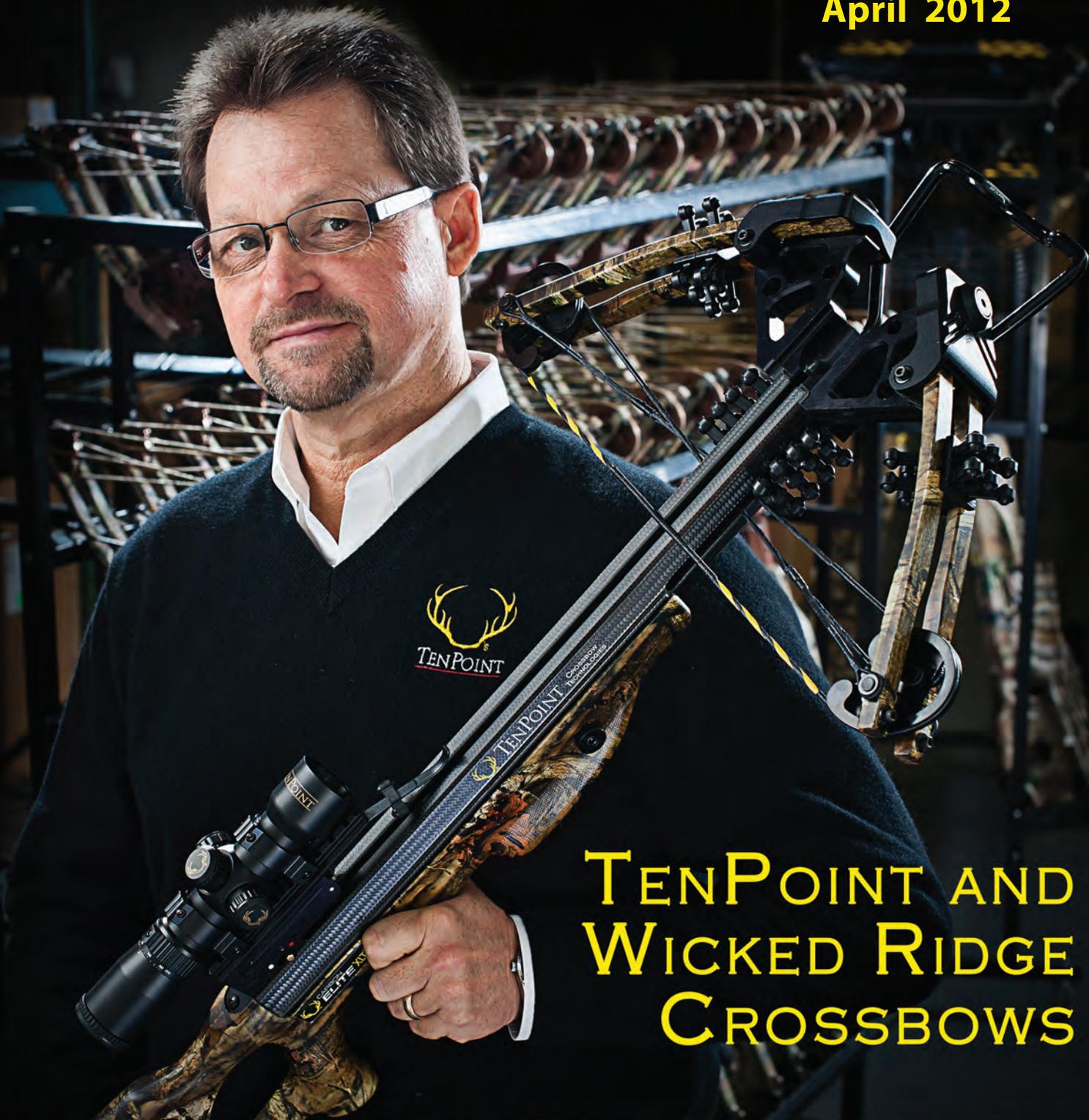


# ARROWTRADE<sup>®</sup>

April 2012



## TENPOINT AND WICKED RIDGE CROSSBOWS

**Plus:**

**Fixed Blade Broadhead Review** | **Top Products from the Shows**  
**Head to Head Test of Mid-Priced Bows** | **Dealer Profile: Wilde Arrow Archery**  
**How to Balance Bows** | **Scientific Target Test**  
**Latest Traditional Arrows** | **New Products Round-Up**

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# ARROWTRADE™

April 2012

Volume 16

Number 3

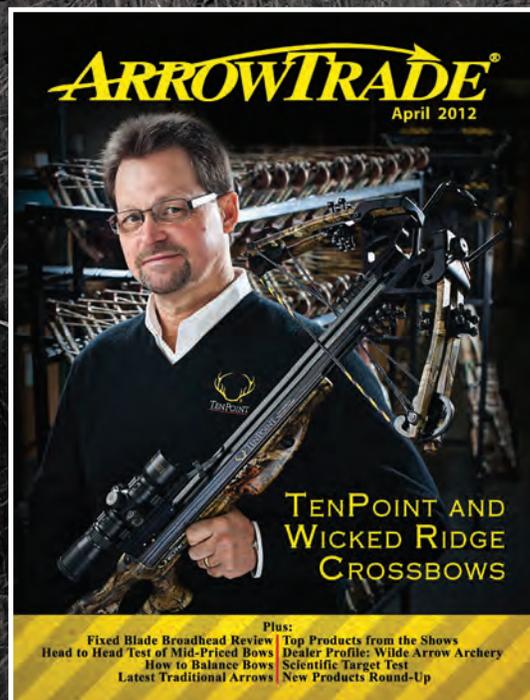
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## 8 COVER STORY TenPoint and Wicked Ridge

A stone's throw away from where he grew up building strings for his parent's pro shop, Rick Bednar now heads one of the world's top crossbow manufacturers. The pro shop is approaching it's 50th anniversary. Meanwhile the manufacturing arm of the same corporation is responsible for innovations like the Compact Limb System that made crossbows easier to handle, and the SteddyEddy support that helps any crossbow owner shoot more accurately. Follow Tim Dehn's tour through the highly efficient crossbow assembly process, and learn how Rick's own son has helped widen the customer base.



Cover Photo by Andy Eicher  
Andrew Eicher Photography



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Summary

Bow	Max Speed (fps)	Average Speed (fps)	Dynamic Efficiency (%)	Sound Output (dBA)	Vibration Output (g)
<b>Bear Legion</b>	298.7	266.1	83.6%	84.5	196.5
<b>Diamond Fugitive</b>	317.4	281.7	84.4%	84.5	210.0
<b>Hoyt Rampage XT</b>	309.2	274.8	85.4%	86.2	131.2
<b>Mission Riot</b>	287.2	256.2	81.5%	89.6	168.5
<b>Parter Velocity</b>	296.3	262.3	81.9%	89.8	194.0
<b>Quest Torrent</b>	300.6	270.4	85.7%	84.4	190.5
<b>Ross XD</b>	279.1	250.1	75.3%	85.9	188.1

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## From The Publisher

# Gearing up for May

**O**ur new publishing schedule has made the first half of the year a busy one. While we have been a bi-monthly publication since our start in May of 1997, this year we added this seventh issue, April. That addition meant for the first time we'd have three deadlines 30 days apart. I'm happy to say that our staff, contributors, our new computers and our commercial printer have all risen to the challenge. In fact I think the May issue you'll see in a few weeks might be our strongest issue ever, at least in terms of the equipment coverage. Here is the line-up:

**Premium Bows Head to Head**— Once you strip away the marketing support, how do today's hottest bows really perform? Anthony Barnum puts the sensors and shooting machines to today's top models to record vibration, noise, energy output and speed per inch of power stroke.

**Better Bow Quivers** — Pat Meitin puts the spotlight on a rapidly evolving accessory category, the lightweight quivers just about every compound archer uses to transport arrows and safeguard broadheads.

**Scientific Crossbow Test** — Jon Teater begins his 2012 series of crossbow tests, adding a scorecard that ranks each model in key areas like trigger force, accuracy, noise output and dynamic efficiency.

**Stocking and Setting Up Tournament Sights** — Coach Larry Wise guides retailers in selecting tournament sights for their inventory and in helping mount them correctly so archers can get all of the precision they are paying for.

**The 2012 Crossbow Lines: Part 1** — Crossbows are becoming such an important part of the market that we'll be reviewing the current crop over two issues, May and July. A new contributor, Tom Watson, leads off by detailing half a dozen brands.

**Scientific Broadhead Test**— Jon Teater puts an innovative broadhead under the microscope, on the scale and through two test mediums in an attempt to quantify its killing power.

**Fall Restraint Systems** — Manufacturers are developing better ways to protect the majority of bowhunters who hunt off the ground. Mike Raykovicz shows us all how to hunt safer while staying comfortable.

**Ashby on Arrows** — Todd Smith gets Dr. Ed Ashby's viewpoint on increasing the effectiveness of hunting arrows.

**Kinsey's Show Turns Ten** — John Kasun covers the tenth anniversary of this successful distributor show, another opportunity to bring *ArrowTrade* readers product details direct from the show floor.

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*Tim Dehn*

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# ArrowTrade Cover Story

## RETAIL ROOTS UNDERLIE TWO

The Bednar family is coming up on a half century in the archery business, and from all the indications I got during a March visit, they aren't slowing down. The family's roots in retailing go back to 1963, when CEO/Chairman Rick Bednar's parents opened a sports shop in downtown Mogadore, Ohio. Known today as The Hunter's Outlet, it is a full service archery pro shop with a thriving leagues program. The 14 week indoor league season attracts 32 adult shooters six different nights of the week. Saturdays, multiple shooting sessions are held to accommodate 168 youth shooters.

When the leagues shut down for the spring, a wall goes up so the huge

indoor range can become a staging area for the crossbows manufactured right next door, at 1325 Waterloo Road. That's the home of the TenPoint Crossbow Technologies brand founded by Rick Bednar, and of the Wicked Ridge brand that was the brainchild of his son Phillip.

I spent the morning interviewing the company CEO and the Wicked Ridge brand manager, then in the afternoon I watched crossbows being built in the 13,000 square foot, two story headquarters building. Two miles away another 8,600 foot building is used to inventory stocks as they're routed to and from a film dip vendor, and for some light manufacturing of accessories. If you subtract the office space and

do the math, you'll see that less than 20,000 square feet is dedicated to warehousing and assembly. That's a tiny foot print when you consider TenPoint is regarded by many as the top crossbow brand in the archery industry. By top I don't mean highest priced, though with carbon barrel crossbow packages reaching \$2,700 TenPoint is a leader in that category as well. I'm using "top brand" to refer to a product line that is both well recognized and well thought of.

Rick Bednar got his first experience in manufacturing as a youth building recurve bow strings for the pro shop his parents ran. Bill Bednar was a creative man who also developed and manufactured a fletcher and a patented bow sling. The elder Bednar was one of eleven shareholders who pooled their resources and contributed their time and talents to launch Hunter's Manufacturing back in 1994. That corporation controls both the pro shop and the manufacturing division, which does business today under the brand names TenPoint Crossbow Technologies and Wicked Ridge Crossbows.

Rick Bednar was the head of Horton Manufacturing from 1985 to 1992, and when he returned to the crossbow business in 1994 with the aid of family and friends, it was to the same facility Horton had vacated two years earlier. Just as he had during his ownership of Horton, Bednar kept clear of the vertical integration approach that would have required heavy machinery and special manufacturing skills, as well as posing challenges to protect employee health and the environment. There's no fiberglass dust to collect and filter at this archery manufacturing plant because the limbs are being contoured and drilled by Gordon Composites, in the same Colorado facility they began as bar stock and laminates. There's no high pitched whine of cutting machines and smell of coolant, because metal



*While working as an intern as he completed his MBA from the University of Akron, Phillip Bednar convinced the manufacturer of TenPoint Crossbows that it should launch a more affordable brand. Today the younger Bednar is the brand manager of Wicked Ridge Crossbows. He's shown above with the new Wicked Ridge Raider CLS, the first Wicked Ridge model to feature the Compact Limb System pioneered by TenPoint.*

# TenPoint & Wicked Ridge

By Tim Dehn

## POPULAR CROSSBOW BRANDS

risers, limb cups and trigger components are all formed, deburred and anodized elsewhere. There's no high tonnage injection molding presses at work, or their network of plastics dryers and cooling towers, because everything from the big Vertron stocks to the tiny interchangeable grippers in the new Bednar Perfect Puller are molded by vendors elsewhere in the U.S.A. Letting manufacturing vendors do what they do best allows TenPoint Crossbow Technologies to do what it does best, the company CEO said. "We don't mold or machine," he told me in the second story conference room. "We design, we prototype, we test, we assemble and we market crossbows and accessories. We happen to have a great crew of people who put them together for us," Bednar said. Counting the small staff at the pro shop employment ranges from a low of 56 to a high of 70. Many are long term employees, attracted by the company's full package of benefits and a friendly, supportive atmosphere.

The assembly area is a model of quiet efficiency, with triggers, quivers, and cocking mechanisms being assembled on a second story mezzanine. Those accessories flow down to the main floor in boxes of 24. As crossbow front ends and stocks are assembled, they are racked in sets of 24 and moved

along a circular route to the packaging area. The same staff, working to the same high standards, assemble both the Wicked Ridge and the TenPoint line.

For every ten crossbows reaching the loading dock, seven are TenPoint models and three are under the Wicked Ridge label. For every 10 crossbows sold in North America, Bednar estimates 2.5 of those were assembled in this plant.

This company isn't waiting for additional states to welcome crossbow use in order to expand its market share. It is introducing new models to encourage TenPoint fans to upgrade and to win business away from the competition.

Let's start with introductions of carbon barrels

at the top of the line. At the 2011 ATA Show and SHOT Show, TenPoint unveiled the Carbon Fusion CLS and Carbon Xtra CLS. Substituting a hand



*In the photo at top, I photographed Rick Bednar next to a plaque Outdoor Life awarded him in 2010 for being one of the 25 most influential leaders in hunting and fishing. Bednar got his start in the archery industry at a young age, building bowstrings for sale through the archery pro shop operated by his parents. The family lived in an apartment in the business, which is shown above on a sunny March afternoon. Now known as The Hunter's Outlet, the business is next door to the Mogadore, Ohio headquarters of TenPoint Crossbow Technologies and Wicked Ridge Crossbows, shown in the photo at left. A second structure of slightly smaller size also serves the corporation at a site about two miles away.*

laid carbon barrel for a conventional extruded aluminum barrel saved approximately 20 ounces. This year there's a third carbon barreled model, the Carbon Elite XLT (17.5 inches wide, 13.5 cocked), that incorporates the compact XLT bow assembly. Between the XLT bow and carbon riser, this new model weighs a trim 6 pounds 14 ounces.

"Carbon has some very unique features," Bednar said when I asked him what made it a good material for this application. "It's very, very light and very strong in both tension and compression. It's got good dimensional stability as it's being made: the barrel from front to rear is accurate to within .002 of an inch." You can feel the texture of the hand laid carbon fiber on the side of the barrel, but the track along the top is polished to a mirrored surface. "There's very little friction," Bednar noted, so with less heat the servings can last longer and arrows can fly faster. Crossbows tend to be noisy when compared to vertical bows, and carbon barrels do a much better job of dampening noise and vibration before it can reach the shooter. "Plus it's so darn beautiful looking," the CEO said. There are attractive carbon finishes being applied to some bows and accessories, but the fact that you can see into the clear resin gives these barrels an added dimension of quality.

How much does a carbon barrel add to the price tag? "The aluminum barreled little brother is the Stealth XLT, which sells for about \$1,099 as



*The best TenPoint models sell well above \$2,000 with their accessory packages. Rick Bednar said people who question the cost aren't considering everything that goes into a premium crossbow. The bow at the front needs to have a finely crafted riser, limbs, cams and harnesses, just like a vertical bow. Behind that you need a barrel, a form-fitting stock, a cocking mechanism and precision optics. The better scopes from TenPoint adjust for arrow speed, as we're showing at left. Accessories like custom cases and a dozen arrows add hundreds of dollars more in value.*

a package. The Carbon Elite XLT is \$1,599 in a package, though it comes with a nicer package. You'll never sell a carbon crossbow to everyone who walks down the street, but these are very desirable bows as you move up and look at replacing your equipment."

These carbon barreled units are also among the fastest in the TenPoint

line. The Carbon Xtra CLS (laminated wood stock) and Carbon Fusion CLS (molded Verton stock) produce from 109 to 117 foot pounds of kinetic energy, depending on your choice of four recommended arrow weights. Arrow speeds bear an inverse relationship: The 370 grain Pro Lite Arrow zips along at 364 fps from that 109 foot pounds,



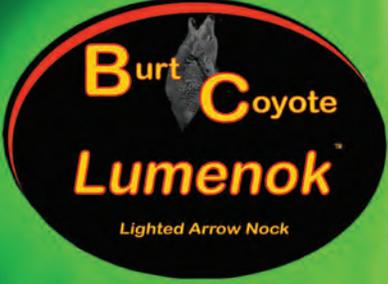
*The 6 ounce 4 Arrow Instant Detach Quiver goes out with every crossbow. Above, Kayla Rosekelly snaps brackets onto carbon rods. At left, Steve Catalano gets ready to add the hoods in one of four patterns.*

Triggers are such a critical component of crossbows that the company handles their production with its own veteran staff members. They work on the elevated mezzanine surrounding the main production floor. At right, Neal Warner uses a torch to apply heavy shrink-wrap to the arrow retainer, two of about 20 parts that go into each trigger. He'll need two hours at this job to stay ahead of the day's trigger production.



Above, Phil Kinion applies a fast drying paint to the white "safe" indicator dot. Above right, Dylan Snelbaker is installing adhesive-backed pads that help quiet the trigger action. At right is one of the four trigger styles used on various models, complete except for the cover. The slanted triangular piece at upper right is part of the Dry-Fire-Inhibitor mechanism that comes on every crossbow in the Wicked Ridge and TenPoint Crossbow Technologies lines.





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*Mike Wollard is assembling claws for the ACUdraw. A cord self-centers on the claw as it safely and easily draws the string back along the barrel and into the trigger latch. These ACUdraw ratchet mechanisms (above) are awaiting assembly into stocks. The ACUdraw is offered on every TenPoint model, as is a rope style ACUdraw 50.*

while the 545 grain Full Metal Jacket Arrow leaves the crossbow at “just” 312 fps but carries the maximum 117 foot pounds of kinetic energy.

In between those two extremes lies the 425 grain Pro Elite Carbon Crossbow

Arrow and the 435 grain XX75 Magnum Aluminum Crossbow Arrow. TenPoint is listing the performance characteristics of all its models with these three different arrow categories, as part of a new arrow ballistics program.

Vertical bows can list their performance under IBO or ATA settings, but crossbow manufacturers haven’t had any standard reference point. “What I felt we needed to do was completely and accurately engineer arrows for our crossbows that met minimum and maximum weights, and then educate the consumer as to what that means in the situation he is in,” Bednar said.

The 2012 catalog devotes two full pages to the program and the company is planning monthly updates for the website and You Tube marketing overseen by E-Commerce Manager Brian Flaherty. The gun hunting industry offers a wide range of loads for popular cartridges like the .270 Winchester,

No other business magazine devotes as much space to covering the traditional side of the archery industry. And no other archery trade publication has the kind of in-depth crossbow coverage you’ll find in ArrowTrade. We’re dedicated to promoting the full range of archery equipment to maximize participation in the sport and build healthy sales for retailers and their suppliers.

From Longbows to Crossbows, ArrowTrade Leads the Way in Equipment Coverage



*Barb Terry is familiar to many ArrowTrade subscribers due to her work at dealer schools and trade shows. The day I visited she was readying the French version of the owner’s manual for one of the new models.*

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A major supplier of crossbow arrows, TenPoint Crossbow Technologies has developed an Arrow Ballistics Program that explains how different arrow weights affect things like noise, accuracy and kinetic energy. While it can recommend the Pro Elite Carbon Crossbow Arrow above as a "standard weight" for most purposes, the firm says the "heavyweight" Full Metal Jacket below is a better choice for hunting in inclement weather, thick cover, or for animals like elk that have tough hides. With a FOC of 15 percent, the company also considers it the most accurate of the four arrows it offers, provided you know the distance to the target.



Joanna Rolenz is Chief Financial Officer for the company and one of the original 11 shareholders. She is the sister of CEO and Board Chairman Rick Bednar.



Sam Hall joined the company straight out of college and works as both a receptionist and sales assistant. The Ohio firm has such great employee retention that her two years on the job marks her as one of the newest employees. The plaque above her chair is from the Wounded Warrior Project, which helps wounded veterans enjoy the outdoors again.

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Bednar said, tailored for everything from thin-skinned varmints to elk, “That’s what we’re bringing to the crossbow business.”

TenPoint builds all the arrows it sells, and now is color coding the flat nocks. “The Full Metal Jacket has a white nock, our aluminum arrow is orange. The standard carbon nock is yellow while a light weight carbon arrow has a green nock,” the founder explained.

While faster, the lightweight arrows are going to cause increased vibration,

limb stress and noise. “With lighter spines and because they carry less momentum, lightweight arrows are less stable and accurate in flight down range, and more easily deflected by wind, rain, sleet and/or debris,” the TenPoint catalog states. Someone shooting in rain, snow or in thick cover would be better off with a heavyweight arrow like the Full Metal Jacket, Bednar said. TenPoint’s testing also showed they’re also the top choice for accuracy, provided you have time to range the distance to the animal. While TenPoint

only builds arrows to 545 grains (assuming a 100 grain broadhead) the use of heavier inserts or inner sleeved arrows can extract more energy from the crossbow all the way up to 750 grains, company testing shows.

