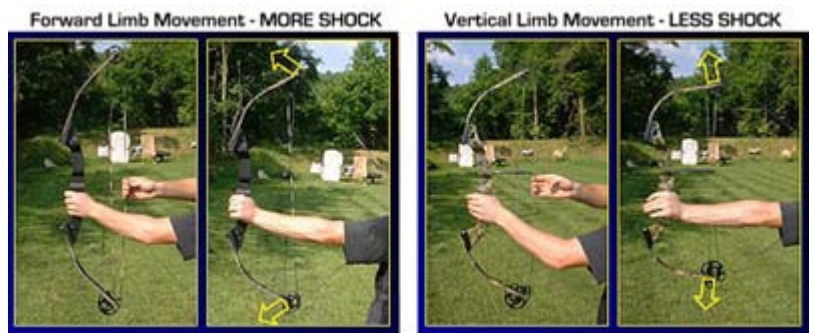
While the technical subtleties and respective merits of the various cam systems could be debated in perpetuity, in the real world there is an obvious performance parity among them all. This isn't to say that they all perform exactly the same. But to say that one cam style really offers a crucial field-advantage over another would be something of a stretch. They all accomplish the same basic mechanical goals and there are great-shooting bows available in all of the cam style categories. As such, we recommend you not be too cam-monogamous when doing your bow shopping. The cam system you choose probably has more to do with who gets the check than who gets the deer.

### Solid vs Split Limbs

This is a tough one. Solid limb proponents claim that solid limbs offer better torsional stiffness and

more accurate than split limbs. Split limb proponents claim that split limbs are more durable and produce less hand-shock than solid limbs. While we don't see much evidence to support either of these positions, it does seem clear that there is an ebb and flow to solid vs. split limb thinking (and the way it's generally perceived by archery enthusiasts). Years ago, limb type -- regardless of which side -- was used as a selling feature. Makers of split limb bows would tell you how much better split limbs were than solid limbs, while their competitors did the exact opposite. But over the years, many of those manufacturers have crossed their own lines in the sand, and changed some, or all, of their bows to split from solid, or to solid from split. In spite of the seasonal marketing hype, many bow manufacturers are willing to switch back and forth as situations warrant. For example, Bowtech had always exclusively used solid limbs. However, for 2007 they introduced 2 new bows utilizing split limbs to accommodate a new riser design. The same flip is true for PSE and Mathews, traditionally solid-limb proponents, who have recently introduced split-limb bows in 2007 and 2009 respectively.

So perhaps the choice of solid limbs vs. split limbs isn't really such a critical black or white choice for enthusiasts. Of course, you're bound to hear some marketing jabber about how one limb outperforms another. But in the field, solid and split limb bows perform similarly. Whatever your preference, limb type should be a minor consideration compared to the other bow design characteristics we've discussed. Weigh this bow attribute lightly. Beyond the aesthetic appeal, it probably doesn't matter. The type of limb installed on any particular bow is probably the limb type that works best with that particular riser, limb pocket system, and cam system. Bow Recoil - AKA, Hand-Shock



Some call it kick, or hand-shock, or refer to it as shot-vibration, but we're all usually referring to the same thing, recoil. Of course, a bow's recoil is rather backwards from that of a gun - pushing away instead of towards you. But the phenomenon is basically the same - an undesirable jolt at the point of the shot. Why does it happen? It's Sir Isaac Newton's fault of course. When a bow is drawn, the limbs compress back under tension. When the bow is fired, the unloading limbs jolt forward and return to their original positions. Since the cams are attached to the bow's riser, the inertia of the fast-moving limbs (Limb Thrust) causes the bow's riser to jump forward too. And since your hand is attached to the riser at the bow's grip, you feel the riser's abrupt movement as recoil. It's a natural byproduct of such an explosive energy release, and on some bow designs it's quite noticeable - perhaps even detrimental.