I asked Bednar why TenPoint, with all its talent in crossbow design, hasn’t introduced a magnum made to compete with high energy units from other manufacturers. “We don’t buy into the speed race,” Bednar commented. “I’ve built prototypes for the military. I’ve spent time developing them with



*After being carefully, inspected and repackaged, components from vendors merge with subassemblies built by workers on the mezzanine and come to the main production floor. At a series of stations they are assembled 24 units at a time and move toward the packaging area. Above left, former Ukraine resident Yuriy Onishkevich joins the costly carbon barrels with trigger assemblies (left) that are supported above an aluminum bedding block. He also positions the long rod that reaches from the grip safety shown at lower left, back to the trigger assembly. The top five models in the TenPoint line have this grip safety, which comes set up for right hand shooters unless the dealer orders a “lefty.” You must depress the button with your thumb for the crossbow to fire, which means your fingers are safely out of the way of string travel. Below right, Rosemary Hawks is adding string travel warning labels to the deep flared grips used on the lower cost Maverick HP and GT Flex. Above right, this precision jig lets Tracy Alder bore sight crossbows. All crossbows built here come with optics and while those optics vary in quality along with the price range, they are carefully mounted so your customer should be on target the first time he or she pulls the trigger on a practice target.*



my dad. So I've built and used fast, heavy crossbows in various designs. The crossbows we build for hunters are designed to be user friendly. We feel the sweet spot is an arrow flying from 330 to 350 fps out of a crossbow that weighs from 6-3/4 to 7-3/4 pounds. That's where you get the best combination of accuracy, mobility, reduced noise and reduced vibration. I buy everybody's crossbow to test and I've

had them fail after as few as four shots. You can't build a solid long term relationship with customers with equipment that's constantly under repair."

"We build crossbows to shoot the speed that gives us the most durability," Phil Bednar added. "You know if you buy a TenPoint crossbow it will be good for life."

Phil is the brand manager for Wicked Ridge, and no story about

certain customers, those willing to pay \$599 and up. There was a void in the crossbow market for a high quality, simple, reliable crossbow that was in that \$399 to \$599 range." Phil said the brand was introduced in 2010 and just about every dealer who was carrying TenPoint added the Wicked Ridge Invader and Warrior models. "We used the TenPoint reputation to push it through."

"We were very well positioned to bring in the Wicked Ridge brand," agreed Rick Bednar. "The mother ship was doing the design, the assembly and the customer service. The same hands that put a \$1,500 TenPoint together put a \$400 Wicked Ridge together and have just as much pride doing it."

Just as with TenPoint, improvements have been made in the Wicked Ridge line for 2012. "We upgraded the performance of the Warrior and Invader. Now their limbs are of Gordon Glass, and we upped the poundage to give them an extra 15 fps. We also have a new flagship bow, the Raider CLS," the brand manager said.

The Raider uses a more economical



*Depending on the model, solid or laminated limbs prepared by Gordon Composites and decorated by Tarjac are assembled with cams and risers at this station, then harnessed with the aid of one of three powered bow presses. Paul Greening is working with limbs and cams above left, while Heith Polling is working with strings and cables. The chart next to the strings at his left lists the exact twists needed in every component to produce a bow that is in tune and at the correct draw weight. The test machine below and indicator dots on the cams or wheels is then used to verify those settings.*



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version of the Compact Limb System (CLS) technology developed by TenPoint. At 180 pounds draw weight those 12 inch limbs help deliver a 330 fps arrow backed by 101.6 foot pounds of kinetic energy. That's a significant performance advantage over the other two models, and makes the \$799 suggested retail price easy to swallow.

Unlike the TenPoint brand, the Wicked Ridge models do not have Minimum Advertised Pricing (MAP) restrictions. Box stores and independent retailers are free to decide what to charge for the new Raider CLS and the upgraded Warrior and Invader models.

Phil Bednar helps direct marketing for both brands, and he said the company is backing each with equal investments in print ads, television ads, and program sponsorship. "In the last

five years our impressions have really grown," the younger Bednar said. "In print ads, I would say we're as strong as any other crossbow manufacturer. In broadcast we've tried to align ourselves with leading programs where the hosts share our core values. TenPoint and Wicked Ridge help sponsor *Texas Trophy Hunters*, *Live to Hunt*, *Petersen's Hunting*, *The Choice*, *North American Whitetail* and *Doug Koenig*."

Fred Eichler, known for his support of traditional archery will now be using a crossbow for some of the episodes of *Fred Eichler's Predator Nation*. "We also run advertisements on The Outdoor Channel, Sportsman's Channel, and The Pursuit Channel," Phil Bednar said.

TenPoint is advertising not only the two crossbow brands but a growing selection of accessories. It has added

a quiver bracket and arrow puller. The Ambidextrous Side-Mount Quiver Bracket carries the quiver in line with the stock, rather than crosswise to it. "That evolved from crossbows getting narrower," Rick Bednar explained. You lose some of the easy handling characteristics of a modern, narrow front end if the arrows are sticking out both sides.

The Bednar Perfect Puller was named after its designer, the late Bill Bednar. The lightweight pliers comes with three sizes of arrow grippers to handle everything from the slim new Easton Injexion hunting shafts to big line-cutting target shafts like the X-Jammer-27 Pro from Carbon Express.

"As bows have gotten more powerful and arrows have gotten smaller in diameter backstops have become denser," Phil Bednar commented. "All



**Employees working at "Station Seven" have to move fast to keep up with the finished crossbows headed their way. At left, Becky Puett is packing the owners manual along with Allen wrenches and the single bolt and two set screws needed to assemble the crossbow. That's about a two minute job for an experienced retailer. At center, Sue Slone is inspecting and labeling products before passing them to Chris Greathouse (far right) for final packaging. At lower left, I photographed Belinda Fox and Micki Sears in shipping with a small part of the day's production. Meanwhile Samona Luman (at right below) was checking and counting components at the receiving dock.**



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of that has evolved to make it more difficult to pull an arrow out, particularly a short crossbow arrow where you might get 12 or 13 inches of penetration."

Rick Bednar demonstrated how if there isn't room to apply the arrow puller in front of the fletching, it can be used to pull from behind the fletching. He said the new accessory is being welcomed by not only retailers and consumers but by the big arrow manufacturers as well. He considers it a "Game Changer" that will make practice more enjoyable and lessen the chance that the arrow will be damaged.

The company's first accessory breakthrough came a few years ago with the introduction of the Steady Eddy. This is a monopod that attaches to the stock of the crossbow and adjusts in length for use from tree-stands and ground blinds. "If you utilize the Steady Eddy it makes you twice as accurate," the company CEO said. "If you can shoot 3 inch groups at 20 yards without it, you'll be able to shoot 1-1/2 inch groups with it."

Last year the firm introduced the ACUrope, the first compact, fully retractable rope cocker. It looks like a higher quality version of existing rope cockers, which reduce cocking force by about half through the use of

twin hooks and pulleys. However, when the shooter is finished cocking the crossbow, the cord completely retracts inside one of the two grips. Then the grips dovetail together to form a neat unit the hunter can slip inside a belt-mounted holster or pouch. The slender draw cords are made of Spectra 1000 fiber, which for its weight is 15 times stronger than steel.

When I told the Bednars I've worried about leaving my cocking rope around my neck in between use, they told me a crossbow shooter on the retail range had his catch on the string and his neck was scarred in the incident. The ACUrope can help any crossbow user be safer and like other rope cockers, it plays an important role in accuracy by insuring the crossbow is cocked straight.

The ACUrope, SteddyEddy, the new quiver bracket and the Bednar Perfect Puller will work with anyone's horizontal bow, Bednar noted, helping to account for their growing popularity. The Bednars attribute that not just to a quality brand image but to the

*Below, Manager Tim Vandegrift has been working for the business since he was fourteen. The pro shop is now part of the same corporation that employs Jake Hout (lower right) as an engineering technician. Rick Bednar's sister Cindy Shaffer (with him at right) heads up personnel and oversees the benefits package that helps to attract and keep good employees.*





At left, Gary Smith Sr. replaces the cable saver on a crossbow sent in for warranty repair. The hunter will pay only the shipping one way. The company encourages annual crossbow tune-ups, at the factory or at a dealer set up to provide the service. At right Smith's son, Gary Smith Jr. (right) and Engineering Manager Mike Shaffer were working to ready a new home in the pro shop building for the customer service team, so more space would be available for production.

perception that this is a good company to do business with. "Our customer service staff really cares about taking care of the customers," Phil Bednar said. That is reflected in the speed they return calls for information and the

speed with which they return crossbows sent in for tune-ups or repair. "It's a hassle free type of experience that comes with buying and owning Wicked Ridge or TenPoint crossbows."

If you would like more information

about the 2012 product line or would like to request a visit from one of the company's five sales rep groups call the Ohio crossbow, arrow and accessory manufacturer at 330-628-9245.



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## Bohning Adds Sales Director

Michael Collins, of Houghton Lake Michigan, has been named Director Of North American Sales for Bohning Archery of Lake City, Michigan.

"We are very excited to have Michael as the newest member of our sales and marketing team. He is very forward thinking and willing to tackle any project. With Michael's help, we are looking for aggressive growth in the next few years," according to Stacey Randall, Bohning V.P. sales & marketing

"My mom was a PE teacher at the high school in town and one day brought home a Fred Bear recurve and a few arrows for me," Collins said in explaining his long fascination with archery. "From that day forward I started flinging arrows all over the place; not a tree in the backyard stood a chance! As I got older, archery remained a constant but I found myself spending much of my time with sports such as football and baseball. For me, hunting

with my bow in particular, was a way to relax on the weekends and that held true throughout college. I attended Northwood University with plans of pursuing a sports management degree and playing football. I thought that if I could work every day in an area or industry that I naturally had fallen in love with then I wouldn't necessarily feel like I was working."

"Football never worked out, but baseball did," Collins continued. "It was being a part of baseball that brought me back to hunting and shooting my bow. It was then my thoughts narrowed from working in sports, to working in either baseball or archery.



Michael Collins

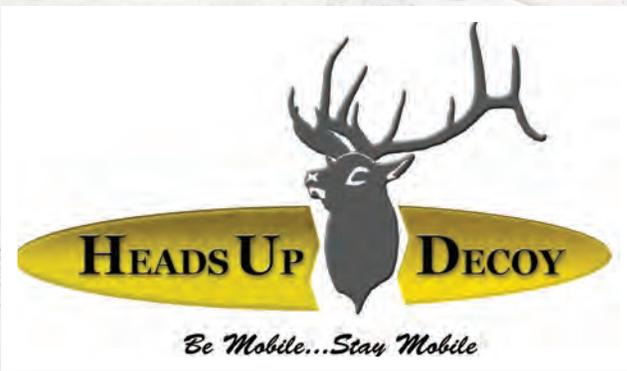
I had the opportunity to do just that as I moved to Wisconsin and worked in summer collegiate baseball. With two seasons under my belt it was time for something else. I stayed in Wisconsin but returned to the archery world, working for a local pro shop. It was then I finally realized the size of the archery industry and the many opportunities it had to offer. I became very interested in all avenues and eventually found myself heading home to work for Bohning. I can't tell you how excited I was to find out I was going to have the opportunity to work close to home in an industry I love. It couldn't have been a better fit," this new Bohning employee concluded.

## Heads Up Decoy Updates Logo

Garett Roe, founder and designer of Heads Up Decoy, recently introduced a new logo for the brand of lightweight, portable decoys that represent just the head and neck of game animals. Roe calls it the most exciting decoy series ever designed, because of the way it allows hunters to draw the game they're hunting toward the hand-held decoy.

"When I first started the business, my daughter Jessica designed the first logo. Jessica was recently accepted into the University of Kansas Medical School. In many ways, Jessica has been a source of motivation and inspiration for me. This is a kid who epitomizes hard work, perseverance, faith, intelligence, and a thirst to live life like you're supposed to. I am fortunate to have two daughters who aren't my own...be my very own. Life and circumstances are very interesting indeed."

Roe said he had mixed emotions initially with the idea of changing the whitetail based logo he had started with to the dramatic new version featuring an elk. "I am a whitetail hunter through and through. That will never change. But, Heads Up Decoy is what it is today because I developed an elk decoy I thought every elk hunter should own. It has since been accompanied by several other designs...including my beloved whitetail. I felt it was important to include similar characteristics as the original and to include an elk since the elk got me into business. The elk is not to alienate anyone...it's just where Heads Up Decoy started. Thanks to all of our supporters...my beautiful wife and family most importantly...over the past several years who have helped Heads Up Decoy get to where we are today and where we will be in the future."



# Bear Inks Premium TV Pact

“Rise Up. Join Us.” That is the challenge that Bear Archery threw down this year in its marketing campaign for the Anarchy bow, and three men rose to the challenge. Matt Duff, Jeff Danker and Chipper Jones have now joined the ranks of an already strong Bear Archery family. A Bear spokesman said Major League Bowhunter and Bear Archery hit one out of the park at the 2012 ATA show where a two year contract was signed that partners both Bear Archery and Trophy Ridge with the popular TV show that airs on The Sportsman Channel during the 3rd and 4th quarters.

“From the first phone call, to shooting the product, to our first face to face meeting, everything felt good to us about this new opportunity. We feel at home with the guys from Bear and truly believe in their products,” stated Matt Duff with Major League Bowhunter.

Major League Bowhunter is a truly educational bowhunting only show that covers every detail of the hunt in a fresh, new way never before seen on Outdoor Television. The show invites all hunters, both experienced and beginner, to learn something from every encounter each week that will help them be more successful their next hunt.

Hosts Jeff Danker, Matt Duff, and Chipper Jones will take the viewer through an entire season of deer hunting successes and failures, delivering in a very unique way every aspect of their hunts. These avid outdoorsmen believe that there is always something that can be learned from every experience in the field, both good and bad.

“We couldn’t be more excited about our newly formed partnership with Major League Bowhunter, we look for long-lasting relationships with quality people and we feel we are getting all of that and more with Major League Bowhunter,” says Jack Bowman, vice president and general manager for Bear Archery and Trophy Ridge

Bear Archery manufactures and distributes compound bows,



Shown during the ATA announcement are (left to right) Jason Pickerill, Jeff Danker, Jack Bowman, Chipper Jones, Bob Keller and Matt Duff. Danker, Duff and Jones are with the Major League Bowhunter program. Pickerill is Bear’s marketing manager, Bowman is vice president and general manager, and Keller is the company CEO.

traditional bows, quivers, arrow rests, fiber optic sights, stabilizers, and other related accessories under the Bear Archery and Trophy Ridge brands. For

additional information regarding Bear Archery or Trophy Ridge, please visit [www.beararcheryproducts.com](http://www.beararcheryproducts.com) and [www.trophyridge.com](http://www.trophyridge.com)

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<p><b>Sand Shark</b> Light Stryke/AMS Retriever® Pro</p>	<p><b>Sand Shark</b> AMS Retriever® Pro</p>	<p><b>Sand Shark</b> Light Stryke/Muzzy XD</p>	<p><b>Sand Shark</b> Muzzy XD</p>

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## NJ Hunters Claim Muzzy Title

When it comes to deer hunting, what young New Jersey resident T.J. Hunter lacks in experience he more than makes up for in enthusiasm. That passion now has carried T.J. and his father, Tim, all the way to a win in North American Whitetail Television's "Ultimate Muzzy Moment" contest.

In online public voting recently completed on [www.northamericanwhitetail.com](http://www.northamericanwhitetail.com), the Salem County residents pulled out a last-hour victory over great entries from Wisconsin, Illinois, Alberta and Pennsylvania. The winning segment showcased the September 2009 bowhunt on which T.J., then just 10 years old, shot his first whitetail. The boy's excitement over this memorable hunting achievement clearly resonated with fellow deer hunters everywhere, as a late flurry of votes for the New Jersey entry pushed T.J. and Tim past the other finalists. The Hunters will receive a special prize package of Muzzy's time-tested bowhunting products as a reward for their win.

"I remember when I received this raw video footage for consideration as

a 'Muzzy Moment' two years ago," says Gordon Whittington, editor in chief of North American Whitetail. "When I showed it to co-host Stan Potts and editor Josh Viste, they agreed with me that it would make a great segment. Every one of the five finalists in the contest was great, so for this one to come out on top says a lot. We, along with our close friends at Muzzy Products, congratulate T.J. and Tim on a hard-won victory."

The "Muzzy Moment" segment on North American Whitetail Television has been a hit with deer enthusiasts since the show premiered in 2004. Since then, every episode has featured one of these clips, in which a viewer's video footage and/or still photos of a memorable whitetail encounter has been featured. Some, such as the Hunters' entry, have centered on successful hunts. However, many others have showcased non-hunting encounters that stood out because the deer and/or its behavior was truly unique. A glance at the remaining finalists clearly illustrates that point:

Wisconsin's John Dummer provided amazing video and shed antlers of the world's largest known albino whitetail buck, a free-ranging giant on private land in western Wisconsin. (For more, visit [www.whitetailworld.com](http://www.whitetailworld.com).)

Ron Wilmore captured spectacular video of a wild Illinois buck with a massive rack spreading well over 30 inches.

Alberta's Kelly Koneczny got shocking video of hunting partner Leon Greer literally sneaking up to a walking, 300-pound whitetail buck in the wild and then grabbing his antler.

Ray Wagner took video of a wild Pennsylvania buck seen parading through the woods with a regulation basketball goal — and net — wedged onto his rack.

Potts, Whittington and Viste hand-picked the finalists from among the dozens that had appeared on North



*T.J. Hunter (left) and father Tim*

American Whitetail Television over the years. After the co-hosts announced the "Ultimate Muzzy Moment" contest on the milestone 100th episode of the show last fall, they invited viewers to visit [www.northamericanwhitetail.com](http://www.northamericanwhitetail.com) to vote for their all-time favorite. Thousands of votes were cast, with the New Jersey bowhunt narrowly topping the Wisconsin albino for top honors.

"We salute all of the finalists and are happy so many of our fellow whitetail fanatics went to our website to help select a winner," Whittington says. "It wasn't easy to narrow the field down to five finalists, so I know it was challenging for the public to pick the all-time best entry from among them. We just hope the contest inspires many more deer enthusiasts to send in their own footage and photos for consideration as future 'Muzzy Moments,'" he adds.

For more information on Muzzy's broad range of proven broadheads and other archery accessories, please visit: [www.muzzy.com](http://www.muzzy.com). Anyone interested in submitting potential "Muzzy Moment" materials to North American Whitetail Television can do so by emailing details to: [whitetail@imoutdoors.com](mailto:whitetail@imoutdoors.com).

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## Buck Stop adds Pro Staff

Buck Stop is expanding its Pro-Staff with the addition of several key staff members, President Brian Johansen said in listing the personnel and some of their qualifications.

Rob Putnam, Buck Stop Pro-Staff coordinator is a co-owner of Outfitter Review TV and videographer.

Steve Foster, Pro-Staff member is also a co-owner of Outfitter Review TV as well as videographer and program editor.

Eric Christensen is a new Pro-Staff Advisor for in-house events and sport shows.

Tammy Koenig, Pro-Staff member is host of Leading Lady's Outdoors TV show on Pursuit channel. She has been promoting women in hunting sports since 1991.

Brittany Koenig, Pro-Staff member, is part of the Leading Lady's Outdoors TV team

Jason Hansen, Pro-Staff Advisor is co-owner KillBillies Outdoors and producer, videographer of KB Outdoors TV airing on NBC Sports

Patrick Elswick, Pro-Staff Advisor

is co-owner of Killbillies Outdoors, and Host of KB Outdoors TV.

Bobby Barker, Pro-Staff Member is Videographer for Big Game Rush TV.

Ryan Kensrud, Pro-Staff Member is Videographer for Big Game Rush TV,

Johansen also named two Pro-Staff Teams for the Michigan-based scent and scent control brand: Main Frame Outdoors, Videographers, producers of hunting DVD's and True Outdoor Addictions, Videographers.

The Pro-Staff adds a new dimension to Buck Stop's marketing and sales team with more television and DVD exposure. The will also be working dealer and sport show events. According to Buck Stop President Brian Johansen, "These guys and gals are passionate about hunting and using products that they believe in. They do a tremendous amount of work with young hunters, bringing them in to the sport and installing the values that hunters hold dear. The mentoring that the Pro-Staff members put forth is a positive reflection on the hunting community and vital to the future of our sport."

## Gold Tip Hires WI Agency

Bast-Durbin Advertising (BDA) of Slinger, Wisconsin is pleased to announce the addition of Utah-based Gold Tip and Texas-based Titan UTV brands to their current roster of hunting and fishing industry clients. Now in their 14th year of operation, with over 41 years of combined outdoor-industry experience, co-owners Jeff Bast and Dan Durbin are looking forward to assisting their newest clients achieve tangible growth in 2012.

"We're continually fortunate to work with companies whose products show true innovation within our industry," said BDA's Jeff Bast. "Gold Tip and Titan UTV are no different, each showing remarkable ingenuity throughout their respective product lines. Both are a great fit for our agency and we're excited to have the opportunity to help build further awareness of their brands and class-leading products."

Tom Zelenovic, owner of Gold Tip, is confident that their new relationship with BDA will help take Gold Tip to the next level. "We're really excited about working with Bast-Durbin Advertising," Zelenovic said. "We think they will help us in our drive to gain market share and deeper awareness of the Gold Tip brand."

Shane Wilson, owner of Titan UTV, is already seeing dividends from the relationship with BDA. "The guys at Bast-Durbin have been around a while and know what they are doing," Wilson said. "From their sales-driven copywriting, to superior design work, to their thoughtful media-buying. Titan is going to be in good hands. We've only been working with them for a short time and have already had a lot of response from their media e-blasts and PR work."

# Hunters to Lead Tour of Bases

Armed Forces Entertainment, in conjunction with Paralyzed Veterans of America-Outdoor Recreation Heritage Fund (PVA-ORHF) is announcing legends from the outdoor community will tour active-duty military bases to honor America's currently-deployed, fighting men and women. The tour will take place in early 2012.

The inaugural Outdoor Legends Tour includes an all-star list of participants, including: Jim Zumbo, Jim Shockey, Michael Waddell, Ronnie "Cuz" Strickland, Jose Wejebe, Jerry Martin, Brenda Valentine, Bill Miller, Ryan Klesko and George Thornton, CEO of the National Wild Turkey Federation. Lt. Col. Deal and MGen. Randy West, USMC (ret), a PVA-ORHF Board member, will help lead the tour.

Lt. Col. Lew Deal, USMC (ret) and PVA-ORHF team leader, who was the guiding light behind creation of the tour, said he believes this is the first time celebrities and personalities from the outdoor world have been organized to meet the troops in person. "For those currently serving in a war zone there are few things that mean as much as knowing the folks back home care about you. This is a unique gathering of well-known television hosts, industry leaders and recognized outdoor personalities who are taking the time to tell our troops, in person and face-to-face, that the outdoor community cares about them and is eager to welcome them home and back into the outdoors."

The Outdoor Legends Tour will spend 10 days touring bases in Southwest Asia, meeting as many soldiers, sailors, airmen, and marines as time allows. "It's a hand-shake tour," Deal said. "There will be no production crews, no agents or sponsors, just high-profile outdoor people mingling with the troops, posing for some personal photos and saying 'Thank you for your service.'"

Ronnie Strickland and George Thornton worked with Deal to make the tour happen, and helped recruit other legends to participate. In addition, Congressional Sportsmen's

Foundation President Jeff Crane, garnered support for this tour and is 100 percent behind this effort to bring the Outdoor Legends to our military members. Chris Chaffin, PVA-ORHF marketing and PR consultant also helped with recruiting participants.

Colonel Kathleen Weatherspoon, Chief, Armed Forces Entertainment, is looking forward to the feedback. "The

'audience' Armed Forces Entertainment is charged with caring for is extremely diverse in age and personal interests. Not everyone wants to hear a rock band, or meet a movie star...We know we have many outdoor enthusiasts in the military, so we hope these 'Outdoor Legends' strike a chord with them."

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# New Products Roundup

By Tim Dehn

More than 50 advertisers supported this April issue of *ArrowTrade*, the first new issue we've added since beginning a bimonthly publishing schedule back in May of 1997. To return some of that support, and keep our readers informed, we've put together this ten-page New Products Roundup. You'll find it's arranged alphabetically by brand.

ATA Trade Show Attendees got the first look at Insert Weld, a new style of adhesive for arrow inserts by **.30-06 Outdoors LLC**. The instant adhesive has the consistency of syrup, which Matt Minshall says "corrects even the worst insert tolerance with its amazing .008 inch gap filling capability."

"With a guaranteed strength rating of 3800 psi this military grade rubber toughened formula is completely water resistant for carbon and aluminum shafts. Other important features include Insert Weld's impressive dry time of 30 seconds and cure time of 90 seconds. The 30 second dry time allows the user to set inserts properly and make last minute adjustments without fear of ruining an arrow. Arrow shafts that are properly cleaned allow Insert Weld to bond for years," the .30.06 Managing Member said.

For information on the company's adhesives or its economical new Super Bad broadhead, call (614) 409-9300.

From **Alaska Bowhunting Supply** comes an arrow designed for the highest energy bows, specifically compounds of 85 to 100 pounds draw weight and above. By employing tiny nano-carbon particles, the firm was able to make the GrizzlyStik Momentum U-FOC 175 both lighter and stiffer than its previous "biggest game" arrow, the GrizzlyStik Safari. Todd Smith said up to now the Safari has been a "go to" arrow for really big game like elephant, hippo, Cape buffalo, giraffe and Asiatic water buffalo. "The new 175 will allow even more FOC for even better penetration from the heaviest bows out there. This arrow is completely tapered from tip to tail. It will come with our standard push in tunable nock and 78 grain brass adapters. The taper builds in weight forward, strength forward, and spine forward."

The bare shaft weighs approximately 435 grains. As

the name implies, the spine is a very stiff .175 with a spine tolerance of +/- .015 and weight variation between shafts in a package is +/- 5 grains. For pricing information on the new GrizzlyStik Momentum U-FOC 175, contact Alaska Bowhunting Supply at (888) 697-9828.

**America's Best Bowstrings** is expanding into a new category with the Rubix, a micro adjustable arrow rest with click stops similar to what fine target sights have long employed. On the Rubix, each click moves the horizontal or vertical alignment by a precise .003 inch. As befits its precision, the Rubix can be used as a blade style target rest. Blade pitch is adjustable from zero to 90 degrees and three different thicknesses of blades are included in the package: .008, .010 and .012 inch.

Hunters are also being "targeted" by this rest, which uses stainless steel screws and internal components to eliminate corrosion concerns. The Rubix converts to a drop away arrow rest with the included semi capture launcher. "This arrow rest makes bow setup and tuning an absolute breeze," a company spokesman said. "With positive click adjustability and ease of use, if you are a hunter or target archer, the RUBIX is the only rest you'll ever need." For more information, call America's Best Bowstrings at (330) 893-7155.

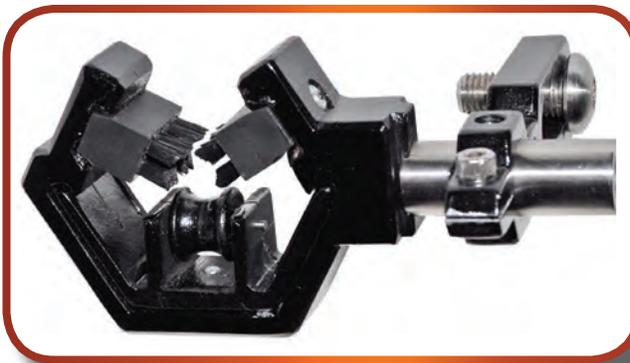
The Fish Hawk bow from **AMS Bowfishing** has a new look, thanks to an AMS Koi Carp Camo finish. Riser and limbs feature swirling silver fish in water against a blue scale background. The film dip pattern was developed for the Wisconsin firm and is exclusive to it. As before, you can order the Fish Hawk alone or in a complete package containing the AMS Retriever Pro Reel and Wave Rest. Sell that new customer the package, some arrows and points and they'll be ready for the water this spring. AMS continues to offer a Jr. Hawk and Mini Hawk model as well, all made in the USA. Reach the firm at (888) 541-7657.



From **BCY** comes a new 8190 Universal Bowstring. The veteran string material supplier says 8190 offers the lowest creep ever of a 100 percent Dyneema product. The Dyneema is the SK90 version from DSM, which claims to be the world's strongest HMPE (high modulus polyethylene.) As its processing the Dyneema for string material use, BCY blends in Gore fiber for higher durability. The smaller diameter strands formed are one reason this material can promise higher bow speeds: 24 strands of 8190 are equivalent to 18 strands of the firm's 8125 string material. For information on spool sizes and colors available, reach the Connecticut firm at (860) 632-7115.



**Bohning** is adding to its line of bowfishing products with the cleverly named Carp-ivore Bowfishing Rest. The strong molded frame carries a bottom roller to support heavy fish arrows, with two sets of tapered bristles angling in from above to allow easy top-loading and yet hold the arrow in place. Depending on the style of fish arrow nock, you may need to replace the bottom roller with a third set of brushes, so the Lake City, Michigan firm has included one in the package. The rest is supported by a strong metal mount with plenty of centershot adjustment. For more about the Aqua Assault line of bowfishing products, reach Bohning by calling (231) 229-4247.



**BowJax** is expanding the selection of stabilizers with one licensed by Mathews in the Lost Camo finish. This new version shares the makeup of the original Max Jax in that the 5 inch stabilizer weighs 6 ounces and comes with two brown Max Jax dampeners. The 7 inch stabilizer weighs 8 ounces and comes with two brown Max Jax dampeners as well. The stabilizer has an optional accessory hole on the end to customize with extra weights. According to the Idaho firm, an independent study concluded that the Max Jax Stabilizers



took more than 50 percent of the vibration out of the tested bows. Reach BowJax at (208) 762-3692.

**Buck Stop** is reintroducing the Scent Stop scent eliminating products. The Scent Stop product line consist of a Full Body Wash, a Laundry Soap, an Unscented Scent Eliminator spray and a Scent Eliminator spray with "Dirt" essence.



The new versions feature more ergonomic bottles, improved formulas, new graphics, standardized sizes of 16 ounce sprays and 20 ounce squeeze bottles, and tamperproof caps. Buck Stop says the Scent Stop Laundry Soap's low foam formula is safe for conventional and high efficiency washers. It contains no UV brighteners and is recommended for all brands and styles of hunting clothing. The big 20 ounce bottle retails for just \$10.95. You can get the laundry soap alone or in a combo pack with the firm's new Full

Body Wash. Other combo packs combine the Full Body Wash with either the unscented or dirt-scented Scent Stop sprays. Reach Buck Stop in Michigan at (800) 477-2368.

**Burt Coyote** is making things simple for the customers who want all their arrows set up with lighted nocks. The firm's Lumen-Arrows are now being sold in six packs. The company says these premium arrows eliminate some of the variables that can affect accuracy. Each Lumen-Arrow is spine aligned to the fletching, thereby making for consistent arrow flight. The nock end of the shaft is also hand squared which removes another variable. Lumen-Arrows are 100 percent carbon, not a mix of carbon and other fibers, so there is no question about their function as part of the lighting circuit. Dealers can order them with red, green or pink Signature Lumenoks



in three sizes: 45/60 (8.1 gpi, 400 spine); 60/75 (8.8 gpi, 350 spine) and 75/90 (9.9 gpi, 300 spine). For more information on all Lumenok products, contact the Illinois firm at (309) 358-1602

**Carter Enterprises** has introduced the Easy 1 release for 2012, which combines the top features of two of the Idaho firm's best selling releases in to one model. The Easy 1 is based on the popular Simple 1 and the longtime favorite, the Target 4. A Carter spokesman says "By combining the one push self-closing Dead Jaw of the Easy 1 with the finger position and ergo fit of the Target 4 we have engineered our easiest and most comfortable model yet. Key features of the Easy 1 are the I.T.S. trigger tension adjustment system allowing you to fully customize your trigger poundage, as well as, the four-finger handle configuration that is more universal for most size hands. In addition, the Dead

Jaw cocks and closes in one smooth quiet motion allowing a very fast and easy loading on a D-loop." For pricing information, reach the manufacturer at (208) 624-3467.

**Clean-Shot Archery** is making good use of tiny lasers with the new The Spot-On Laser Bowfish Assassin.



As with the laser equipped broadheads that preceded it, this point lights up at full draw. The point comes sighted in from the factory for line of sight out to 20 yards or 60 feet. Since the laser's beam bends in water the archer simply aims directly at the fish, eliminating the "hold under" factor that frustrates so many archers that take up bowfishing. The Assassin is made

of stainless steel with Spot-On Hollow Point tip and quick release barbs for easy fish removal. An optional Gator Point with blades and larger prong is also available. Reach the manufacturer at (800) 242-9023.

Synergy Outdoor Group, which includes Barnett Crossbows, is introducing a dealer-only **Cross** brand being managed by industry veteran B.J. Wolf. The Cross DOA is one of two models that should be on the market by May 1. It uses a shoot-through foot stirrup to pack a 16 inch power stroke in a compact crossbow producing speeds up to 385 feet per second. The CarbonLite technology produces a lighter front end and moves the center of gravity toward the shooter. The DOA promises a smooth 3.5 pound trigger pull thanks to a trigger system formed through the MIM process and incorporating an anti-dry fire feature.



"This bow is truly a top performer and a favorite for the hunter looking for the highest level of performance and cutting edge design," Wolf said. For now the brand is gathering dealer contacts via its website at [crossarchery.com](http://crossarchery.com)

**Dead Down Wind** has a good way to introduce customers to several of its scent control products at once, the new "It's Not Just Luck" Box Kit. This kit includes just about everything they need to get started on a no-scent hunt, including 12 ounce Laundry Detergent, 12 ounce Body & Hair Soap, 12 ounce Field Spray, two Pac-It Refills for the Field Spray, Bar Soap and a Checkmate Wind Checker. "All products are biodegradable and have no harsh chemicals or biocides," a Dead Down Wind spokesman explains. "These products are skin-safe unlike other scent-related products that contain chemicals." For more information about these products or a new odorless sunscreen, contact the Missouri firm at (816) 421-4397.



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**Evolved Harvest**, a leader in food plots and attractants for wild game is introducing the Throw & Gro Radish X-Treme. Evolved Harvest and the Bone Collector team are marketing Throw & Gro X-Treme to hunters who might be looking to establish a personal plot around their stand, or have a remote area that cannot be reached mechanically. In addition to radish, the mix includes clover, brassica and tetraploid ryegrass.

“This exciting NO-Till blend will give you the amazing results as the original Throw & Gro with the added bonus of forage radishes,” a company spokesman says. “Throw & Gro Radish X-Treme is a versatile food plot that is perfect for those hard to reach areas where hauling equipment to is difficult. Leave your machines behind and still grow a nutritious food plot that will attract and hold deer in your area.”

Get more information about all the seed plot products blended and distributed by the Louisiana-based brand by calling (225) 638-4094.

**Flextone** is best known for big game calls that produce lifelike sounds with the aid of soft sound chambers, but the brand’s turkey line is being expanded with a new box call. Box of Tricks is a handcrafted custom built box call with a base made from Mahogany and a lid made from the exotic Jatoba wood. The laser engraved lid and base adds to the look of quality expected from true custom built calls. Flextone says the solid Mahogany wood base not only provides super loud hen talk, it will never go out of tune, unlike box call bases that have glued side boards or are made

out of wood and plastic. Its double-sided design gives the hunter the options of either clear hen talk or raspy aggressive sounds from dominant older hens. While made of natural wood, the waterproof coating adds weather resistance. For more information on Flextone products call (877) 993-4868.

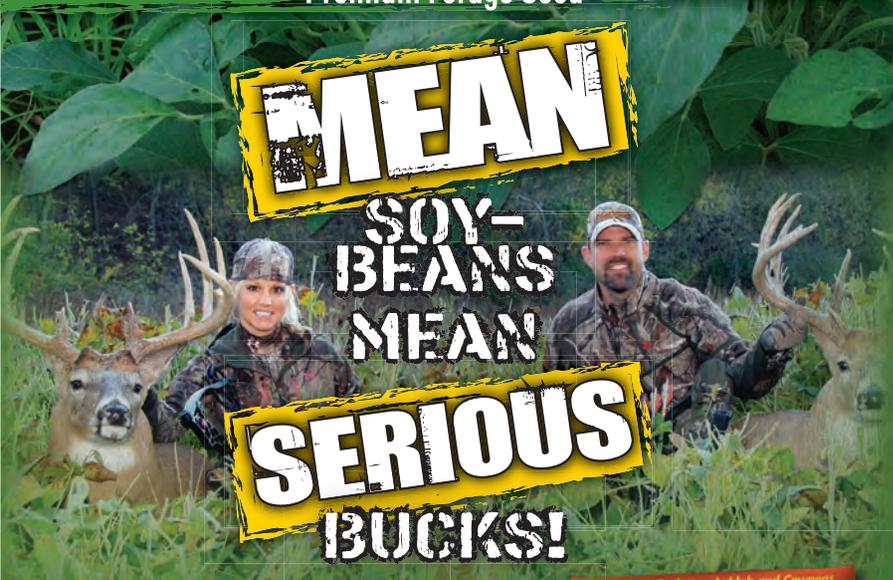


Pat Meitin is covering **Goat Tuff’s** improved Equalizer release (page 66) so we’ll focus here on the firm’s new bow carrier. President Jerry Smith had this to say, “The new GT Claw is a unique design that is belt worn and carries your bow conveniently at your side. The bow is rotated into the rubber coated hooks where it will stay securely in place leaving the archer’s hands free. With the Claw





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the user is free to climb, twist, bend and sit without worrying the bow will tip, shift or fall out. To retrieve the bow you simply rotate the bow and you are ready to shoot."

The GT Claw Bow Carrier is made of steel and finished with a tough powder coated finish. It is available in right and left hand from the Arizona firm by calling (520) 742-1701.

**HCO Outdoor Products** is distributing several new U-Way game cameras this year, so we'll focus on one of the models that offers "connectivity." The Vigilant Hunter VH GSM captures your choice of up to 8MP high quality photos or high definition video in the 1280 x 720 (Widescreen) format. The camera has the ability to transmit pictures via cellular network, and you can set it to text you or call you as new images are captured and change settings via your cellphone. The Dead Silent IR filter means there's an audible noise just twice a day, sunrise and sunset, as the filter changes position,

not at every triggering. That's one factor in the long battery life, an estimated six months or 10,000 images. With 40 high output infrared LEDs, night-time illumination reaches out to 50 feet or better. For more about this model and others, reach the distributor at (770) 582-0004.

**Parker** has a new Challenger crossbow aimed at youth.

The crossbow weighs just 5.5 pounds and its compact length makes it easy to cock the draw weight that can be set at either 125 or 150 pounds. The deep vented forearm has a safety

flange to keep fingers away from the string. The crossbow is designed to use the EZ Roller Rope Cocker to reduce the cocking effort. Made in the USA, the Challenger comes with a Red Dot or Multi-Reticle Scope and carries Parker's Lifetime Warranty. Call (800) 707-8149.

**Jim Fletcher Archery** is keeping up with the trend toward more colorful archery equipment with new pink versions of the popular Flathead release and its Trupeeps. "We've taken our popular FlatHead release and made it available in pink anodize," Susan Harris explained. "This fine shooting release is available with a nylon strap with Velcro closure or our popular leather strap with the buckle closure and is the perfect accessory to accent your equipment. Also our ever popular Super Hunter 3/16 inch sight and our Max Hunter 1/4 inch sight are now available with a pink anodize." For pricing information, reach the California firm at (760) 379-2589.

**Kustom King** is one of the distributors of the new Bearpaw Heavy Hunter arrows that are a joint effort of Gold Tip and the German-based Bearpaw Archery. The carbon arrows weigh 15.3 grains per inch (gpi) in the 320 spine, 13.5 gpi in the 400 spine and 13.1 gpi in the 500 spine. They come with a wood grain finish in 32 inch lengths, with a straightness tolerance of +/- .006 inch. These are the arrows being endorsed by Bryon Ferguson, well-known traditional archer. Reach Kustom King Archery at (877) 566-4269.

With so much attention given to premium price bows, we thought we'd help **Martin** promote one on the other end of the price spectrum. The Prowler Pro for 2012 carries a MSRP of \$399.99 and can be thought of as a big brother to the company's economical Exile. "The Prowler is built around a lightweight, agile frame with machined aluminum pivoting Roto limb cup system and an aluminum Martin STS," a company



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spokesman said. "With a more extreme limb angle, parallel limb design and longer riser, the Prowler is designed with the hunter in mind and is a pleasure to shoot."

The bow is designed to fit a wide selection of customers, with a Fury XT Cam that easily adjusts from 30.5 inch of draw to 24 in half inch increments and which allows a 70 pound bow to be taken all the way down to 35 pounds. The Washington bow builder offers this 3.3 pound Prowler Pro in peak weights of 50, 60 and 70 pounds. For more information about the 2012 line, reach

Martin Archery at (509) 529-2554.

At the other end of the price range in bows is the new **Mathews Heli-m**

shown lower left, carrying a suggested retail price of \$959. The light 3.5 pounds mass weight was attained with the help of an advanced GeoGrid riser, Harmonic Stabilizer Lite, and a lightweight Reverse Assist Roller Guard. Mathews says the bow packs two decades' worth of single-cam advancements into the all-new Heli-m Cam which produces speeds up to 332 feet per second with a generous 7 brace height.

Mathews offers the 30 inch axle-to-axle model in peak weights of 40 to 70 pounds, including a 65 pound version. Draw lengths are cam specific and range from 26 to 30 inches, at half-inch increments. Reach the Sparta, Wisconsin bow-builder at (608) 269-2728.

**Mrs Doe Pee Bucklure**, has a new product it calls Land Mine. This product is "set" by burying the mine below



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for 2012



**180** LB Draw Wt.

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**327** FPS / **101** FP KE  
with 425-grain Pro Elite Arrow

**296** FPS / **106** FP KE  
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Pairing our NEW lighter and longer Fusion Lite™ stock with a more rugged XLT bow assembly powered by double-laminated IsoTaper Limbs, the NEW Turbo handles like a dream but hits like a heavyweight.



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**180** LB Draw Wt.

**333** FPS / **92** FP KE  
with 370-grain Pro Lite Arrow

**315** FPS / **94** FP KE  
with 425-grain Pro Elite Arrow

**282** FPS / **96** FP KE  
with 545-grain Full Metal Jacket Arrow

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ground level, then pulling the wick from below the ground to permeate the seductive urine based scent in the air. Judi Collora said this product has been extensively tested the last two hunting seasons. "It can be used in conjunction with trail cameras, stand locations, or both. Start early and stay late! This product works great to draw bucks from August through January. It is sure to be the undoing of those wise old bucks who seem invincible!"

Reach the Iowa specialist in fresh lures at (319) 385-

3875.

If you still think bowhunters see in two colors only, camo and now black, you're behind the times. **Pine Ridge Archery** seems right in tune with them with the colorful accessories being made at the firm's Illinois plant. A good example is the Nitro Stabilizer 5.5 and 7.5 sizes. The stabilizer body comes in your choice of Black Tactical, Lost Camo and Next G1 Vista Camo finishes. But the package includes eight interchangeable Nitro Rings so the archer can coordinate his stabilizer to the color of the other accessories on his bow. Ring colors are Black, Red, Blue, Orange, Lime Green, Purple, Pink and

Yellow. In the photo below, we're showing the Lost Camo body trimmed with the red rings. These stabilizers are tipped with vibration killing flexible Shock Blades along the body. While the bodies are lightweight, the customer can add as many 1 ounce weights at the tip as he desires. For more information on the colorful accessories from Pine Ridge Archery, call (877) 746-7434.

**Scent-Lok** President Greg Sesselmann believes wearing odor absorbing headcovers are essential to maximize a hunter's success, and the Michigan firm has made that more likely with the introduction of the Convertible Headcover at the 2012 ATA and SHOT Shows

The headcover uses an inner hunting cap that can accommodate the snap on scent-control headcover, so you get the feel of a basic hunting cap with the scent control performance that Scent-Lok's new Carbon Alloy technology delivers. Scent-Lok improved the fit and feel of the face panel for better comfort and reduced bulk. The Convertible Headcover is available in lightweight for early season and midweight for those chilly rut days leading right into the late season.



"Scientists worldwide recognize that activated carbon has long been the best adsorbent for human odors," the Scent-Lok developer said. "The new Convertible Headcover features Scent-Lok's enhanced Carbon Alloy scent control technology that sets a new standard by adding other components to the activated carbon to improve the ability to adsorb odors to extreme levels. Carbon Alloy can increase the spectrum of adsorption by its ability to target human specific odors better than carbon alone, making hunters more effective in the field."