### The Path to Recoil Abatement

Very little was said about bow recoil 20 years ago. Of course, there wasn't much that could be done about it at the time, and most enthusiasts went about their merry ways never knowing the difference. But as cam technology improved, and the compound bow began storing/releasing more and more energy, recoil became more of a center-stage issue. By the late 90's, the average bow literally leapt out of your hand at the shot. The industry's immediate response was to develop dampening technologies. By the turn of the millennium, archery consumers were spending millions on rubber stick-on's, jiggy stabilizers, hydraulic whatchamacalits, and harmonic doo-dads in an attempt to reduce bow recoil. The whole industry seemed almost obsessed with it. Unfortunately, these aftermarket wonder products did little, if anything, to counteract forward limb thrust. In all fairness, they did make bows quieter, but they could not defeat the inertia of the forward thrusting limbs.



## Higher Limb Angles

So while the accessory manufacturers were busy making vibration analysis graphs and marketing dubious claims of oscillatory abatement, the bow manufacturers were digging into the root of the problem - limb thrust. The obvious solution was to reorient the limbs such that they didn't thrust forward upon release. But in order to do that, the limbs would have to be oriented almost horizontally - parallel with each other - such that they could load and unload vertically. That way the top limb would thrust upward, the bottom limb downward, and the opposing forces would cancel each other out. Of course, archery consumers needed a little time to warm up to the concept. After all, a bow with horizontally oriented limbs would hardly look like a bow at all. So over the next 5 years, bow manufacturers began to present bows with increasingly steep limb angles. And the steeper the limb angles got, the less recoil the bows seemed to have. As expected, archery consumers were skeptical at first. But by 2005, high limb angle parallel style bows were totally dominating the compound bow market. [Learn more about the parallel limb craze.](#) In fact, bows built today without parallel limb orientation are considered "classic" designs.

## Parallel-Limb Bows are Born

Creating a parallel-limb bow has not been without some manufacturing headaches. Among the fundamental challenges, a parallel limb bow is built using a riser that's twice as long, and limbs that are half as long (that's an exaggeration - but you get the point). As you might expect, this precipitated a number of problems that took a while to solve. So early parallel limb bows showed some ugly signs of the learning curve. But season by season, the parallel limb designs got better and better. Today the market abounds with smartly refined parallel limb models which are arguably some of the best compound bows ever produced. And can you guess what they're all missing? Exactly...RECOIL. Today's parallel limb bows generate little to no forward limb thrust and offer the smoothest releases of any bows ever produced.



## Who's Your Daddy?

So who do we thank for birthing the parallel limb bow? As you might expect, the various bow companies can't help but squabble about who deserves the credit - each spinning their own versions of how the technology was "created". But the fact is, the parallel limb concept isn't really an invention in the traditional sense. It's more of a fundamental change in thinking, like making a car more aerodynamic so it gets better mileage. We submit that the trend to parallel limb bows is more of an inevitable evolution in the bigger scheme of compound bow manufacturing. But in all fairness, a handful of the key manufacturers, like Bowtech & Mathews, were brave enough to stick their necks-out first and prime the pump.

## Parallel Limb Popularity Soars

Parallel limb bows have undoubtedly become the hottest-selling bows on the market. Even considering their once hefty price-tags, parallel limb bows have managed to become the new standard. And today, parallel limb bows are no longer just reserved for the \$700+ elite buyers. By 2007, every bow manufacturer from Alpine to Reflex has adopted the parallel limb designs and the prices came back in-line. For 2009, here are some really nice parallel limb bows on the market for as little as \$299. So it seems that the traditional D-shaped bows are destined for the bargain-bin and everyone can take advantage of the parallel limb innovation without paying the premiums of a few years ago.

## Parallel Neurosis

Unfortunately, the parallel limb craze has precipitated an almost neurotic obsession with detecting and palm-analyzing recoil - so much that buyers are practically ignoring other attributes. We see bow shoppers every day who shoot a bow just one time, then make their judgment based solely on how much recoil they feel. Some enthusiasts are so focused on recoil, or enamored by the lack thereof, they almost forget to consider the bow's grip comfort, balance, and drawstroke feel. We suggest you not focus your attention beam so tightly on just how recoil-free a bow can get. If the bow has parallel limbs, the recoil is going to be low. So don't let all other characteristics get demoted to tertiary concerns. There's more to a good-shooting, good-feeling bow than just the absence of recoil.