This year Scent-Lok's entire line is being powered by Carbon Alloy, and you can get more details by calling (800) 315-5799.



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**Specialty Archery** has a new line of Pro Stix carbon stabilizers ranging from 10 to 36 inches in length, but we'll focus here on something much smaller. The Iowa firm is a leader in the field of precision peeps and has just introduced their lightest machined aluminum peep ever. The Ultra Lite Peep at lower left weighs 7.5 grains, making it about 25 percent lighter than the Original Super Ball Peep housing. Like the original it's threaded to accept apertures down to 1/32 of an inch, so a customer can hunt, practice and compete in varied light levels without re-tying a peep and resetting a sight. These peeps also accept two series of tiny screw-in lenses: Clarifier lenses help sharpen target faces when viewed through magnifying scopes and Verifier lenses help sharpen sight pins that might appear fuzzy for older hunters. Specialty Archery makes it easy to sell these high-margin accessories, by offering dealer displays that help customers choose the proper size and power. Reach the manufacturer by calling (712) 580-5762.

Canadian-built **Spypoint** cameras include a new BF-7 model that's virtually undetectable to man or beast since the 46 high power LEDs don't put out light in the visible spectrum. It captures 7 megapixel images day and night, so both photos and high-resolution video can be produced without spooking game or alerting prowlers if the camera is being used for security purposes. It records 10, 30, 60 or 90 second videos with sound. Spypoint says the five zone sensor will give you a faster trigger speed and ensure you get more centered images. The removable internal camera makes this camera one of the easiest to use on the market, since the case stays on the tree while you're setting it up or retrieving images. The unit is powered

with 6 AA batteries and includes 12V/solar panel power jack, mounting strap, USB cable, and video cables. Find out more by calling the Vermont sales office at (888) 779-7646.

**Strother Archery** is doing long-draw archers a favor with the introduction of the Moxie. They won't have to change their form or install a long D-loop, because the Moxie reaches all the way out to 32-1/2 inches. At the same time the bow can be adjusted down to 28 inches, meaning it's a good choice for just about any hunter who likes its extremely stable 37-1/2 inch axle-to-axle length and generous 7-3/8 inch brace height. Naturally the same attributes, along with an IBO rating of up to 330 fps, will give this bow appeal to the serious competitive shooter and the bowhunter who wants to hunt and enjoy leagues or 3-D with the same model. The



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Michigan firm is building it in draw weights of 40 to 80 pounds, in three finishes: Black Death, Predator 3-D Deception or Realtree AP. Reach Strother Archery at (810) 648-6480.

After introducing a self-storing rope cocker last year, **TenPoint Crossbow Technologies** expanded the innovative accessory lineup this year with the introduction of the Bednar Perfect Puller. These universal multi-use pliers designed for pulling arrows were originally developed by the late Archery Hall of Fame member and TenPoint co-founder, Bill Bednar. Designed to pull arrows from high density targets, the pliers are packaged with three interchangeable grippers sized to fit different shaft diameters of both crossbow and compound arrows. The black grippers are made from Santoprene for superior grip strength and can be bonded to the pliers using adhesive patches included in the package. The hunter orange handles, made of 50 percent glass reinforced thermoplastic urethane for durability, are notched to create a built-in nock tool.

“With today’s high-powered crossbows and vertical bows, pulling arrows - especially carbon arrows - out of high density targets can be nearly impossible at times,” said TenPoint CEO Rick Bednar. “These arrow-pullers eliminate this aggravation, keep your arrows straight, prevent your hand from slipping, and require less hand grip strength to pull the arrow.”

Reach the Ohio manufacturer at (330) 628-9245.

The creative folks at **Trueflight Feathers** have developed a camo pattern variation of their popular Trueflight Barred patterns. The new Trueflight Camo pattern is a really irregular array of lines, patches and blotches - very much in keeping with the latest ideas in military camo. The pattern blends in very well with a wide variety of natural backgrounds. Like the original Trueflight Barred the new Camo patterns have a good print on both sides of the feather. Also like the original, the web of the feather is not “glued together” or damaged by an ink - the original feathers natural hook and loop action is unchanged, as is the very light weight of the feather.

Right now the camo patterns are special order items. However, some distributors are stocking these in some colors, and Trueflight will be happy to refer interested dealers to these businesses. For more information call (715) 543-8451.

**VaneTec** has introduced a new 2.88 Swift Vane designed to appeal to customers who may want to use the same vane for hunting and 3-D. At just under 3 inches, with a rigid blade, it should have the steering capabilities to guide any of today’s





popular broadheads. The height of .450 inch offers good rest clearance as well as minimal wind drift. Like other VaneTec vanes, it comes with a narrow base that has excellent adhesion properties. For information on the new vane and the company's new ArrowSmith Adhesion Kit call the Oregon firm at (866) 428-9067.

**Vapor Trail** calls the 2012 Limbdriver Pro-V the ultimate full-capture fall-away rest designed specifically with the bowhunter in mind. It features a free floating, fully adjustable spring-tension arm. The arm is designed to stay up for 70 percent of the shot cycle, which allows the arrow to achieve the necessary speed to stabilize flight. The full capture containment cage gives the bowhunter added assurance that once loaded, the arrow will always be held safely in place and will automatically self-center on the launcher arm once drawn. Reach Vapor Trail at (800) 310-8110.

The **Wicked Ridge Crossbows** shipped from the same Ohio plant as the premium TenPoint brand now includes the high-performance Raider CLS. The new bow features an economically executed variation of TenPoint's powerful Compact Limb System (CLS) bow assembly. Unlike TenPoint's one-piece CLS riser and foot stirrup, the Raider comes with a detachable, lightweight, coated aluminum foot stirrup. Its 12 inch IsoTaper help create a smooth-handling, high-performance crossbow that shoots 330 fps with 101.6 foot-pounds of kinetic energy. The injection-molded composite semi-skeletal Vertron stock helps keep weight at a trim 7 pounds. The MSRP on this new model is \$799 and like all TenPoint crossbows, all Wicked Ridge crossbows are made in the USA. Call (320) 628-9245 for more information. ←



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## '13 Trade Show Floor Taking Shape

Exhibitors planning to attend the 2013 ATA Trade Show in Louisville, Kentucky will begin selecting booth space on April 24 when ATA Trade Show Manager Maria Lewis will make booth-selection phone calls, by appointment, to ATA member manufacturers.

The 2013 Show will be held January 7-9 at the Kentucky Exposition Center. Be advised, Louisville has three convention-center venues. The Kentucky Exposition Center is located at 937 Phillips Lane in Louisville. Its website is [www.kyexpo.org](http://www.kyexpo.org).

New exhibitors will be able to select their booth site and size after exhibitors with preference points finish their selections. Lewis encourages new exhibitors to contact her for more information and to be added to the ATA's mailing list. She can be reached at (866) 266-2776, extension 2 or by email at [marialewis@archerytrade.org](mailto:marialewis@archerytrade.org).

"We do our best to keep new exhibitors informed on the dates and timeline for our booth-selection process," Lewis said. "Once they're on our list, they won't be forgotten."

The 2012 exhibitors rented a show-record 180,836 square feet of booth space, up nearly 8 percent from the previous record 167,550 in 2011 and a 17 percent increase from the 154,320 rented in January 2010 at Columbus. Exhibitors also reserved all seventy-three of the show's shooting lanes, which covered 20,100 square feet. That was the highest number of shooting lanes ever seen at the show. In addition to the 513 exhibitors on the show floor, 57 manufacturers occupied all available space in the Innovation Zone.

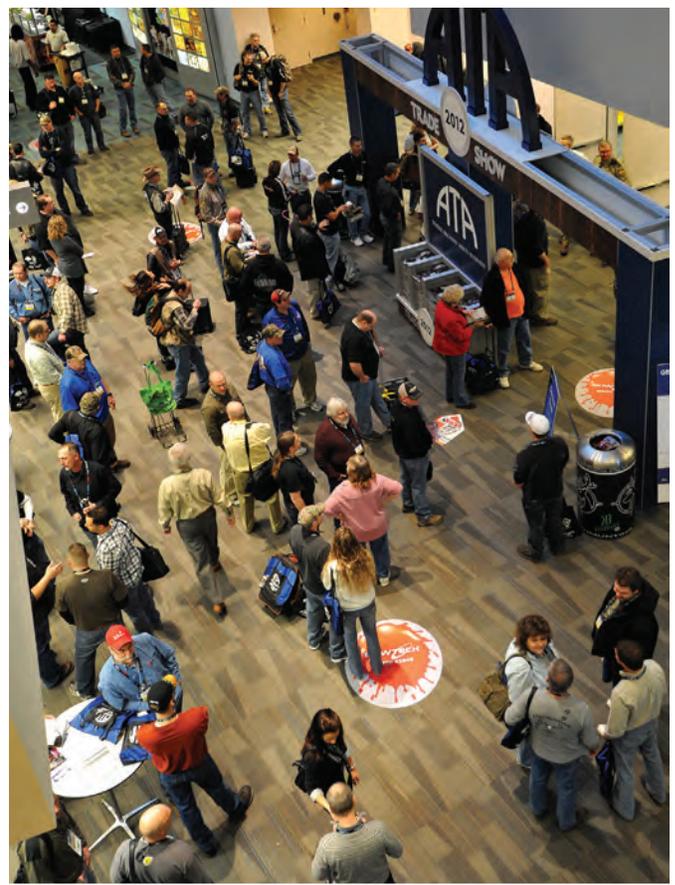
### A Mobile Movement?

The top 5 browsers used to access [archerytrade.org](http://archerytrade.org) during the 2012 Show were as follows: 1) Internet Explorer 2) Safari 3) Firefox 4) Android 5) Google Chrome. Meanwhile,

28 percent of [archerytrade.org](http://archerytrade.org) users visited our site using a smartphone or iPad during the week of the show. For comparison, only 11 percent accessed our site using mobile devices during the show in 2011.

**TOP 5 Most Read Trade Show News Posts on [archerytrade.org](http://archerytrade.org) (during show week)**

*Big Ben Stops In BowTech Pumps Suspense*



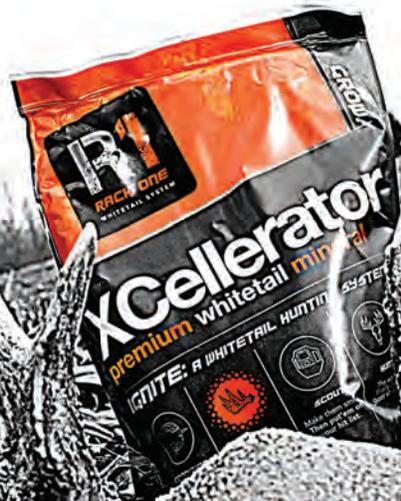
*The ATA Trade Show Welcomes Ted Nugent  
The Power of Photography  
Cianciarulo Family Wins Muzzy's Tall Man Award*

**Top 5 Most Clicked Links from @ATATradeShow Twitter feed and Facebook page**  
*BowTech Pumps Suspense  
The ATA Trade Show Welcomes Ted Nugent  
Big Ben Stops In  
Cianciarulo Family Wins Muzzy's Tall Man Award  
ATA Show Off To a Strong Start*

### What Outside Web Site Sent Traffic Our Way?

During the week of the show, the number one referral site was [facebook.com](http://facebook.com). The bulk of these referrals likely came from the ATA Trade Show Facebook page, but outlying referrals could have been sent from "fans" of the ATA page who shared or reposted ATA links first posted on the ATA's Facebook page. Interestingly, the number five top referral site was [bigben7.com](http://bigben7.com). Ben Roethlisberger's site reposted the ATA's short news blurb about his Trade Show visit, which was first posted on [archerytrade.org](http://archerytrade.org).





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## Tree Spider Makes Safety Easier

When it comes to talking safety most people would rather watch paint dry but safety is not only important it is a great add-on sale opportunity as well. More and more people are becoming safety conscious which is opening up more opportunities for the dealer. There was a time early in my bowhunting career when safety was the last thing on my mind. However that attitude along with my youth is long gone. Today I would never consider climbing a tree or hunting from an elevated stand without the proper safety gear. The risk is simply too great and the safe solution is too simple and really inexpensive when you consider the alternative.

This month Kasun's Korner is taking a look at some very attractive and well designed safety gear from Robinson Outdoors, the makers of ScentBlocker hunting apparel. Its Tree Spider Speed Harness and Tree Spider Speed Vest were specifically engineered to provide the maximum level of safety in a sleek, ultra-lightweight,

eye appealing design. These units are fully adjustable and quick and easy to put on even in the dark.

The figure eight design keeps the units naturally tangle free making them extremely user-friendly. The Ario mesh back provides a perfect fit while allowing for adequate air flow between the harness and the wearer's body in the back area eliminating a hot spot and resulting in all season comfort. Simple single-pull shoulder adjustment straps adjust the leg straps at the same time for speed and convenience. Each leg strap is also individually adjustable to allow for a custom fit. The leg straps have extra padding in critical areas of the inner thigh for maximum comfort. Buckles are made of CNC machined aluminum for minimum weight and maximum strength. The Bungee Tether is designed for freedom of movement while providing a reduced impact as the tether reaches its maximum length in the event of a fall. For a safe ascent and descent from a stand vertical climbing loops are built into the Tree Spider Harnesses to allow for use of a Vertical Climbing Belt which is available from Robinson as an accessory. A chest buckle holds the shoulder straps in place for added comfort and to ensure a proper fit.

**Robinson's Livewire Descent System is designed to automatically lower the user to the ground in a controlled descent in the event they slip off the treestand.**



While both Robinson's Tree Spider Speed Harness and the Tree Spider Speed Vest have all the same features the Speed Vest was designed for those hunters who desire additional utility. The Speed Vest has two side zippered pockets for storage of frequently used items positioned at the front of the vest where they can be easily accessed from either a sitting or standing position.

New for 2012 Robinson has added the Tree Spider Micro Harness to its line of safety gear aimed at those to whom weight is the major consideration. The Micro Harness weighs in at a mere 1.7 pounds but in spite of its ultra light weight it still offers all the safety features and quick adjustments of the Speed Harness and Speed Vest.

All the Safety Harnesses in Robinson's Tree Spider series come in S/M, L/XL and 2X/3X sizes. They are rated from 115 to 300 pounds. While the Speed Harness and Micro Harness come only in black the Speed Vest is available in Realtree AP and Mossy Oak Break-Up Infinity. The bungee tether found on all the harnesses is supplied in three different lengths depending upon the harness size selected and is specifically designed to significantly



**The Tree Spider Speed Harness design prevents strap tangles and is quick to slip into. At right is the new Micro Harness.**

reduce shock and impact in the event of a fall.

With more safety awareness among both rifle and bow treestand hunters there is increased awareness and interest in systems that can safely lower a user to the ground in the event of a fall. To meet that demand Robinson developed the Tree Spider Livewire Descent System. The Livewire Descent System is self contained within a compact bag approximately 7 inches by 5 inches by 1.5 inches thick. The system is connected to the Tree Strap which is fastened to the tree and the tether on the safety harness. In the event of a fall the system automatically and hands free lowers the user to the ground in a controlled safe descent even if the hunter is unconscious. The system comes in two sizes; the Live20 with a weight rating of 115 to 200 pounds and the Live30 rated for 200 to 300 pounds. The Livewire is designed for a maximum height of 25 feet and is for emergency use only. Once deployed or activated the Livewire is not reusable.

As an accessory Robinson also offers the Tree Spider Vertical Climbing Belt which works as a lineman's belt and can be used with any of Robinson's safety harness systems. Climbing belts provide added protection for the wearer when ascending or descending a tree and make installing hang-on stands much safer and easier by supporting the wearer and thus leaving both hands free.

While the Tree Spider Speed Harness, Speed Vest and Micro Harness are all easy to put on either over or under clothing Robinson went one step further when using the harness



**Robinson's Tree Spider Speed Vest has convenient front mounted pockets.**

system in conjunction with Robinson hunting apparel. Specific Robinson ScentBlocker garments have built-in Spider Speed Clips which match Spider Clips installed on the harness system. This allows the wearer to clip the vest inside their favorite ScentBlocker jacket making putting on the harness system as simple as slipping on your jacket and closing three clips. This is sure to be a hit with hunters who like to keep things as simple as possible.

Wanting to provide the hunter maximum versatility Robinson went one step further by developing the Tree Spider, Spider Monkey backpack. The Spider Monkey is a backpack that can be worn as a conventional backpack but can also be clipped to any Tree Spider Safety Harness utilizing the quick clips installed on both the backpack and the harness. The Spider Monkey pack is quiet, water repellent and features multi compartments and a hydration bladder. It bristles with pockets, pouches and has molle strips for added tie-downs. An innovative fold down back panel secures either a gun or bow when required, freeing up the wearer's hands.

Robinson has in design a Safety Harness system for smaller and lighter weight users as well as a model designed for the female form. No date has yet been set for the availability of these items.



**The Spider Monkey pack can be used as a conventional backpack or attached directly to Robinson's safety harness.**

## SUMMARY

With people becoming more aware of Treestand Manufacturers Association (TMA) safety standards and with a full body safety harness being included with every treestand the need for safety is being accepted by more and more hunters. After using a conventional harness that often tangles and is difficult to put on and adjust customers are more than willing to purchase high quality harness systems that are easier to use. This opens up a great add-on sales opportunity for the dealer. In addition to being excellent units Robinson's safety harnesses are also eye catching making them a great item to add to your treestand display area.

Few people come in and actually ask for safety equipment but having it in stock, displaying it properly and making your customers aware of its importance will build a market. Pro shops pride themselves on their knowledge and service to the customer. There can be no greater service than educating your customer on how to hunt safely.



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# Scientific Target Test

Morrell Targets produces a wide selection of products. For those looking for targets with unique faces for various shooting purposes this company should have what you need. The more popular line, at least as I've discovered, is the Bone Collector series. The Bone Collector brand continues to create much recognition amongst archers nowadays. In fact, I can vividly remember one of Morrell's targets being advertised with the Bone Collector team on TV. When it comes to celebrity and non-celebrity archers they want a quality product. Morrell's end game is simple - quality and usability. For the archer, this is a straightforward and understandable approach and we can all benefit from a company that wants consumers to have the best.

Many archers are looking for products of a somewhat average size. I have a tendency to skip the size aspect and jump right into stopping power. Face it, a target that can't stop your latest rig isn't going to be hanging around long. To contend with the mentioned prerequisite Morrell has designed a Nucleus Center. The center is created to withstand numerous shots at the same location. The end result, as stated on the company's website, is maximum life and durability. Morrell provided the Double Duty 400FP Target to go through this rigorous test. The target is

unique because of the various faces. Rated in the features section of the *ArrowTrade* Scorecard you see a rating of exceptional. The faces consist of six bull's eyes, a 9-ball game, a dartboard and a deer's mid-section. On a separate note, this target includes a two year guarantee. People want guarantees and good service. Morrell is working hard to offer both.



## Penetration Test

Parameter (Shot)	Front of Target
1	6
2	10
3	10
4	4
5	5
6	5
7	4
8	10
9	4
10	5
11	12
12	7
13	6
14	6
15	7
<b>Average Shots*</b>	<b>7</b>

\* The average calculation does not consider the highest and lowest measurements

### The Test

Generally I see very few target tests, which has made developing test parameters a little difficult. With that said, these uncharted territories sparked my interest and I am hopeful these types of tests will help all of us gain a better understanding of targets and the product that is spotlighted in this article. The test methods used and presented in this article are similar in nature to other tests I have done. Moreover, I have considered more recent philosophies on testing archery products as it relates to industry standards.

The test equipment used is as follows: an automated drawing/shooting machine, compound bow (set up at 60 pounds, 29 inches), carbon arrow, AMS fiberglass arrow (with chisel tip point, without outsert), load cell, hydraulic lift and high tensile rope.

The compound bow and arrow combination are measured

Bow Setup and Distance from Target - Penetration Test	Weight (lbs)	Draw Length (inches)	Arrow Weight (grains)	Velocity (fps)*	Kinetic Energy (lb-ft)	Momentum	Distance to Target (ft)
Compound Bow	60	29	360	290	67.24	14.88	10

\* The rating velocity is measured per ATA/BOW-104-2008

# Morrell Double Duty 400FP

for velocity during the test and included in this article. In addition, the target's distance from the bow is standardized. The distance from the target is measured by taking the vertical projection of the bow's pivot point, to the approximate path of the arrow, and measuring 10 feet (+/- 1 inch) to the front of the target.

The testing is split into three parts, namely: Penetration Test, Arrow Removal Test and Durability Test.

## Penetration Test (Hole in Hole)

The purpose of this test is to evaluate the design integrity and "stopping" characteristics of the Double Duty 400FP. As mentioned, the target is 10 feet away from the compound bow. The fast speeds of the arrow and close distance to the target is an extreme scenario as compared to normal shooting, but this was done with a purpose. The target is close to the bow to assure that the arrow is shot in the same hole as previously. Otherwise, a small change in point of impact will invalidate the results.

The arrow is measured utilizing ATA Guidelines (ATA/ARR-201-2008). The actual arrow length used in this portion of the test is 29 inches. The arrow is marked 18.625 inches from the leading end of the

arrow shaft, which is approximately 64 percent of the total arrow length. The distance from the front of the shaft is not derived arbitrary. The remaining 10 or so inches of arrow gives an archer enough room to grip the arrow without making contact with the fletching as the arrow is pulled from the target.

The Double Duty 400FP is mounted to a hydraulic lift table. The table allows the target to be raised and lowered and moved left or right if needed; this permits the bow to remain in a single position. The bow is mounted to a rigid, sophisticated automated shooting machine. The bow is shot multiple times with an identical arrow at the same location

## ArrowTrade Scorecard

Evaluation Criteria	Score
Craftsmanship	
Design Integrity	
Ease of Pull	
Features	
Performance	

Note: The ratings are based on the following color codes:

Blue = exceptional,  
Green = above average,  
Light Green = average,  
Yellow = marginal,  
Red = unacceptable

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**SOUND RECORDING**

**LIVE**

**BF-7**

Bow Setup and Distance from Target - Arrow Removal	Compound Bow	Weight (lbs)	Draw Length (inches)	Arrow Weight (grains)	Velocity (fps) *	Kinetic Energy (lb-ft)	Momentum	Distance to Target (ft)
	Compound Bow	60	29	1142	170	73.30	27.68	10

\* The rating velocity is measured per ATA/BOW-104-2008

Arrow Removal Test	
Average (lbs) *	5.4

\* The average calculation does not consider the highest and lowest measurements

until the arrow reaches 18.625 or greater. In some cases, the arrow will exceed the 18.625 inch threshold, which is tallied only if the previous shot did not reach the threshold mark. The test is repeated several times and the results are recorded. The average measurement represents the amount of shots it takes to meet or exceed the threshold marking.

The results illustrate the targets ability to "endure" heavy hits from an arrow at close range. On average, it takes seven shots placed in the same location to reach 18.625 inches or greater of penetration based on the bow and arrow setup mentioned in this portion of the test.

### Arrow Removal Test (Pull Test)

Many of us have probably wondered how much force it takes to remove an arrow from a target. That seems like a difficult thing to quantify when dealing with many variables. So after much thinking, I developed a test that allows me to measure the amount of force it takes to remove an arrow with some of the mentioned equipment.

An AMS fiberglass arrow is modified by removing the outsert and incorporating a chisel tip only onto the shaft. The modification of the arrow creates a similar profile as compared to a typical hunting/target arrow. The fiberglass

arrow is used because it has a stopping device and an AMS Safety Slide, which allows me to retract the arrow from the target. The fiberglass arrow is significantly heavier than most hunting arrows. But do not be put off because of this difference. The typical penetration of the fiberglass arrow into the Double Duty 400FP is approximately the same as the other hunting arrow used in this test. Any variation in penetration is mostly attributable to the differences in momentum. In addition, the friction coefficients of dry/clean fiberglass and carbon surfaces are very similar; therefore, it is difficult to say those differences create any disparity.

As mentioned, the target is mounted to a heavy duty hydraulic lift table. The bow fires an arrow at the target, and a machine retracts the arrow with use of weight measuring equipment. The bow is shot at various locations on the target, but never in the same hole as previously shot. The force measurements are recorded and averaged.

The results confirm that it takes on average 5.4 pounds of peak force to remove an arrow from the Double Duty 400FP. The test represents data from 15 shots, and the results are based on the bow and arrow setup mentioned in this segment of the test.

### Durability Test

A compound bow is fired at approximately 10 feet away from the target. The bow is shot 25 times and is oriented so the arrow hits within a two inch circle. The target is photographed before and after the bow is shot. The test revealed no pass-throughs. The face was only slightly impacted by the intense shooting.



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## Pros/Cons

The Double Duty 400FP is designed for almost any arrow slinging product you can fire its way. The company boasts about its potential "stopping power" within the product name. In addition, the company focuses on its key technology, known as the Nucleus Center, to get the job done. With some of the latest crossbows available reaching the 400 fps mark, companies that produce targets have had to step up. The Double Duty 400FP is specifically designed for crossbows yet can support almost any compound bow in the marketplace. I can personally attest to the fact that this target withstood several close shots with one of my personal crossbows, which reaches 350 fps. On the downside of this target, if you fire the arrow into the same location it has a lower number of "hole in hole" shots as compared to some previous products tested.

As indicated in the scorecard the features category was rated exceptional. Most archers will be interested in this target specifically because of the unique target faces for shooting. I personally like the variety this target offers. As mentioned earlier, the target faces range from the typical deer midsection to a dartboard. For those that like to change it up during shooting session this target will be an easy selection. Please note that this target is designed for field point use only.

The best feature and foremost selling point of the Double Duty 400FP is the ease of pull. The results of this test prove that it requires less peak force to remove the arrow than most targets in the marketplace. This is an easy selling point and something I would mention to a consumer right off the bat.

There were only a couple negatives I noticed with the product. The target is slightly larger in width than some targets making it more difficult to move into tight spaces for transport. The company includes two carrying handles to accommodate this last feature as it pertains to moving the target. The other point, the target is stated as waterproof. I have no doubt that it can withstand

some rain or ground wetness. However, over time I can see the target getting saturated and deteriorating. I believe you could prolong target life by setting it on a platform and covering it with a simple tarp when not in use.

## Overall

The product has some great features and the ease of pull is exceptional. The target density and stopping characteristics were acceptable, and withstood some difficult shots. I believe the company is on its way to accommodating the needs of various types of archers with their wide selection of products. The Double Duty 400FP should meet most, if not all, archer's needs for a field target and shouldn't be overlooked.



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## New for Traditional Archers

The Traditional Archery Expo is hosted each year in Kalamazoo, Michigan by Great Northern Longbow Company and Great Northern Quivers. It's a showcase of what's new in traditional archery and the best event in the country to get a feel for the pulse of traditional archery. Everything from the latest developments in high-tech bows and arrows to primitive bows and arrows and everything in-between is showcased. After interviewing several of the exhibitors there I'm pleased to report that there are quite a few bows, arrows, and broadheads, among other things, that are new and exciting for 2012.

### Sky-King Bows

This year Kustom King Archery celebrates their 40th year serving the traditional archery industry. To commemorate this landmark, they're introducing an all wood ILF line of risers and limbs called the "Sky-King" series.

This special series has been in the works for about a year and a half and is a joint venture between Sky Archery and Kustom King Archery. Both companies favor the advantages the ILF system provides with impressive adjustability and complete interchangeability with other ILF components. If you're new to ILF (International Limb Fitting) it's a no-tools-needed take-down system of risers and limbs that are interchangeable so the archer can shoot a riser from one company and limbs from another. It makes it easy for the end user to try different combinations until they find a combination that suits their personal needs.

First in the series is a compact 13 inch riser, the Sky-King "Monarch". It's a striking combination of stabilized Futurewood in charcoal and Futurewood in Cocobolo, with

attractive accent strips. The limbs will be high performance foam core carbon in longbow and recurve configurations. The new Sky-King Monarch should be available sometime this summer. This bow is entirely made in the U.S.A. and is sure to be popular with any bowhunter who is interested in the warmth and beauty of wood, in a completely adjustable package that can be fine tuned to their needs.

### Heavy Hunter Arrows

There is a new carbon arrow in the market with a wood grain finish that has great promise. It's a joint venture between Germany's Bearpaw Products and the U.S. company Gold Tip Arrows. The arrows, called the "Heavy Hunter", are manufactured by Gold Tip for BearPaw Products and distributed exclusively by Kustom King Archery and TradTech-Lancaster Archery.

Bowhunters have discovered for themselves when they use heavier arrows they get better penetration and the Heavy Hunter carbon arrows hit like a freight train. Not only are they heavy, they're tough. You can find a



*The Sky-King "Monarch" ILF riser with its warm wood in striking colors is a fitting tribute to Kustom King's 40th anniversary.*



*The new Gold Tip Heavy Hunter from Kustom King and TradTech-Lancaster Archery is popular with bowhunters looking for better penetration through increased momentum.*

video online where they were shot into a concrete slab with no damage to the arrow.

Heavy Hunter carbon arrows target the traditional bowhunter and as far as everyone involved is concerned, they've developed the best all-around bowhunting arrow ever! World famous traditional shooter Byron Ferguson was so impressed he endorsed them as his own signature line.

They're 32 inches long and available in spines of 320 (15.3 grains per inch), 400 (13.5 grains per inch), and 500 (13.1 grains per inch).

### Trad-Tech's New Risers

Not only is TradTech-Lancaster Archery involved with the Heavy Hunter arrows mentioned above, they are adding three new risers to their ILF lineup this year. First is the Apex 17 inch wood riser, made for them by Samick Archery. It has already become their most popular ILF wood riser. The all Dymondwood and phenolic construction is very strong, yet retains the warmth of wood, appealing to compound shooters transitioning to traditional as well as long time traditional shooters. Like all ILF systems, you get amazing adjustability and universal component interchangeability. If you're looking for limbs that complement this riser the folks at TradTech suggest taking a look at their Black Max limbs.



***Titan and Apex ILF risers from TradTech-Lancaster Archery are expanding the possibilities for traditional and compound shooters alike.***

Next come two new Titan II risers, one in 17 inch with two broadhead cutouts for easy identification and a 19 inch model with three broadhead cutouts. They expect the 19 inch riser to be very popular with 3-D shooters as well as bowhunters, where the 17 inch is projected to be popular with bowhunters looking for a more compact bow.

These new risers were designed and made in the U.S.A. by Olympic recurve experts. They're ILF through and through so all ILF limbs will fit, they have enclosed limb pockets for added structural strength and they're CNC machined from 6061 T6 aircraft aluminum. These risers are totally adjustable and they offer special advanced features: MAS (mass adjustment system), PWS (pocket weight system), and MSR (Modular shelf radius for true center shot adjustment.) They all come standard with a medium custom walnut grip.

TradTech-Lancaster Archery has been a leader in promoting the ILF system worldwide. They believe that by utilizing a universal system that allows individual archers to use any brand riser and/or limbs they prefer, to build a bow that's just right for them, they're helping the end user get what they want, and creating unlimited opportunities for other manufacturers to get a piece of the pie as well. It's a true win-win situation for the entire industry. Rob Kaufhold has likened that idea to an old quote that says, "A rising tide lifts all boats." We think he's right.



***These "Extreme" risers from Fedora bows show the graceful lines and the signature thumb rest Mike Fedora is known for.***

### New Limbs by Fedora

Mike Fedora has been building bows for over 40 years. His wife Carol and son Jason are actively involved in the family business - Fedora Bows. Mike's skills as a bowyer are well known and through the years he has trained bow makers worldwide. This year Fedora Bows introduces a fairly radical new recurve limb and they've enhanced their "Xtreme" hybrid longbow series.

All of the risers I reviewed included Mike's famous thumb rest which adds an element of comfort and hand positioning to the bow that Mike just smiles about when asked. He says that to any archer or bowhunter accuracy is everything and for that reason he builds accuracy into every element of his bows. In the way he shapes his risers, grips, and the design of his limbs I can confirm that the bows are indeed built with an eye on accuracy. The 62 inch "Xtreme" hybrid longbow I shot was a 14 inch Bocate riser with limbs of Bocote under clear glass, Bamboo core, and black phenolic tips. It was exceptionally smooth, wonderfully graceful, and inherently accurate.

When I first laid eyes on the little 12 inch Coco Bolo/Ebony "Xtreme" riser - my eyes widened and without thinking I said, "Wow!" It proved challenging to capture the essence of that riser in a picture, but it is simply beautiful and it fit my hand like a glove. I did not have limbs for that riser, but it sure was a looker. When a grip fits you like that, it is much easier to have consistency in hand placement - accuracy



**The Fedora "Extreme" is now available with high performance longbow limbs or the new "Sickle" recurved limb.**

then just naturally follows.

Mike's son Jason designed the new "Sickle" recurved limbs. They attach to any of the "Xtreme" risers resulting in a short, compact recurve bow for better maneuverability in the brush, while treestand hunting, or even backpacking. The highly deflexed section of the limbs makes it one of the easiest recurve bows to string. Sickle limbs on a 12 inch riser make a 54 inch bow, on a 14 inch riser a 56 inch bow, and on a 16 inch riser a 58 inch bow.

Additional refinements to the line for this year include a nice satin hand rubbed finish that is even more waterproof than before. A change to one small contact point on the shelf and inside the sight window, just above the pivot point of the grip, gives the arrow minimum contact and less friction, while helping to increase speed and accuracy.

If you're looking for traditional bows of impeccable design and graceful beauty, take a look at Fedora Bows.

### 3Rivers

3Rivers Archery has added a new riser to their DAS line of take-down bows based on their proprietary DAS connection system. The new 15 inch

X-5 riser is manufactured from 6061-T6 aluminum alloy, cut 5/16 inches past center, includes an adjustable side plate, and the shelf is radiused to allow shooting off the shelf or the use of a plunger and elevated rest inserts to accept any accessory item you would like and accepts both DAS longbow limbs and DAS recurve limbs manufactured right here in the U.S.A. by Sky Archery. You get all the adjustability the DAS system is known for but in a more compact package. Available with a standard or a high grip in lengths of 56, 58, and 60 inch for recurve and 58, 60, and 62 inch for longbow.

Next up, the Tomahawk Legacy, which can trace its roots to well known



**The new DAS DX5 from 3Rivers offers fine tuning through adjustability in longbow or recurve limb choices.**



**The new Tomahawk Legacy three-piece takedown should appeal to the traveling longbow hunter.**

bowyer Dick Boss of Boss Bows. This three piece takedown combines the basic Boss takedown riser with the well known Tomahawk Longbow limb design. The Tomahawk Legacy components are interchangeable with each other.

The Legacy 16 inch risers are crafted from three pieces of stabilized

distinctive look. They have radiused shelves and they're cut approximately 1/8 inch past center with a black calf hair rest and plate installed. The limb attachment system is an Allen wrench limb bolt and single alignment pin for ease of setup.

Limbs are available in two styles; the "Boss" configuration of flat-grain Brazilian Cherry "Jutoba" and a Hard Rock Maple core or the "Woodland Hunter" configuration of flat-grain Woodland Camo Super Action Wood over a hard Rock Maple Core. Available in right or left hand in lengths of 62, 64, and 66 inches and weights of 40 to 70 pounds.

Also new from 3Rivers is a non-vented 125 grain three blade screw-in broadhead called the "Woodsman Blood-Groove." They've called it that because of the unique cut in each blade. This solid three blade will be 1-3/4 inches long and have a 1-1/8 inch cutting diameter. It's expected to be available sometime this spring. With the increased popularity of lighter three blade broadheads, they're looking forward to strong sales.

Last but not least from 3Rivers are their new "Classic Arrows". They're made from hand spined Port Orford cedar and weight matched to within +/- 10 grains. They sport a nice white crown dip, hand cresting, and they're fletched with three 5 inch traditional cut left wing feathers; a natural barred cock feather and two white hens. These attractive wood arrows are available in spines of: 40-45, 45-50, 50-55, 55-60, 60-65, and 65-70 pound.

### True North Paints

True North Arrows is much more than just arrows; they've introduced a few new innovations worthy of note. First is their Eco-Friendly water based paints, stains, and sealers. They're available



**With the popularity of lightweight three-blade broadheads, the new "Woodsman Bloodgroove" from 3Rivers is almost sure to be a hit.**



**The new "Classic" arrows from 3Rivers will appeal to the traditional shooter still interested in wood arrows.**

in colors for crown dipping and cresting as well as a clear coat for sealing the entire arrow. These are not hobby paints. They are high quality, long lasting, exterior grade, full coverage

industrial paints and sealers that produce professional results. Cleanup? All you need is soap and water.

What about painting on carbon and aluminum arrows? No problem - start

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What about painting on carbon and aluminum arrows? No problem – start with the True North Carbon Primer, a true eco-friendly water clean-up primer that when it dries is only removable with spirit based solvents.

The last innovation from True North is an easy to apply, silicone and beeswax based, rust inhibitor. The rust inhibitor comes in a handy pocket sized lip-balm sized container that makes the application process fast and easy. I haven't tried it, but they tell me it's amazing.

### Thundervalley Archery

Magnus Broadheads sold their entire line of carbon steel broadheads to Louisiana based Thundervalley Archery. Even though Thundervalley Archery specializes in what they have coined, "Classic Archery Products", they're seeing the most rapid growth in broadhead sales with compound and crossbow hunters. Thundervalley Archery has been in full production since about June of 2011. They've revamped the broadhead packaging, changed all screw-in broadheads from six packs to three packs, and built in much better margins for dealers and distributors.

Thundervalley is also introducing the "Thunder Blunt", a blunt/bleeder blade combination that is deadly on small game and even smaller predators and pests because of its dual action impact. First the bleeder initiates a cut and then the flat face follows delivering severe blunt force trauma. They're



*Thundervalley Archery - the new manufacturer of all the carbon broadheads Magnus Archery used to make introduces the "Thunder Blunt" a good choice for stump shooting, small game, and even predators.*



*Eco-friendly water based paints, stains, and sealers from True North Arrows are a glimpse into the future of customizing wood and carbon arrows. Here is a selection of the cresting paints.*

available now in 125 grain screw-in and glue-on models and later this year a 100 grain version is expected.

If your customers have been asking for Magnus Classic broadheads or the Deadly Snuffer three blade, then contact Thundervalley Archery and get your shelves stocked.

### Alaska Bowhunting Supply

Alaska Bowhunting Supply has revived an urban legend with their new Silver Flame XXL. This is the BIG BIG, double-extra-large brother of the original Silver Flame broadheads and it cuts a wide swath. At nearly 2 inches wide and 2 inches long, this 175 grain double bevel broadhead is a monster!

The story we got was that these big Silver Flame broadheads were tested in Africa with amazing results, so Alaska Bowhunting Supply decided to have them made for bowhunters in America. The reports from the field are incredible and, for some reason, they're especially popular for hog hunting.

Silver Flame XXL's are a full 1-7/8

Continued on page 52.



*For some bowhunters, bigger is better! The new Silver Flame XXL with almost 2 full inches of cutting width is very popular with deer and hog hunters.*

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x 1-15/16 inches with .052 inch thick main blades made from 440C stainless for its superior edge retention and strength, they come from the package shaving sharp and ready to hunt. If you're looking for a one-of-a-kind broadhead that's as big and bad as it gets, take a look at the Silver Flame XXL.

Also from Alaska Bowhunting Supply is a new magnum power shaft called the Momentum U-FOC 175. This full length tapered nano-carbon arrow is designed for the heaviest of bows and the largest of game. With a deflection of .175 this arrow can handle bows over 100 pounds. The taper builds in FOC (forward of center) while the extreme stiffness allows bowhunters to use heavy broadheads like the Ashby 315 grainer up front to maximize their FOC and increase penetration. The response has been tremendous.

If you have customers with really heavy bows, looking for an arrow that can take anything that moves on the planet, tell them they need to break out the big guns, tell them about the hard hitting Momentum U-FOC 175.

Last year Alaska Bowhunting Supply introduced the industry's first all-carbon longbow, the Qarbon Nano. This year, in answer to the requests of many of the serious bowhunters that have been hunting with the bow, the



**Made for bows of 80-100 pound plus, the new Momentum U-FOC 175 is a top choice for the biggest of game from the fastest bows.**

limb finish will be changing to a flat non-reflective black.

### Grizzly Broadheads

I think Bill Dunn, owner of Zipper bows, did the traditional bowhunting family a big favor by purchasing the Grizzly Broadhead Company. The problem for years has been that you couldn't get them. There were never enough to go around. Now that Dunn owns the company, his goal is to have them readily available at all times.

Grizzly broadheads were the star of the 1985 Natal Study that Dr. Ashby was a big part of. Grizzly broadheads outperformed all other broadheads in the study, but at that time, no one knew why. Since then, Dr. Ashby has conducted countless tests with Grizzly broadheads and they have proven themselves time and time again as one of the best carbon broadheads ever offered.

There have been some important changes to the Grizzly design. There has been a name change, the largest Grizzly broadhead used to be called the "El Grande" but that has been changed to "Kodiak" which makes

sense because in the world of grizzly bears, the largest bear is the Kodiak. The regular Grizzly measures 1-1/8 x 2-3/4 inches while the larger Kodiak is 1-1/4 x 3-1/8 inches.

For the first time ever Grizzly broadheads are available in both left and right bevel. Unlike the originals, these new Grizzly broadheads are manufactured from two full length layers of 1075 steel. They're spot welded and copper brazed then heat treated to 52 Rockwell for incredible strength and edge retention. After the tempering process they're precision ground with opposing 25 degree single bevels. From the tanto tip, which resist curling on heavy bone impacts to its long but narrow profile, Grizzly broadheads are designed for deep penetration.

With all of the new bows, arrows, and broadheads for 2012 it's going to be a great year for traditional archery sales. Don't miss out on the opportunity... We have found that dealers who stock traditional bows, especially the arrows and broadheads, report that they were surprised at the amount of interest their customers showed, and really surprised at how much they purchased. Give traditional a try in 2012.

### ABOUT THE AUTHOR

Todd Smith has been a traditional bowhunter for over 40 years. After learning the art of handcrafting wood arrows in Alaska from his mentor John Dodge, he built arrows professionally for several years. In 2008, after a 19 year stint with 3Rivers Archery, he made the decision to help other businesses grow and currently offers marketing services through his website ToddSmithCo.com

Todd Smith's Traditional Focus column in *ArrowTrade* is being sponsored in part by Alaska Bowhunting Supply.



**The Grizzly broadheads have been redesigned for better performance.**

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## Getting in Balance with Stabilizers

**I**t happens in the “blink” of an eye! In fact, it happens in half that time, the bowstring traverses its 20 inch power stroke toward the target in a mere .015 seconds. The arrow gets off the bowstring and is launched to the target so quick that the human eye cannot see it.

Although it takes only .015 of a second much is happening. While the arrow is propelled toward the target by the bowstring the limbs and cams are also moving. Unseen, the bow handle is going in the opposite direction from the arrow and compressing into the archer’s bow hand.

### LAW OF PHYSICS:

**FOR EVERY ACTION THERE IS AN EQUAL AND OPPOSITE REACTION.**

How the handle performs during this “blink” of time is one of the major determining factors in where the arrow lands and the consistency with which it does so. In other words, both accuracy and precision depend on the bow handle action - dynamic performance - during the brief time the limbs and bowstring are driving the arrow out of the bow and toward the target. Once the arrow separates from the bowstring neither the handle, bowstring, limbs or bow hand can have an effect on the arrow.

Once the arrow is in “free flight” the archer has no more effect on the landing of the arrow. Therefore, great care must be taken to properly and consistently optimize the conditions of the launch and ensure that the arrow impacts the desired target. Those conditions include the following:

*The aimed direction of the bow and arrow system.*

*The placement of the bow hand.*

*The consistency of the release technique.*

*The physical balance of the bow.  
The arrow’s dynamic spine and flight characteristics.*

Please notice that all of these are within the direct control of the archer. ALL OF THEM! Good form takes care of the first three while good bow tuning and arrow building take care of the last two. This article is about number four.

### THE PROBLEM: BOW SYSTEM DYNAMIC PERFORMANCE

What is or should be the bow handle action as it presses back into the bow hand during that critical .015 of a second? That’s the big question we have to deal with when we want to begin balancing the bow with stabilizers.