### Are Parallel Limb Bows More Accurate?

Probably not. While the parallel limb bow is notably smoother and quieter at the shot, there's no direct evidence to suggest a parallel limb bow is inherently more or less accurate than a standard D-shaped bow. In fact, target archery professionals still prefer the more upright standard limb designs. Of course, we must also consider that parallel limb bows tend to be short. Target shooters generally prefer longer axle-to-axle designs. And since target shooters aren't usually concerned about noise, or recoil for that matter, the parallel limb bow isn't as much of a phenomenon on the competition circuits. But for bowhunters, it's a different story. Within a typical bowhunter's range, a parallel limb bow is likely to provide the same consistency and accuracy as any other style bow.



### Do All Bowhunters Love Parallel Limb Bows?

Certainly not! Parallel limb bows don't appeal to everyone, as they have a few drawbacks of their own. While the generation-x buyers tend to love the radical batwing shape of parallel limb bows, we hear a number of more traditional buyers comment that parallel limb bows are "ugly". And perhaps it's a fair criticism. For those who appreciate the sleek lines and traditional appearance of a bow, the parallel limb bow is no beauty queen. A parallel limb bow isn't really even shaped like a bow. Of course, we hear that beauty is in the eye of the beholder ... and the market seems to indicate that the vast majority of new bow buyers are beholding the parallel limbs bows quite fondly. Nonetheless, some still haven't warmed up to the batwing physique.

### Parallel Limb Bows on the Chunky Side

As we mentioned earlier, parallel limb bows start with a very long riser. Since most of the bow's weight is in the riser, the parallel limb bow is typically 1/2 pound heavier than standard D-shaped bows. In 2001, the average compound bow weighed just 3.6 lbs. Today, that average is well over 4 lbs. You may in fact notice that the term "lightweight" has largely disappeared from bow advertising. The dilemma is balancing weight against structural stability. The longer a riser is, the stronger it must be. So there is only so much material the manufacturer can machine away (cut-outs in the riser) to reduce the riser's finished mass. So for now, parallel limb bow buyers will simply have to live with the extra weight. But we expect this situation will continue to improve over the next few seasons.

### Total Bow Mass

Interestingly, adding some mass to the bow isn't automatically a bad thing. Some shooters actually prefer a little more weight, particularly competition shooters. A heavier bow tends to be more stable at full draw and easier to hold steady while aiming. So in that respect, PLB's aren't necessarily a step backwards. On the other hand, some shooters clearly prefer the lightest bow possible - particularly hunters who hike long distances. Perhaps there is no right or wrong here, as this is clearly a matter of

personal preference. But let's keep things in reasonable perspective. Less than 2 lbs. separates the very lightest from the very heaviest bows on the market. And among popular men's hunting bows, the difference from the lightest to heaviest is about 12 ounces (the weight of a can of soda). So even considering the extra mass of the PLB riser, your fully-accessorized bowhunting rig will still tip the scales well under the weight of your hunting rifle. Unless you have a specific need for a very lightweight bow, you shouldn't spend too much time splitting hairs over whether you should get a bow that weighs 3.9 lbs or 4.1 lbs, as it is likely you'll never notice the difference. Other design features should take much higher precedence in your selection of a new compound bow.

### How Long or Short Should I Go?

First, as the name suggests, bows are measured for length from the center of one cam axle (a round metal rod connecting the cam to the bow's limb) to the other. Please note that a bow will actually stand 3-5" taller than it's published axle-to-axle length. This is because the cams extend well beyond the axles. So if you are buying a new bow and need the bow to fit into a particular case, or storage space, you should take this into account.

OK. So how long should a good bow be? Compound bows range in length from well under 28" to over 45". But the average length is about 34", dramatically shorter than the average bow of 15 years ago which was a staggering 43" long. So the market trend is certainly towards more compact designs, and what was once called a "short-axle" bow is now hardly considered mid-length.