Here are some facts that we know and have to deal with regarding the compound bow systems we are currently shooting:

*The bow hand pressure point in the grip is below center.*



*The bow hand must be correctly placed and relaxed if you are going to take full advantage of any stabilizer system you place on your bow. The knuckles must be at a 45 degree angle to the bow and the fingers and thumb must be relaxed so as to equal zero tension. When correct and relaxed the thumb points to the target and the bow is free from any hand control or torque.*

*The nocking point on the bowstring is above center.*

*The top and bottom halves of the handle are unequal in weight.*

*Only a few handles are left-right weight equal, most are not.*

*The bow sight and arrow rest add weight to only one side of the handle.*

*The top and bottom cams are unequal in weight on most bows.*

Wow, while making this list I just realized how unbalanced the whole bow system is before we put any stabilizers on it. Maybe the rare shoot-through handles really do help a little by balancing the left and right sides, I’ll have to get one and give it a try. Regardless, when the sight is installed the bow is weighted to that side and balance has to be imposed on the system by using stabilizers.

**BOW HAND:** When the bow hand pressures into the grip section of the bow handle it is doing so below the vertical center. Most of today’s bows have the vertical center at or near the arrow shelf. This means that the hand is exerting a force on the lower half of the handle trying to rotate that handle about its center resulting in the top limb rotating toward the archer.

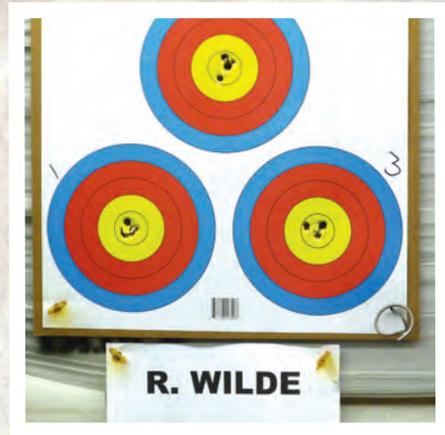
**NOCKING POINT:** The nocking point of most bows is above the vertical center of the bowstring. At full draw this force is also trying to rotate the bow handle about its center by pulling the top limb toward the archer. The ideal bow would have the grip at the center, the bow hand at the center, the nocking point at the center and the arrow also traveling through the center - a piercingly painful experience to the bow hand and, therefore, not practical. So we compromise in the bow design by moving those points a short distance away from the center.

**HANDLE DESIGN:** The top and bottom halves of any handle are unequal in mass (weight), some more than others. During the launch of the arrow this unequal mass plays a role in the attitude of the handle as it comes back into your bow hand.

**HANDLE WEIGHTING:** Most handles are weighted to one side. A few of the more expensive handles have shoot-through risers that do a better job of left-right weight balance. These risers are also less prone to three-dimensional flexing during the draw and power strokes.

**BOW SIGHT:** Any sighting device that is attached to one side of the bow handle adds weight to that side. The heavier the bow sight the more off-balance the bow handle becomes and the more counter weighting must be used to establish a left-right neutral balance. The arrow rest also adds weight to one side.

**CAM WEIGHT:** Most bows today have asymmetrical cam systems. In other words, the top and bottom cams (wheels) have different shapes and mass (weight). The exception to this is the "Binary" system employed by BowTech and a few other companies. The two-wheel bows of the 1970s and 1980s were also symmetric. These cams/wheels are thrust into motion when the bowstring is released giving them momentum and if these wheels are of different weights they will have different amounts of momentum.



*This target is from Reo Wilde's qualifying effort at the recent Lancaster Archery Classic tournament. He makes this happen regularly by using proper bow hand form, superior release technique, good bow tuning and optimum stabilizer balancing. He has the whole package working!*

Although this may be a relatively small matter it does enter the dynamic bow balancing equation.

These are some of the facts that we know regarding our bow-limbs-cams system. They are out of balance and when brought into relative balance the system can and usually does perform more consistently. The bottom line is this: An optimally balanced system shoots better arrow groups in the target.

My old friend, former Olympic coach and mentor, Bud Fowkes, always said, "Don't put anything on the bow unless it improves the arrow groups in the target!" As a dealer, do you consider this when you take a bow out of the box and start assembling it for a customer? Some people lose touch with Bud's Rule and go way overboard with accessories and stabilizers forgetting to determine if it all improves the groups. I follow Bud's rule all of the time!

If the bow's purpose is to accurately and consistently launch the arrow to the target-center then we would expect the bow handle to remain in its vertical attitude during the power stroke. That means that during the .015 of a second that the bowstring is propelling the arrow forward the handle should remain vertically oriented and move only horizontally a micro amount into the bow hand. In other words, the handle-top neither tips forward nor backward, doesn't tip left or right and the handle does not rotate (torque) on its vertical axis - it does shift back into the

bow hand a microscopic amount during the power stroke. Following that, the entire bow system thrusts toward the target during a "rebound" reaction. But the arrow is gone by this time and unaffected by such reaction.

## STABILIZER PURPOSE

The job of the stabilizer is to dampen or eliminate all handle movement other than the horizontal movement into the bow hand. The stabilizer(s) must dampen any handle tipping and any torque rotation so that the arrow can be aimed and launched accurately and consistently to the target. In other words, the wasted energy of the power stroke (about 25 percent of the stored energy) and unwanted bow hand torque must be dampened or dissipated by the stabilizers during both the aiming phase and power stroke. The law of physics at work here is: An object at rest tends to stay at rest unless acted on by a force.

A weight suspended at some distance resists movement more effectively than a weight attached directly to the bow handle - hence, the stabilizer extension rod.

## STABILIZER CONSTRUCTION

The shape and the materials of the stabilizer(s) are very important to how well they do their job. Weight suspended at a distance and how it resists movement is one of the important features of the design process. The material of the stabilizer rod also contributes greatly to the energy damping process.

In order to gain some insight into how a stabilizer is constructed I interviewed Todd Reich of Beaver Springs, Pennsylvania. Todd lives over just one mountain from me here in central Pennsylvania so we're neighbors. He builds and sells stabilizers under the business name of Dead Center Archery Products.

Todd has been involved as a major partner in a machine shop business, Top Notch CNC Machining, Beavertown, Pennsylvania, for many years. That,



*The bows at the 2012 Lancaster Classic demonstrate how many different stabilizers are in use today. There are at least 10 manufacturers and 30 different styles of rods represented but they all use the same principle: suspending weight at a distance to resist movement from a stationary position.*

coupled with his interest in archery, led to the development of a line of aluminum stabilizers a few years ago. Through the prompting of some of his friends he expanded his line to include carbon rod stabilizers. Now the carbon line is his major focus.

The carbon rods Todd uses are pultruded tubes. The diameter and wall thickness give it strength and rigidity. The high modulus carbon fibers that run linearly (lengthwise end to end) oscillate at a high frequency as they dissipate the vibrations that are

transferred to it from the bow system. The end-caps are machined aluminum as are the add-on weights and the quick disconnect adjustable arms.

Using the proper adhesives and preparation processes are critical to making a lasting product. Notice that the glossy surface of the carbon has to be scuffed by a sanding operation so the adhesive makes a good bond. The end-caps are outserts that cover the end of the carbon fibers rather than inserting inside the tube which could cause splitting.



**Todd Reich, owner and inventor of Dead Center Stabilizers is shown here assembling stabilizers while preparing an order for shipment. A key ingredient is the adhesive used to hold the end caps in place as well as the carbon rod preparation process. Order numbers indicate that he could add 50 percent or more to his 2011 volume by year's end.**

that Todd and I both recommend begins with the use of the "Pro Balancer" that Todd manufactures or a similar device. This device attaches to a work bench via screws or a "C" clamp and holds the bow at the grip section. The balancer allows the bow to rotate on two sets of pivots so that it can tilt freely in two planes; one pivot allows the long stabilizer to tip up and down in the vertical plane while the other pivot allows the handle-top to tilt left and right. It's simple and very effective, I wish I would have had one back in the 1980s!

At the start, the bow must be ready to shoot except for the stabilizers to be added. All of the accessories you intend to use must be installed and should include the bow sight, arrow rest, peep sight, nocking point and string dampeners.

**STEP 1: PLACE THE BOW IN THE BALANCER.** Attach the handle to the balancer at the grip section trying to duplicate your bow hand position as closely as possible. Keep in mind that no machine can duplicate exactly how the human

### TARGET STABILIZER SETUP

If we understand the purpose of the stabilizer system then we know that we must establish a starting point for attaching and balancing the stabilizers we use. This initial combination may not be the combination that gives the best arrow groups in the target so we will also need to establish a tuning process that will move us from the initial combination to the "optimum" combination.

The initial stabilizer combination



**Testing various pultruded rod diameters and wall thicknesses helped Dead Center Archery determine the optimum rod dimensions for bow stabilizing. The colored end caps, weights, quick disconnects and angled connectors are all machined at the Top Notch CNC Machining shop in Beavertown, Pennsylvania.**

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hand holds the bow and that this is a starting point of a process that ends with a fine tuning shooting test.

**STEP II: INSTALL THE LONG ROD**

Place the long stabilizer rod to the back (target side) of the bow with one small weight attached to the end. The length of the rod is a personal choice but keep in mind that the effectiveness of the stabilizer is directly related to the mathematical product of the mass weight at the rod's end and the rod length (mass X length). This product is a measure of how well the stabilizer weighted-end resists movement generated at the bow-end of the rod.

**STEP III: INSTALL A SHORT ROD**

TO THE SIDE OPPOSITE THE BOW SIGHT. To balance the left-right weight of the bow system you must install a short rod with an attached weight to counter-balance the weight of the bow sight. Once again the length of the rod multiplied by the end-weight is a measure of the stabilizer's effectiveness. The offset arm can also be adjusted so the stabilizer rotates further outboard from the bow handle - use this in the final balancing process while the bow is in the balancer.

**STEP IV: ESTABLISH A**

**BEGINNING BALANCE BETWEEN THE LONG ROD AND THE SHORT ROD.** Balancing the bow so the handle and bowstring are vertical at this point is not the objective. Remember, the

bow is not "working" when it is in the balancer unit and having an equal "static" (still or inactive) balance does not mean that the system will be optimally balanced when you have the bow at full draw and also when the bow is "working" during its power stroke. The "dynamic" balance must be found by shoot-testing for arrow groups; therefore, the starting point for the bow held in the balancer unit is arbitrary. In my own personal bows I find that the long-rod tips down when the bow is held in the balancer. Todd finds the same with the overwhelming majority of client bows he balances.

**LEFT-RIGHT BALANCE:** I recommend that you begin with the left-right balance set equal so the handle is in the vertical plane. The Pro Balancer unit can be locked to prevent the long rod tipping down while you add weight to the counterbalance rod and also rotate it further or nearer to the bow handle using the offset bar. On my own bow I had to increase the rod length from 8 inches to 12 inches, add 6 ounces of weight and increase the offset bar length from 3 to 4 inches. A small rotation change got the bow in perfect left-right balance.

**FRONT-BACK BALANCE:** Begin with the front-back

balance set so the long-rod tips down slightly. Once again it's all about the weight multiplied by its distance from the bow handle. In this static position my long rod tipped down at a 30 degree angle but when the bow is "working" during the power stroke the long rod tip stays level instead of instantly tipping up while the arrow is leaving the bow.

**STEP V: SHOOT TESTING FOR GROUPS**

Test the initial stabilizer setup by paper testing from 5 to 8 yards. There has been much written about this topic so I won't repeat it here. Check the July 2008 issue of *ArrowTrade* online to read more about Powder and Paper Tuning. (Find that back issue on-line at [arrowtrademag.com](http://arrowtrademag.com) if you don't still have your print copy.)

Choose some long distance from which to test the arrow groupings from your bow. I always prefer 60 yards, anything more than 40 is good.

Begin by recording your "ZERO" or starting combination of balance weights. Next, add a 1 or 2 ounce weight to either the target-side long-rod or



*The Dead Center Archery Pro Balancer is a great way to get started with bow balancing. The device holds any bow at the grip section and allows it to pivot freely in two planes separately or in both simultaneously. The owner/inventor Todd Reich and I both like setting the left-right balance before setting the long rod tip-down balance. Fine tuning from long range will help you optimize the long rod tip weight to get the best groups.*

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*I have to confess that I haven't shot my bow as much as I should have this past year. Nor did I work on my stabilizer package so my left-handed bow was severely out of balance when we first put it into the Balancer. Notice it is tipped far to the sight-side. To get it better balanced we increased the back-rod from 8 to 12 inches and added more weight. To bring it closer into balance we increased the offset bar from 3 to 4 inches and after a slight rotation inboard the bow balance was vertically perfect. Next we changed the tip weights on the long rod to get the desired tip-down position that will get me started with my long distance tuning (as soon as the weather warms a little). I can tell from only a few arrows that the bow aims extremely well at 20 yards already.*

### BALANCING HUNTING BOWS

My hunting bow is an entirely different animal from my target bow. My hunting bow is designed to do a ONE-SHOT job, at least that's the plan I always have! My hunting bow doesn't have to shoot multiple arrows at long distances either - one shot at 20 yards is the game.

My own hunting bow is very lopsided because of the two-piece bow quiver attached to the same side as the bow sight. It's still better balanced than the one-piece quivers I've used. I use a short 8 inch stabilizer on the target side with no counter balance on the side opposite the quiver. I'm satisfied with how it handles but I don't use a reflex handle like most hunters, mine is a straight-line handle, neither deflex or reflex. When I did use a reflex handle I had to install a counter balance to the quiver and sight.

My hunting bow has to "carry" well and "hold" comfortably while I'm in the treestand. I spend a lot of time with my bow in my hand while waiting for that elusive buck to show himself, particularly in heavy cover areas around my home.

It also has to shoot well on the first shot. I tune my hunting bow so it does that and if I need more weight on the rod-tip I put it on. Pin point accuracy isn't my interest but hitting a paper plate within 30 yards near the middle on the first shot with a broadhead is. I spend enough time adjusting my one stabilizer to make that happen.

I've added weights to the left side of my hunting bow to counter balance the sight and quiver but the whole system

weighed too much to carry comfortably so I go without a side weight and balance for a slightly tip-down effect and for carrying comfort.

### SURVEY OF STABILIZERS

Following are some of the many stabilizers I saw at the 2012 ATA Show. As you'll see, there are a wide variety of ways to implement this concept of bow balancing and energy damping.



VIPER ([viper.com](http://viper.com)): Viper Products is manufacturing a line of hunting stabilizers to compliment their line of bow sights as arranged above by my long time friend Diane Botjer. The Quad Rod utilizes four energy absorbing carbon rods and is available in both the 6 inch and 9 inch versions. The Viper Stabilizer comes in three versions: the short 4 inch, the 6 inch and the 9 inch.

STOKERIZED ([stokerized.com](http://stokerized.com)): Kyle Stoker of Annville, Pennsylvania, below shows off his latest assortment of



short stabilizers mounted on his position-adjustable side mount. He also has a selection of balance weights.

**VIBRACHECK** (pse-archery.com): The full line of Vibracheck products was on display at the PSE Archery booth. The newest addition is the Black Magic Series. These carbon stabilizers below are available in short and long versions and attach to the bow by the HD Coupler.

**ROBINHOOD** (robinhoodvideos.com): The new Lite Hawk thin-wall stabilizer is designed with a .042 inch wall-thickness to reduce the shaft weight.



Shown above, Owner and Designer Bernie Pellerite from Blacklick, Ohio prefers more weight to be placed at the end where it can do a better job of resisting the torque movement emanating from the bow handle. These

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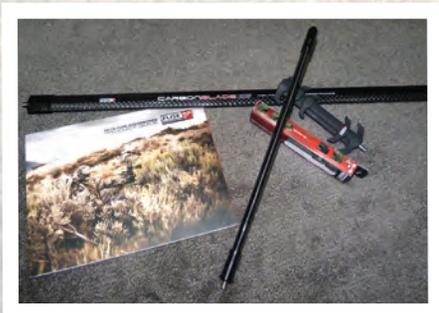
The advertisement background features a collage of mechanical parts, including gears, bolts, and a metal bracket. A deer head is also visible on the right side of the image.



stabilizers are available in 25, 30 and 35 inches weighing in at 3.1, 3.4 and 3.9 ounces respectively. Robinhood also has a V-bar attachment featuring Gator Grip adjustable angled connections.

**SHREWD ARCHERY** ([shrewdarchery.com](http://shrewdarchery.com)): Shrewd is a division of Damon Company of Salem, Virginia, represented by Sam Newson at the ATA Show. Their impressive large display shows off the wide variety of long stabilizer lengths in both black and silver carbon finishes. As you can see Shrewd also offers a full selection of short counter balance and hunting stabilizers. New are the external end-caps and internal dampeners that come as standard equipment. They also offer a full selection of external weights to custom adjust the balance of any bow.

**HOYT FUSE** ([hoyt.com](http://hoyt.com)): The Fuse stabilizer system by Hoyt (below) offers the very popular Carbon Blade system to not only allow bow stabilization but to reduce side-wind resistance. The cross-section shape is elliptical, that is it is wide horizontal and thin vertical to allow for steadier aiming in a cross wind.



**SPECIALTY ARCHERY PRODUCTS** ([specialtyarch.com](http://specialtyarch.com)): in the photo above right, Michael Anderson proudly displays the updated Pro Stix stabilizers produced by Specialty Archery of Spencer, Iowa. They also offer the Elite Stix and Ultra Lite series of carbon stabilizers in a wide variety of lengths with a full complement of add-on weights for custom balancing. The adjustable V-bar system allows for three-dimensional angle adjustment to suit the needs of every target archer and bow hunter.

**KTECH DESIGNS** ([ktechdesigns.com](http://ktechdesigns.com)): The ATA new products display area offered me a look at the innovative stabilizer line of Ktech out of Davison, Michigan. The designers at Ktech have installed weighted harmonic dampeners in various hunting length stabilizers and string dampeners. Several of these great looking and effective models allow for position adjustments for the weighted dampeners.



## CONCLUSION

Shooting archery is a fantastic way to measure yourself against yourself. To do it well requires that you prepare thoroughly and that means covering all the bases in personal form and in equipment preparation. All too often the balance of the bow is over-looked or misapplied so help your customers build the proper bow balance by adopting a systematic method like the one outlined in this article. Install a bow balancing device so you can find "exactly" the weights a given bow needs and where to locate them. Be a little more scientific and your customers will reap the rewards.

Keep well. Shoot straight!

Larry

**EDITOR'S NOTE:** Larry Wise is also available to conduct one and two day CoreArchery Academies on shooting form.

Larry has completed his new DVD titled Core Archery BackTension: Defined and Demonstrated. The DVD is available at [www.larrywise.com](http://www.larrywise.com) for \$19.95.

Check out past articles by Larry Wise at the twin web sites of *ArrowTrade*. High speed internet users can find more than three years of complete back issues at [arrowtrademag.com](http://arrowtrademag.com). If you're using a dial-up connection with slower speeds, you can still download all of Larry's coaching and tuning articles as pdf files at the alternate web site, [arrowtrademagazine.com](http://arrowtrademagazine.com). ←

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## MY BEST OF SHOW

Each year the archery industry gathers under one roof to show off new products, take orders from attending dealers, renew friendships, shake hands with bowhunting celebrities and generally enjoy quality face-to-face contact often missing from modern business transactions. The annual Archery Trade Association Show (ATA) is held each January, normally somewhere in the Midwest. This year Columbus, Ohio was the chosen site and the show was attended by nearly 8,000 people, average attendance for the long-running event. For those of us, like the editors and writers of *ArrowTrade* magazine, not anchored to a booth hawking wares and answering questions, the event is akin to the ultimate children's toy store, almost 450 booths filled with goodies that bowhunting and archery gear junkies the world over seek and cherish. It gives insiders a hands-on preview of new products that will fill shelves, and bowhunting packs, in the coming year.

Now, to be brutally honest, after 20-plus years attending such forays I might be considered a touch jaded in these matters. I've witnessed plenty of claims of the next big thing, products supposedly changing the sport forever, all promptly fading to obscurity. I'm ever suspicious of "revolutionary breakthroughs," the one in the crowd always ready with the question: "What's the catch?" So when *ArrowTrade* Editor/Publisher Tim Dehn asked me to report on 20 hot new products found at the 2012 ATA Show, I was convinced finding so many interesting subjects would prove challenging. I was pleasantly surprised. In fact, 2012 was the first time in years I've found myself excited by easily more than 20 exciting new products with several companies producing more than one. I'll touch on some of these before detailing my choice picks. This was truly a year of exciting innovation.



### Apex Gear Game Changer Sight

Apex Gear ([www.apex-gear.com](http://www.apex-gear.com); 877-701-APEX), spawned from the bright minds at TruGlo, promises to change the way you look at bow sights in 2012. The Game Changer's (MSRP \$120 to \$130) Interchangeable Fiber Design is nothing short of revolutionary. The system allows instant fiber replacement without tools through an ingenious brass-thread design that plugs into sockets and is gently screwed into place. This also allows customers to change fiber color without changing pins or their location via Tru-Flo 2.0 technology; cheap insurance against equipment failure during a rough-and-tumble bowhunt. These extra-long fibers are routed through the mounting bracket and a containing tube for increased durability and maximum light exposure, producing extra-bright aiming points. New Tru-Zero pin design minimizes pin gaps, Tru-Touch soft-feel technical coating absorbs vibrations and shot noise. All this is wrapped around a milled-aluminum design fitted with rugged stainless steel hardware, and including

ultra-fine micro windage and elevation adjustment accomplished without tools, adjustable 2nd and 3rd Axis, illuminated bubble level, reversible mounting bracket, 2-inch circular pin aperture with glow-in-the-dark peep-alignment ring, plus an adjustable, fully-contained micro push-button pin light. The sight comes with five .019-inch diameter pins, finished in black, Realtree APG and AP and Lost Camo. Green, Red and Yellow replacement fibers are also offered.

### AXT Titanium Xtreme Sight

Archer Xtreme ([www.ArcherXtreme.com](http://www.ArcherXtreme.com); 406-924-6113) caters to bowhunters who take their sport to extremes. This isn't budget-priced equipment, but customers receive space-age materials wrapped around smart engineering. Two new ATX products stand out for 2012; the Vapor Hyperlite Quiver, a two-piece version of last year's Carbon Vapor Quiver, both made nearly entirely of feathery, high-strength carbon fiber; and the Titanium Xtreme Sight. To my mind it's a tossup for best of show from AXT, but I'll delve into quivers in the May issue of *ArrowTrade*, so I will concentrate on the sight here.

The hard-driving, run-and-gun western bowhunting I do most means I'm absolutely brutal on equipment, sights in particular. Last year I ran an AXT Carbon Carnivore Sight through the paces with two weeks of dusk-to-dawn elk hunting in some of Idaho's roughest terrain, including daily 2,500 vertical-foot, bugle-driven scrambles and descents plus endless miles strapped to bouncing ATVs all without the smallest problem. Ultimately the sight helped me thread the needle through 45 yards of tangled brush to collect a gorgeous 6x6 bull.

That said, AXT President/CEO Mark Garcia promises the new,



super-lightweight Titanium Xtreme Sight (MSRP \$320) is tougher yet. All-new features include a 2 inch, vented titanium sight housing for better light-gathering capabilities with unsurpassed toughness, Titanium Bracket Ridge for nail-tough reliability, and a bright-red HV Fiber Guard Ring System for faster peep alignment. Solid features retained from last year's Carnivore include reliable Center Core Pin stainless steel tube pins, Fiber Harness Bracket System protecting extended fibers from harm but allowing maximum light transfer and super-bright aiming points, five .019-inch super-flex fibers in green, yellow and red, 2nd Axis gang adjustment and 3rd Axis adjustable level system, tool-less micro adjustments, right-/left-hand reversible bracket and bubble level, rear LED light socket to eliminate distracting glare, laser-etched elevation and windage marks, zero-gap pin capabilities and full lifetime warranty on all manufacturer defects. In all, this sight's tough enough for the most extreme elk or sheep hunter, bright enough for the woodland whitetail hunter and precise enough for demanding target shooters.

### **Bear Archery 64"**

#### **Grayling Green Super Kodiak**

In a world of high-tech compounds and accessories I'm still magnetically drawn to simple traditional bows. Until last year, for me that meant custom wares. That was until Bear Archery ([www.BearArcheryProducts.com](http://www.BearArcheryProducts.com); 800-694-9494) made a concerted effort to elevate these legendary designs to the high places they once occupied during the heyday of traditional archery. Many major changes occurred last year at Bear (see May 2011 issue of *ArrowTrade*) with a nearly complete overhaul of the entire traditional line. Some of the old classics from the 1960s and 1970s were resurrected (Super



Grizzly, Grayling Green Glass models), refinements were made to age-old standbys (Takedown, Super Kodiak), and the designers were striving to instill elements that once made Bear the biggest name in archery. Bear is still on the move, quickly winning the hearts of those who had lost faith in the name. Chief among the 2012 introductions is the gorgeous bubingariser Takedown and a 64 inch Grayling Green Super Kodiak. Of these the 64 inch Grayling Green Super Kodiak (MSRP \$620) most solidly grabs my attention. This might have something to do with my long draw length, but it's also a matter of pure aesthetics. The Grayling Green Super Kodiak is simply beautiful, harking back to 1967 when the model was first

introduced and used by Fred Bear on many of his most heralded bowhunting adventures. The classic Super Kodiak three-piece bubing-handle that disappeared for a couple of decades was reintroduced last year in a standard 60 inch length. The 64 inch model represents added forgiveness, smoothness, in short, greater shoot-ability and accuracy built around a real piece of the bow-maker's art that I feel is capable of shooting as well as any custom bow.

### **BowTech Insanity CPXL**

I knew choosing a single compound bow to represent true innovation in 2012 would prove a tough assignment. After reaching BowTech's ([www.bowtecharchery.com](http://www.bowtecharchery.com); 541-284-4711) booth I knew I'd found my winner. BowTech calls the Insanity CPX (and CPXL) the most advanced bow ever built, and it's difficult to argue with that. This is an impressive culmination of BowTech industry-changing innovations. These are bows that are virtually silent and vibration free, while rocketing arrows to advertised IBO speeds of 340 to 355 fps.

The features are numerous: Center Pivot Extreme (CPX) Technology, for greater forgiveness and torque control, equaling added accuracy. Upgraded OverDrive Binary Cam System



eliminates cam lean, making tuning easier and producing cleaner arrow flight. Hardcore past-parallel limbs boost efficiency for more speed without a harsh draw. FLX-Guard cable guard greatly reduces buss-cable torque for greater tuning ease and accuracy. Also included are ultra-strong forged riser, Octane factory zero-creep strings and cables, Carbon Rod String Stop for quieter shooting and cleaner arrow separation on release, split buss cable for fine-tuning, and slim two-piece wood grip for repeatable bow-hand interface. The standard finish is Mossy Oak's Treestand, but they can also be ordered in Mossy Oak Infinity, Gore Optifade Forest and Open Country, Realtree APG HD and BlackOps.

The CPX (MSRP \$999) includes 6 inch brace height, 32 inch axle to axle dimensions, 80 percent letoff and an advertised IBO speed of 355 fps. There's no doubt this is a great bow, but perhaps a bit too performance-driven for the average weekend-warrior. Of the two models I prefer the 4.4 pound CPXL (MSRP \$1,049), including a longer 35 inch axle to axle for added stability and a more forgiving 7 inch brace height likely better suited to the average shooter. It still produces blazing IBO speeds of 340 fps. This also makes a better option for archers with longer draw lengths up to 32 inches. In any case, the CPXL will be the compound I'm shooting in 2012.

### Easton Injexion

You can always count on Easton ([www.eastonarchery.com](http://www.eastonarchery.com); 801-539-1400) for something new and exciting in hunting arrows. Despite its continued domination of aluminum-arrow technology, these innovations come in the form of carbon (does anyone but Chuck Adams actually shoot aluminum arrows today?). For 2012 two arrows stand out, the hugely-hyped Injexion/Deep Six package and the new Bloodline. I think the Bloodline got overshadowed by the introduction

of the Injexion, but it deserves quick mention. The Bloodline packages the added penetration potential of a small-diameter shaft (HP Insert and H Nock compatible) into a lighter package (8.7 gpi in .330 deflection) that flattens trajectory, a combination many bowhunters are sure to appreciate.

Taking the Injexion at a glance - lower diameter with steel insert - without a thorough understanding of the bigger picture can prove underwhelming. Entering the ATA I wasn't exactly sure what the hoopla was all about. Now that I get it, I'm impressed. In a nut shell here it is: Injexion shafts allow Olympic-caliber accuracy once found only in micro-diameter target shafts like the X10 ProTour, but with heavyweight bowhunting mass combined with screw-in field point and broadhead capabilities. This is big. This offers a hard-hitting hunting arrow weighing from 8.3/8.6 (.450 deflection) to 10.1/10.5 gpi (.330 deflection; 8.9/9.5 gpi in .400), ultra-micro diameter (.236-inch) performance translating into greater downrange kinetic energy retention, superior crosswind-bucking abilities and deeper penetration on game.

Injexion uses a direct-fit G Nock, and special Deep Six Steel GHIT Inserts. Steel inserts boost front of center balance or FOC. (Easton calls it Focused Energy), another plus for accuracy and energy transfer. I also suspect this was required for reliability, the insert being too thin-walled to allow the use of aluminum, but this is only an educated guess. Injexion arrows require special Deep Six broadheads (and field tips) - broadheads available from New Archery Products (\$40 per three) and Muzzy (\$40 per three) - owning "boat-tail" ferrules tapered at the rear to match Injexion OD and create a streamlined interface. A wider departure from standard broadhead design is NAP's Big Nasty. It includes a photon bonded cut-on-contact design, the rear collar encircling the shaft, screw-in

stud located inside the laser-welded blade assembly. I also like the looks of that one, shown here.

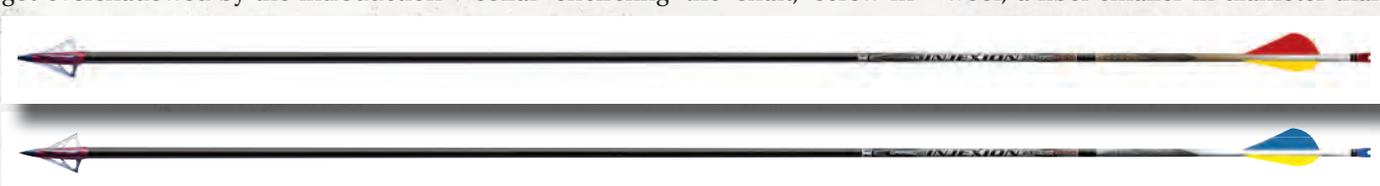


Injexion is offered in two versions, A/C (\$150 per 6) including high-strength carbon fiber bonded to a precision 7075 alloy core, and Carbon (\$90 per 6, shown at bottom of page) using super-tough N-Fused Carbon technology. Both share +/- .002-inch straightness and half-grain weight tolerances; the A/C is slightly heavier. Both include permanent white factory cresting.



### First Lite Chugach Workshirt

I love wool, whether discussing bowhunting wear or Sunday suits. It's superbly quiet, extremely durable, and doesn't shine or reflect UV rays. It really is the ultimate bowhunting stealth wear. First Lite ([www.firstlite.com](http://www.firstlite.com); 208-721-0101) has established itself as the go-to source for bowhunting friendly, machine-washable Merino wool, a fiber smaller in diameter than



traditional wool, and even synthetic materials, making it a natural moisture wicker, keeping wearers feeling dry when they sweat, while also providing a superior thermal regulator in cool or warm weather. First Lite offers garments in light, mid and heavy weights for nearly any bowhunting activity. Their camouflage options also expanding recently to include ASAT, Mossy Oak Infinity, Realtree Max-1 and Lost Camo, applied via a proprietary printing process producing sharp, crisp images. Every piece in First Lite's catalog has been updated to improve performance and bowhunting use. Completely new products for 2012 include the Llano SS (short sleeve) T-shirt for hot weather, Llano QZ with improved venting for warm weather, Chama Hoody, the popular mid-weight Chama mock now including a hood to cut cold and wind, Neck Gaiter, and Chugach Workshirt.

Like the rugged but quiet Kanab Pant, the new Chugach (MSRP \$160 solid, \$180 camo) uses the company's rip-stop woven Superfine Merino wool to create a button-down hunting shirt

that slips through thick vegetation with a whisper, won't collect burrs, but is highly resistant to snags and tears. This mid-weight classic style also includes Merino benefits such as extreme comfort, natural odor control and thermal regulation. It will not bind even when wet, allowing unrestricted shooting or climbing. It's offered in Dry Earth, ASAT, Realtree Max-1 and Mossy Oak Infinity.

#### G5 META Titanium Peeps

A true innovator, G5 Outdoors ([www.g5outdoors.com](http://www.g5outdoors.com); 866-456-8836) is another company regularly producing new and exciting gear. The new Havoc (MSRP \$45 per 3) mechanical broadhead is such a product; super-sharp Lutz blades, Posi-Lock Blade Retention, cut-on-contact steel tip, and synchronized two-blade deployment make

it a winning design. Yet it was something simpler that caught my eye at G5 this year - their META Titanium Peeps (\$20).

These META units are taking over more of the peep trade with their CNC machined, magnesium alloy design, if the number of them I see on bowhunting rigs lately is any indication. They're precise, don't damage strings even after many months of shooting, and provide a slight speed boost compared to aluminum or especially alignment-tubing-equipped models. Their 1/4 and 5/16 inch hunter peeps have become favorites. I've had some metal peeps go from round to oval after extended months of shooting the high poundage, tightly strung bows I prefer. The META Titanium Peep promises to eliminate these occasional failures, due to their strength advantage over aluminum. They include an anti-glare finish and come in 3/16, 1/4 and 5/16 inch inside diameters.



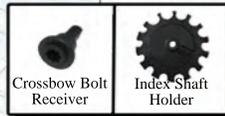
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**GamePlan Gear X-Bolt Sling**

Admittedly, I'm not much of a crossbow fan – mostly because I'm certainly not in need of another hobby. But there's no way around the fact crossbows are here to stay and experiencing meteoric popularity. One of the things that's always turned me off about crossbows is a quick glance tells me they're a major pain in the posterior to tote around the woods. GamePlan Gear ([www.gameplangear.com](http://www.gameplangear.com); 877-544-6611) takes a huge step forward in solving that inherent problem with the introduction of the ingenious X-Bolt Sling (MSRP \$40). This not only makes carrying a heavy crossbow more comfortable, but it won't interfere with sudden shot opportunities. The entire sling is made of stretchy black neoprene material, to eliminate wearing shoulder jolts when traveling. The design incorporates a split-yolk harness system allowing customers to distribute the load of a bulky crossbow evenly across both shoulders. A patent-pending "Loop-and-Boot" system slides over the crossbow butt to hold it securely while moving, but allows it to be slid off in seconds for a shot. The X-Bolt Sling helps make the best of a cumbersome dilemma.

**Goat Tuff Equalizer Release**

Goat Tuff's ([www.goattuffproducts.com](http://www.goattuffproducts.com); 520-742-1701) Equalizer Release Aid (MSRP \$200) guarantees faster arrow speeds by increasing any archer's draw length. While I've actually intentionally shortened my draw length (from 32 to 30) to enjoy easier arrow tuning, many friends suffer from a short-draw handicap. A longer power stroke increases energy



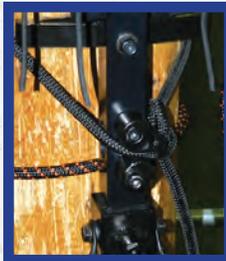
without excess draw weight, all other factors remaining equal. The Equalizer allows shooters to maintain accustomed anchoring points, while increasing draw length from 1 to 3 inches! Think of the implications for youth and

women shooters with 23 to 26 inch draw lengths, even for stronger men shooting 27 or 28 inch draws. Designer Jerry Smith says he has a design on the drawing board for archers like me that want to maintain current draw length, something I look forward to because the ingenious plunger trigger design completely eliminates torque and trigger-punching tendencies while maintaining straight-line shooting dynamics for added accuracy. The trigger is silky smooth and completely adjustable with the works mounted on an adjustable leather wrist strap. Quality, all-metal construction makes it highly reliable and tough.

**Muddy Outdoors BloodSport**

Muddy Outdoors ([www.gomuddy.com](http://www.gomuddy.com); 877-36MUDDY) has emerged from a crowded pack of treestand manufacturers with true insight and innovation. I like the waterproof seats, with 3 inch thick, triple-layer foam cores, the ingenious platform leveling system (involving only pulling a spring-loaded pin and sliding a collar, attached to the dual platform truss cables, into place

and then releasing the pin into an indexed locking hole). These stands have a Boomerang Cleat that



allows side-to-side adjustment on leaning trees and solid attachment. They also feature super-quiet Mega Grid oversized aluminum platforms. But my favorite feature is found on the new 13 pound, 21x29 inch BloodSport (MSRP \$230) model. The new Rope Cam System, one of the quietest and easiest setups I've seen in treestand attachment, makes setup faster and safer through pure simplicity. The system uses stout climbing rope, which is simpler to replace and easier to handle than flat webbing. One end is secured to the stand, the rope wrapped around the tree trunk and slipped into a spring-loaded cam system and released. The more pressure, or weight, applied to the rope, the tighter the cam system bites. It simply can't slip, but when a customer wishes to move the stand, even months later, the system releases instantly and with little effort; something that can't be said of many web-cinch systems. All Muddy hang-on stands include a 300 pound load limit.

**NAP KillZone Broadhead**

This section is about NAP's new broadhead, but I have to start with a few words on Rage Broadheads. Let me make it clear, I like Rage heads and have used them to deadly effect on many trophy animals because they penetrate well and create big holes that spill lots of trailing blood. I hit a buck poorly last fall that likely wouldn't have been recovered without a Rage hole in him. They've become one of





the hottest-selling heads in the business for these reasons alone. That said, Rage's continued premature deployment issue has remained a frustrating side effect, especially when pulled from bow quivers or while stalking through thick brush. My apologies to the hard-working people representing Rage (some of which I consider friends), but I have to call it as I see it.

New Archery Products' (www.newarchery.com; 800-323-1279) new KillZone (about \$40 per three) seems to include everything that I like about the Rage, while completely solving the unintentional deployment issue. The KillZone shown above with the matching practice point is an efficient rear-deploying, two blade design with 2 inch cutting diameter carrying NAP's spooky-sharp cutting edges. A patented spring-clip design eliminates unreliable O-rings or rubber bands, assuring the broadhead stays closed until lethal impact. Bob Mizek, NAP's production manager and lead engineer, demonstrated this reliability by rapping the head against a table sharply without deployment. Only by pushing the deployment spurs against a sharp edge were the blades engaged. The blades are also tied together via a steel set screw, which rides down a milled ferrule slot, assuring both blades open as one. The KillZone comes in three models; with faceted Trophy Tip, C.O.C (cut-on-contact) tip or Deep Six versions. Each package includes an extra matched-weight practice head.

#### Nikon Monarch 3 Binoculars

The spanking-new and remarkable Monarch 3 All-Terrain Binocular

(MSRP \$230 8X, \$250 10X) from Nikon Sports Optics (www.nikonhunting.com; 800-645-6687) joins the venerable, field-proven line of Monarch ATB binoculars, offered in super-bright 8x42 and 10x42 configurations. They include bright, high-contrast, high-resolution optics housed in an ultra-rugged, waterproof and fog-proof body covered with tough rubber armoring. All optics are fully multicoated Nikon Eco-Glass, providing scratch resistance and unsurpassed image quality for years to come. In addition, interior prisms include phase-corrected, high-reflective silver alloy multi-layer coatings to assure maximum light transmission and sharp detail in low-light bowhunting situations. Long eye relief, combined with multi-click turn-and-slide rubber eyecups makes them adaptable to any customer's preference and completely compatible for bowhunters wearing eyeglasses. They're also easy



on the neck after a long day afield with the 10x42 models weighing only 24.7 ounces. They are backed by a 25 year limited warranty and no-fault repair/replacement policy. In a nut shell; these are high-performance optics offered at an affordable price that won't let customers down in the field.

#### Rocky Athletic Mobility System

Clothing as gear has become an industry touchstone. Rocky (www.rockybrands.com; 800-848-9452), makers of some of the niftiest bowhunting duds in the business, has taken this notion to the extreme with the Athletic Mobility System (MSRP on the boots ranges from \$30 to \$190). This is a three-level system that keeps bowhunters in the game from warm/early through cold/late seasons. It includes boot as well as clothing systems, while keeping SKUs to a minimum. Level 1 is the Ultralight system for warmer environments or rigorous physical activities; Level 2 Midweight is for cooler, inclement environments or less physically-demanding pursuits; Level 3 Maxprotect is for harsher, cooler and inclement or sedentary activities. All the Rocky togs I've owned and used hard in the past have proven deadly quiet and bowhunting friendly, something I trust is also true of this new line.

A Level 1 outfit would include military-inspired, one pound C4T

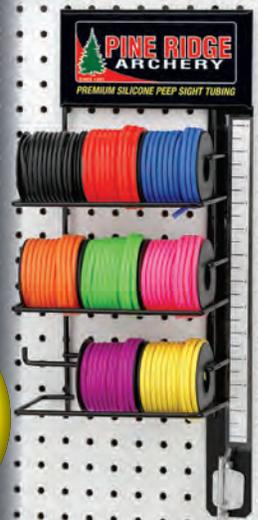
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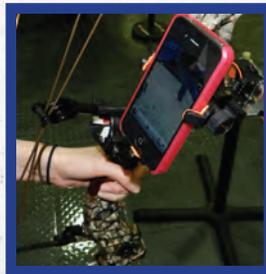
lightweight stalking boots, Performance Moc Tee and Pant, and Base Layer Thermals. Level 2 includes five boot options (like the 8 inch Realtree AP with 900 denier textile upper, PrimaLoft ECO Footwear Insulation and lightweight EVA and rubber outsole), 60 gram PrimaLoft vest or 1/4 Zip shirt, 150 gram Thinsulate Jacket and Pant (all with Rocky's Scent IQ antimicrobial treatment), 40 gram PrimaLoft beanie and gloves. Level 3 includes seven boot models (like the 9 inch Realtree AP with Hidden Lace System and 400 to 1,000 gram of PrimaLoft Insulation), water repellent Softshell Jacket and Pant, 40 gram Thinsulate ear-flap SilentHunter suede hat, 100 gram Thinsulate Gloves, 150 gram Thinsulate Parka and 100 gram Thinsulate Bib with SilentHide suede fabric; all with Scent IQ protection. The Athletic Mobility line is made to use as a complete system, keeping customers comfortable with changing field conditions.

### **S4Gear WingMan Treestand Console**

The sharp minds at S4Gear ([www.S4Gear.com](http://www.S4Gear.com); 541-998-8800) are always thinking outside the box, while also providing products that actually provide value-added benefits to real-world bowhunters. The WingMan Treestand Console (MSRP \$100) is the latest from this innovative company. As Katherine Rice demonstrates above, the unit provides a convenient gear management tray, rubber coated to eliminate noise, keeping gear such as can calls, range-finders, a paperback book, or coffee cup



within easy reach. The Quick-Detach T-bolt system allows it to be secured to any tree quickly and easily. It's weatherproof, lightweight and compact, allowing easy transport to and from stands and long life via strong 6061 T-6 aluminum. The pivoting arm moves the tray out of the way when needed with smooth, deadly-silent operation. The multi-position, edge-mounting holes allow for attaching accessories such as a bow quiver and/or S4's JackKnife smart phone bow mount. The Jackknife (\$45), shown below, is another new S4 product for 2012, allowing customers to mount their smartphone to their bow, or the Wing Man, for easy access while waiting, or to film their bow-hunting encounters using the phone's video function. The easy tray removal allows leaving the arm in the stand for later use and a closed-cell molded foam armrest provides added comfort during those long treestand rituals.