However, shooters take this attribute very seriously - as they should. Bows can be sorted by axle-to-axle length into one of 3 broad categories:



#### **(Under 32") Short Axle Bow**

Short axle bows are very popular with Eastern treestand hunters and those who want a compact, lightweight, and maneuverable bow. These bows are best shot with a mechanical release and require a little more practice for best long-range accuracy.



#### **(32" to 38") Mid Axle Length Bow**

Mid axle length bows represent the majority of the market and include most of today's most popular units. The mid-axle bow offers a good blend of maneuverability and long-range accuracy. Popular choice for recreational shooters, bowhunting newcomers, 3D enthusiasts, and those who hunt from both the ground and a treestand.



### **(Over 38") Long Axle Bow**

Longer axle bows are sometimes called "finger-shooter" bows, as they offer a less acute angle at full draw for a more comfortable finger release. Long axle bows are usually the choice of serious competition archers and/or dedicated finger shooters, but they are often considered "too long" for treestand hunting. However, many shooters still prefer the added stability of the longer axle bow.

There is no right or wrong here either. But the traditional wisdom is that longer bows are more forgiving, stable, and accurate. This isn't to say that a short-axle bow cannot be shot accurately. It just means that your technique will need to be more exacting - particularly at longer ranges.

Nonetheless, the most popular bowhunting bows are 31-34" long. Much like the market trend with a 7" brace height, bowhunters largely regard bows under 31" as too short, and bows over 34" as too long. There seems to be some magic in the 31-34" bow. The most popular units of the last few years (Mathews DXT, Bowtech Admiral, PSE X-Force, Hoyt Alphamax, Diamond Iceman, etc.) all fall into this axle-to-axle length range. So it's no surprise that nearly half the bows on the market have similar axle-to-axle lengths.

However, don't be swayed just by what's popular. Not every bow is suited for every shooter and purpose. For example, if you are a finger shooter, the acute finger-pinching string angle at full-draw will make holding back a short-axle bow quite uncomfortable. Most finger shooters look for bows with at least a 38-40" axle-to-axle length to avoid this problem. On the other hand, bowhunters who hunt exclusively from a treestand often appreciate a small bow that can be maneuvered around shooting rails, tree limbs, etc. So the right choice is the choice that's best for you.

With all that said, if you're a new shooter, or plan to shoot at longer distances, we suggest you not choose the shortest bow you can find. Instead, choose a more moderate length bow to help tip the forgiveness scales in your favor while you learn the craft.

### Speaking of Forgiveness

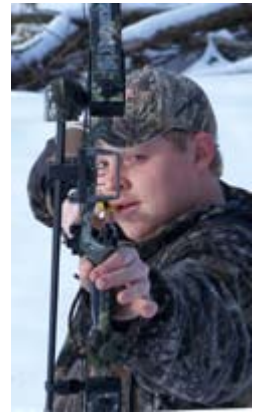
Forgiveness is quite a buzz-word in archery. More forgiving bows, more forgiving arrows, more forgiving arrow rests, etc. The term would imply that you can do things wrong, and everything will still be OK. Of course, this is a bit misleading. Even with the best equipment money can buy, a shooter still must possess a certain amount of skill. So when equipment is described as "forgiving", what does that mean?

The term "forgiving" really means "forgiving to human errors", which is something that isn't easily quantified - and the reason the term is used so loosely. If we were to test a variety of properly-functioning bows in a mechanical shooting machine, the varying axle-to-axle lengths, brace heights, and cam characteristics would have no significant effect on the accuracy and repeatability of the bows. The shooting machine would shoot each bow exactly the same, each and every time.

Unfortunately, humans cannot shoot with such mechanical consistency. We bobble; we flinch. We punch our triggers, or torque our grips. Even for the world's most talented shooters, accuracy is often limited to the occurrence of human error. And what makes a particular bow more or less "forgiving" is the bow's tendency to accentuate or attenuate these unavoidable human errors.

## Forgiveness Perspective

Of course, we should keep the "forgiveness" issue in some perspective. Good technique and a solid practice regimen are critical to success in the field, regardless of which bow you ultimately choose. But the less forgiving your bow is, the more exacting your technique will need to be. But don't make more of this issue than need be. Within a typical 30 yard bowhunting range, virtually any properly-tuned compound bow can be shot with acceptable accuracy. And with a little practice, even a novice shooter can easily bring down big game within this range. So if you hunt in dense woods where 20 and 30 yards shots are common, your bow's "forgiveness" just isn't such a critical consideration. But if you hunt in more open country, where you must be able to reach out to 50, 60, even 70+ yards, where the smallest glitch means a wound or a miss, you should be more selective with the bow design you choose.



## Cause of Unwanted Vibration and Noise

The last thing that a bowhunter wants to sacrifice is stealth. A quiet bow can mean the difference in filling your tag, or just telling the story of the one that got away. There is no denying that some bows tend to be quieter than others. But you might be surprised to learn that bow noise is sometimes not from the bow at all.

Before we can pick this issue apart, you should know a little about why bows tend to make noise. The video link at your right is a high-speed video of a bow being fired. Watch the video carefully. Notice how the sight flexes and distorts after the shot. Notice that the entire riser seems to flex. Notice the string flopping forward. Then take into consideration that this video was taken from a \$700+ state of the art parallel limb bow, one of the best bows money can buy. Then imagine what it would look like for a bow that wasn't built so well.

If you study the video for a moment, it becomes obvious why bows make noise. Noise is caused by vibrations in the air. And as you can see, firing a bow causes dramatic vibrations. When you fire your bow, everything on your rig momentarily dances and blubbers around violently: your limbs, your string, your sight, your quiver, the arrows in your quiver, etc. The whole rig! Of course, this all happens in a flash - so you don't see it. But you can sure hear it and feel it. And the more energy your bow has, the more vibration it tends to create.

But...if the vibrations can be stopped quickly, before they have a chance to create sound, the result is a quiet bow. If the vibrations are allowed to continue and die-out naturally, the string will continue to "twang" and vibrations will transfer into the bow's riser and accessories. Not only does this create a "buzzing" feeling in your hand (not recoil), the vibrations also cause any loose parts on the bow to make noise. Incidentally, in many cases shooters blame their bows for being noisy when in fact the accessories - particularly the accessory fasteners (screws) - are the true noisemakers. A tube-aligned peep-sight is also a common culprit for noise, as is a dirty cable slide.

## Whisper Quiet Bows

With so many possible ways for noise to be created, it's really quite misleading to advertise a bow as "whisper quiet". Yet, every bow manufacturer tries desperately to convince you that THEIR bows are the quietest. The fact is, no bow is whisper quiet. Even the quietest bows make a solid 70+ dB bark when they fire. But you can help minimize noise by using only quality accessories, installing good string silencers, carefully maintaining your fastener torques, and keeping your bow in good overall condition. And even with that, should your new bow be a bit more noisy than you like, this is where the rubber stick-on's, jiggly stabilizers, and hydraulic whatchamacalits may come to the rescue.

We strongly recommend you consider noise a function of your entire "bow system", rather than just the bow, and prepare to tackle it accordingly. Noise reduction begins with quality. Thoughtful construction, tight tolerances, quality parts, good maintenance, a professional setup, and strategic incorporation of dampening technologies all combine to create the quiet bow. It doesn't usually come straight out of the box.

### Attributes to Consider

While weighing the different bow attributes boils down to a personal choice, we you suggest you give some attributes more consideration than others.

	Not Important	Minor Consideration	Somewhat Important	Very Important	Critical Consideration
Brand Name		X			
Axle to Axle Length				X	
Brace Height					X
Cam Aggression				X	
Cam Type			X		
Let-Off Choices				X	
Limb Type (Split/Solid)		X			
Power/Speed			X		
Proper Fit					X
Recoil (Parallel Limbs)				X	