### **Stealth Cam Drone Remote Surveillance System**

I live by trail cams while bowhunting whitetail in my northern Idaho backyard. I've tried just about all of them. Some of the most reliable and trouble-free units I use come from Stealth Cam ([www.stealthcam.com](http://www.stealthcam.com); 877-269-8490). With up to a dozen units normally spread across 25 miles

of mountain territory I spend a lot of time checking cameras, especially during the November rut, a chore that keeps me running ragged during deer seasons. The idea of remote access has always appealed to me for this reason alone, but the systems involved have always proven cost prohibitive; both the required hardware and the monthly download costs associated with cell-phone-based programs. In Idaho's remote mountain areas cell-phone service is spotty at best, but that's another matter completely. For the average hunter operating in areas with reliable cell-phone coverage (Verizon), Stealth Cam has finally introduced an affordable option for remote camera management, both in start-up hardware, and monthly maintenance.

After four years of research and development the Drone Wireless System has arrived to solve the problems inherent to off-site technology that came before. Like other systems of its kind the Drone is a sophisticated cellular-based wireless system allowing complete control and image monitoring from any computer - anywhere in the world. The system consists of three parts. The Drone Camera includes components found in other Stealth Cam units, including Burst Mode, high-quality images, fast trigger speeds and long battery life. The high-res camera includes 60 feet night vision capabilities via 54 IR emitters. The addition of the high-speed CAT5 communication port allows communication with the GPS Enabled Cellular Wireless Modem, using the latest in global positioning technology and wireless data transmission. Finally, the Drone Command Hub Website allows customers control from the comfort of their home or office. Secure login to the Drone site provides GPS/satellite overlay of camera locations (including zoom in and out), ability to control multiple cameras with one login, SMS and e-mail notification of image upload, thumbnail preview, high-res download, camera configuration, remote image delete, monitoring of battery and memory levels, data management, image galleries and e-mail and social sharing. A mobile-friendly version of the Drone Command



Hub Website will also be available for mobile devices such as iPhones and other "smart phones."

This is all pretty standard fare, but here's the selling point that GSM's Doug Mann (in photo) emphasized. The Drone system costs only about \$500 to start (about half the price of most mobile systems), and web-site access and image management for as little as \$19.95 per month for 10,000 thumbnail images. With the Drone you essentially pay for megabyte space, for lack of a simpler term. When you log in you'll see a space bar at the bottom of the display. This is how much space you've purchased for the month and have available. Here's the cool part. Simply looking through thumbnails, essentially just seeing what's showing up in front of your cameras, costs you very little space (recall 10,000 thumbnails a month!). Download a high-res image and you'll use more space. If you use the system only to monitor activity, instead of collecting or sharing images, you use very little space, making it extremely affordable. Even if you do choose to take advantage of the Drone's more involved applications, using more space, the program is still more affordable than other systems in its class. The Drone has finally made remote trail cam access affordable to the working stiff. Now if I can just solve my reception issue...

#### Slick Trick ViperTrick Broadhead

I admit a decided affinity for Slick Trick ([www.slicktrick.com](http://www.slicktrick.com); 870-934-0131) broadheads. They're so outwardly simple but

ultimately functional, all-steel construction and internal cross-locking "Alcatraz" blade design assuring complete reliability, even after punishing bone hits. They also fly like darts, even from high-speed bows. I shot my 2011 Idaho elk with a RazorTrick, a massive 6x6 taken with a heavily-quartering shot from 45 yards. I thought I'd discovered the ultimate trick in that design, but handling the all-new ViperTrick (MSRP \$30 per 3) changed my mind. This four blade, fixed-design broadhead includes new geometry, a larger leading blade (1-1/16-inch wide) providing a more streamlined attack angle, the cross-cutting bleeder (7/8 inch wide) maintaining familiar Slick Trick lines with a more aggressive cutting angle normally creating wound channels wider than the measured diameter. Both are a stout .035 inch thick German Lutz Mercedes stainless steel. The longer, larger forward blade melds into a two edge cutting tip, the internal, cross-locking bleeder and solid "Super Steel" ferrule creating a



terminal unit as strong as a one piece head but offering instantly replaceable, razor-sharp edges. The head is offered in 100 and 125 grain options, both supplying 1-1/16x7/8 inch cutting diameters.

#### Trophy Ridge Ballistix CoPolymer System Accessories

Trophy Ridge ([www.trophyridge.com](http://www.trophyridge.com); 800-694-9494) made its name on vertical pin technology, but has continued to introduce innovative products year after year. Ballistix CoPolymer System technology essentially provides the strength of milled aluminum products but is 25 percent lighter. Lighter means less torque on the bow during the shot, less weight to tote up a rough mountain while chasing western game.

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Better yet, the Soft Touch Ballistix Coating provides the additional advantage of vibration and noise reduction. Ballistix CoPolymer is now found in Cypher Micro (MSRP \$110) and Cypher Series Sights (\$70) and the Beacon (\$80) 5 arrow quiver.

Cypher sights come in Micro Cypher 7 and 5 (with tool-less micro adjustment) and Cypher 5 and 3 (with tool-less dovetail adjustment). Reversible mounting brackets make each sight left or right hand compatible, and provide greater horizontal placement options. The super-bright,

wrapped-fiber-backed pins are .019 inch diameter for fine aiming; also allowing zero gap adjustment, the round pin guard holding a bubble level. The Front Fiber Optic Ring soaks up available light and combine with the No-Snag Fiber Routing System to keep fibers safe from damage. Micro adjustments include precise click stops and the pin-guard Contrast Glo-Ring with spectral distribution technology provides finer peep alignment. The Sight Light Housing accepts TR's Rheostat Sight Light and eliminates distracting glare. Cypher Series Sights without micro adjustments are offered in five and three pin configurations instead of five and seven pin. Both options include Realtree APG or black finish.

The Beacon quiver I'll discuss in greater detail in the next issue of *ArrowTrade*, but unique highlights include three powerful green LED lights in the hood to help customers reach dark stands safely, another LED inside the hood to help install arrows in dim light, a quick-detach system, braided rope loop to hang the quiver from while installed on stand, dual arrow grippers and three different mounting brackets.

#### Under Armour Scent Control

Under Armour (UA) ([www.underarmour.com](http://www.underarmour.com); 888-4AR-MOUR) has become a household name with bow-hunters in relatively short order by providing cutting-edge outdoor clothing designs that provide comfort during the most demanding forays. For 2012 the company has set out to make us scent free as well, with garments like the Dead Calm jacket we're showing above right. Under Armour Scent Control is an exclusive technology the



firm says traps and suppresses the growth of odor-causing bacteria. UA Scent Control both traps bacterial odors and suppresses their growth, using a silver-based antimicrobial encased in a custom-engineered zeolite carrier, a synthetic lava that the company says is superior to carbon. UA Scent Control offers a dual-pronged approach to scent management, through the naturally-occurring antimicrobial properties of silver, and through the absorption action of the specially engineered, open-pored zeolite lava.

This technology is adhered to the clothing fabric via a binder that is vapor permeable (breathable) and highly durable. The system is rechargeable, with absorbed molecules expelled or displaced during washing, leaving the active ingredients ready to absorb again. No heat needs to be applied. The company tested 25 fabrics for compatibility and says all showed more than 99.9 percent efficiency even after 50 washings. The technology will be available in 28 garments for men (MSRP



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\$65 to \$270), 12 items for women (\$75 to \$200), 10 accessory pieces (\$30 to \$45) and in spray form (\$16). UA plans to market the technology aggressively, meaning customers will soon be seeking items in the line.

### X-Press Pro Model Bow Press

I know from recent experience that today's parallel to beyond-parallel limbed bows have become more difficult than ever to service. My old Apple bow press that served for decades sees less and less action today, because it simply isn't compatible with so many of the short-model bows I receive these days. X-Press ([www.xpressbowpress.com](http://www.xpressbowpress.com) 715-395-9955) bow presses are designed to deal with these newer models, the truly revolutionary Pro Model (MSRP \$1,200) making work on all bow and crossbow models safer and more efficient. The X-Press Pro Model's easy arm adjustment with Easy Slide Technology allows for faster and easier transition from bow to bow. The unique red press wheels easily adjust with the Quick Spin design to fit any bow limb configuration. This model eliminates creeping under tension common with other presses while working on parallel limbed bows. The gear-driven riser support adjustment allows the compression of bow limbs in a natural arc, and reduces stress and potential damage to all bow risers. The special design requires no timing adjustment between jobs, the Safety Lock System holds all bows securely while you work and padded shelves support the riser. It is self contained, requiring no additional accessories. In the pro shop business time is money and the X-Press Pro Model saves you time with every job.



### Yo' Buddy 3D Impulse Targets

Smart shooting practice is a big part of bowhunting success. A solid target is a large part of any archers' needs with 3-D targets providing the most quality practice available. The problem is most bowhunters simply can't afford the cost of a regulation 3-D target, while the most affordable models just don't stand up to hard use. Enter Yo' Buddy Archery Targets ([www.tobuddyarcherytargets.com](http://www.tobuddyarcherytargets.com); 601-947-6542) a new face in affordable bowhunting targets. New and highly-portable 3D Impulse Targets give archers from beginner to expert a convenient, affordable and realistic option for quality shooting practice. These molded, high-impact foam targets provide the part of the animal that counts, from shoulder to flank, eliminating legs, head/neck and hindquarters that make full-sized targets difficult to handle. Impulse targets are free standing and include a molded-in carrying rope loop for easy maneuvering. The vitals, shoulder blades, backbone and ribs are clearly marked to give instant feedback on arrow placement after every shot.

They are offered in Yo' Buddy Whitetail Deer, Lil' Buddy deer, Antelope, Bear, Elk, Moose, Turkey, Boar, Booner Whitetail Deer and Mule Deer. Smaller targets in this brand range in price from \$90 to \$120 MSRP while large targets such as Elk and Moose are \$250, opposed to nearly \$1,200 to \$1,500 for full-sized elk or moose from other makers. Yo'Buddy also says it provides a dealer margin of 40 to 50 percent. They're molded of high-impact foam tough enough to withstand a week of demo shooting at a busy ATA Show, and offer budget-minded customers realistic target options they can actually afford.

There was a lot of agonizing juggling to create the final list. Some of my favorites had to be cut for space. It's the nature of the beast, but serves to drive home the point that 2012 has proven one of the most exciting in recent memory. There's a lot of new gear out there this year, plenty of product to keep the gear enthusiast coming back for more!



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# Dealer Profile

## Sound Business Approach, Key Hiring Decisions are Foundation for a Premium Pro Shop in Utah

**I**t was a beautiful morning when I pulled into the parking lot of Wilde Arrow Archery located in Centerville, Utah about 20 minutes from Salt Lake City. I stepped from the car, smelled the clean morning air and glanced up at the Wasatch mountain range bathed in the bright western sun. I could not imagine a better setting for a pro archery shop. However I was

soon to learn that Wilde Arrow Archery was anything but an ordinary pro shop.

Stepping inside I was greeted by the owner Jeff Duke. I had arrived about an hour before the store opened and it gave Jeff and me an opportunity to chat while his manager Jeremiah Plyer and his staff got the shop ready for their first customer. Jeff is not a hands-on owner who deals directly with the customers,

pours over the inventory of sights and broadheads or spends time in the back room tuning bows or fletching arrows. Jeff's skills are not archery related but rather business related. He is an owner, investor and mentor to his staff. As we talked, I quickly learned that his skills are in selecting the right people to do the job, providing them guidance and parameters and most importantly empowering them to do the job. But I am getting ahead of myself so let's step back to learn how Wilde Arrow Archery came into being.

"I am a regional manager for Shaw Industries, a manufacturer of flooring materials and coverings," said Jeff. "Because I live in the heart of some excellent hunting country I have been a lifelong hunter. In 2001 I got interested in bowhunting to avoid the crowds that often occur in rifle season and to increase the challenge of the hunt. To learn more about the equipment I needed I went to see Dee Wilde who was a well known tournament archer and who owned archery shops in both



*This is the Wilde Arrow Archery "A" team on the day of ArrowTrade's visit. From the left are Cody Jones, full time employee, Jeff Duke, owner, Jeremiah Plyer, manager, Dillon Durtschi, part-time employee and Josh Ferrin, part time bow mechanic and salesman.*

*This large Wilde Arrow sign juts skyward at the edge of the property. It can easily be seen from the nearby thruway alerting passerbys as well as guiding customers to this 50 by 100 foot building in Centerville, Utah.*



# Wilde Arrow Archery

By John Kasun

Pocatello and Idaho Falls, Idaho. As our relationship developed Dee mentioned he wanted to open up a third shop in the Salt Lake City area and that immediately caught my attention as a potential business opportunity.”

“In 2003 I partnered up with Dee to open a shop in Layton, Utah a short distance from Centerville,” explained Jeff. “In 2004 Dee wanted to personally downsize his involvement in the shop and I bought out his share. Because my full time job as regional manager occupied the majority of my time I hired a full time manager to run the shop. The business struggled along and for the most part was flat. In 2006 I knew I would have to make some changes or walk away. I needed a new manager and thought of Jeremiah who had approached me for a job earlier. He was now working for the local Sportsman’s Warehouse but also frequented my shop as well. I was impressed with Jeremiah and knew that many of the customers who came to my shop also shopped at Sportsman’s Warehouse because they were comfortable with Jeremiah. I felt Jeremiah would make the best candidate for manager but when I approached him with an offer he decided to remain at Sportsman’s. I told him I understood but left the offer

open. Later that year we met for lunch and had an in-depth talk about what I was trying to do with the business and after a lot of thought he decided to give it a try.”

“I felt Jeremiah had excellent people handling skills plus a lot of technical archery knowledge,” Jeff continued. “He had strong ability and potential that just needed to be developed so I was anxious to give him an opportunity. I exposed him to the marketing and management side of business and insisted we stress customer satisfaction. Jeremiah’s first hire as manager was Cody Jones who was not only very knowledgeable but proved a great fit with our personalities plus he understood and supported our desire for excellent customer satisfaction and service.”

“I feel the key to any successful business is your people,” stressed Jeff. “You can’t be afraid to put better people than you in your organization. If your mentality is to control people I think you are working against yourself. My logic is to empower people but I think it is important to empower the right people. For example Jeremiah and Cody easily interfaced with the customers and handled the technical side of the business. I set the budgets

and did the buying for the first year or two as that was my strength. I slowly brought Jeremiah and Cody into the process, giving them more input and authority. Although I still monitor the overall budget I have turned purchasing entirely over to them. Slowly the business began to turn around and I could clearly see the potential for growth. In April of 2009 we leased a music store in Centerville. The building was 50 by 100 foot with adequate parking and it was right off of Legacy Highway and Route 15 giving us easy access from a major thruway. We gutted the building and completely rebuilt the inside. I knew my guys were perfectionist when it came to equipment and customer service. I needed to back them up with the best equipment so we settled on Mathews, Hoyt, Bear and Mission as our bow lines and then selected high quality accessories to complement our bows.”

“Personally I did not draw any income from the store and treated it strictly as an investment,” Jeff said. “That investment has now grown and is providing an attractive return due to our efforts as a team. It is important

*The pro shop was completely remodeled in a white pine interior that is beautiful as well as natural to the area.*



*The 30 yard indoor range is well lit and neat as a pin. Soon after the shop opened the indoor range began to fill up with some shooters trying out bows while others were doing some serious practice.*



*It seems like every inch of available space is used for both tidy storage and display such as the hallway shown here leading to the indoor range.*

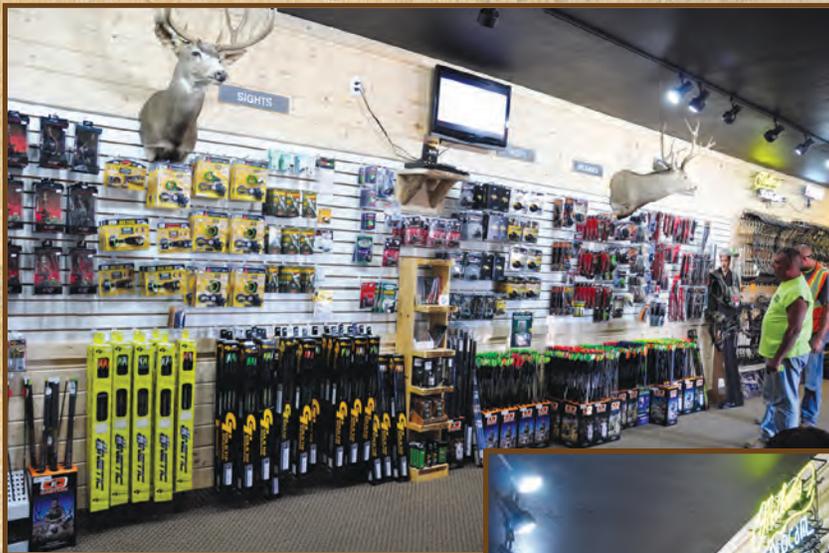
to understand that my investment was not only made in property and equipment but in my people as well because they are a critical part of the business. In my opinion I have some of the best people in the industry. We built the business through outstanding customer service and attention to detail and we do not badmouth or price cut our competition. As a matter of fact I think proof of that is that we are good friends with all of our competition."

By this time Jeremiah had turned over the shop preparation duties to his staff and sat down with Jeff and I. Jeremiah filled in some of the blanks about his prior experience and how he came to Wilde Arrow Archery. "In 2003 I was working at Jake's Archery in Orem, Utah," Jeremiah said. "In 2004 I was relocating to this area so I left Jake's and walked into Wilde Arrow Archery and asked Jeff for a job. At that time Jeff was well staffed and did not have a vacancy so I went to Sportsman's Warehouse and got hired immediately. I moved up quickly through the hunting department and after several months I

was doing more and more work in the archery department. It was just about that time that Jeff approached me about a job opportunity. However I was comfortable at Sportsman's and things were going well so I turned down his offer. When Jeff called me a second time in 2006 we went to lunch to talk it over. What impressed me most was Jeff's vision for Wilde Arrow Archery. I knew I had in-depth archery experience but I recognized that Jeff had extensive business knowledge and I definitely wanted to learn more. I was secure at Sportsman's but working for a large corporation had so many restrictions that it was difficult to have much flexibility when it came to equipment choices and service policies. I wanted to do a better job for the customer and I felt that Wilde Arrow would give me that opportunity plus the ability to learn the business side from Jeff. It was a difficult decision and it took me several weeks of thought to finally make up my mind. In the fall of 2006 I decided to make the move to Wilde Arrow. When I turned in my notice

Sportsman's offered me a store manager position but I thought Wilde Arrow Archery was a better fit for what I wanted to do with my future. I was shocked but pleasantly surprised at how many customers from Sportsman's followed me to Wilde Arrow."

"Working with Jeff was like opening a door and walking into a giant room," Jeremiah laughed. "I was totally familiar with archery and thought I knew a lot about business but Jeff really opened my eyes and helped me understand how a business operates overall. What I learned from Jeff applies to any business because good business principles truly apply to all businesses regardless of the product or service. I had plenty of experience selling archery products but I never had in-depth experience managing inventory. When Jeff took me to my first ATA Show I was overwhelmed with the thought of planning an entire year's worth of purchases. I was riding on Jeff's wings on the business side as far as buying the right quantities at the right time and the finer points of running a pro



*The pro shop's display areas are well organized, neatly arranged, complete with pricing and very well lit. The displays permit the customers to easily see what is available in what price range allowing them to easily narrow their choices when working with a member of the sales staff. Each section is also clearly labeled with attractive signs to guide the customer to the right area. In the center of the display area is a large overstuffed couch and several chairs which creates a comfortable area to either chat with fellow customers or watch continuous running videos such as this couple is doing.*





Jeremiah has set up the bow service area with multiple work stations each complete with its own set of tools. Here Jeremiah (right) is working on one setup while instructing Cody who is working on a different bow.



The service work is well organized to ensure that required work is done on time and to the proper specifications. Each bow carries with it a work sheet detailing exactly what is to be done as well as identifying the customer and his contact information.

shop. Jeff taught me the importance of properly planning our inventory based on projected sales."

"Archery shops come and go because people who love the sport want to be involved but often they don't truly understand that it is a business first," Jeremiah said seriously. "As the business grew I was getting so tied up with customers that I realized I needed help and hired Cody Jones in the spring of 2007. Cody was super excited with the opportunity and I used his passion to teach him the technical side of archery. Cody and I worked hard to stay on the

same page when it came to answering customer questions and making equipment recommendations. I feel it is important that a customer feels comfortable and confident with me, Cody or any of our sales staff. It is my responsibility to provide the training necessary to ensure we all ask enough questions of the customer to find out what their needs are as well as their budget so we can make the best recommendations. There is a difference between an

archery shop and an archery pro shop. An archery shop can sell you what you need but a pro shop can explain why you need it, how it works and can set it up properly."

Jeremiah believes strongly in educating his customers. He holds free bow-tuning classes which cover the basics including broadhead tuning. He feels that an educated customer who is able to recognize and fix some basic problems and who possesses good



Wilde Arrow Archery uses small counter displays such as the Camo FX one shown here which remind customers of last minute needs and generates impulse buys.



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shooting techniques will be more confident and not become easily discouraged. That in turn will keep them in the sport and retain them as a customer. Many of Wilde Arrow Archery's new customers are converted rifle hunters. Jeremiah is very aware of these customers and strives to make their transition a good experience so they stay in the sport and remain customers.

Wilde Arrow Archery's customer base reaches a radius of over 100 miles and due to its geographical location draws customers from not only Utah but also Wyoming and Idaho. Unlike the east where long shots are rare western bowhunters find them to be the rule rather than the exception. This means a great difference in equipment set-ups. Heavy draw weight bows and single pin adjustable sights are the norm out west.

"One of our goals is to create a relaxing atmosphere," Jeremiah explained. "Life is hectic and in our shop we try to take our customers' minds off of the outside world and their normal day to day troubles. Hunting and archery are releases from the real world and it is important that my staff and I keep upbeat and positive. That effort goes to paying attention to every detail such as making sure we offer a clean, comfortable and relaxing atmosphere. This is especially important when it comes to women and youngsters. I want to make sure that everyone not only feels welcome but comfortable as well."

To keep the Wilde Arrow Archery name in front of the public Jeremiah uses Facebook and maintains an attractive and informative website. When I visited the website I found it well organized and easy to use. Two features

that particularly caught my attention were the promotion tab and the trophy page. When I clicked the promotion tab an in-store video popped up which featured Jeremiah talking about the new 2012 model Hoyt bows. He did an excellent job of covering the new features of several models and finished up by inviting the viewer down to the shop to try the different bows they had on hand in different draw lengths and weights. The presentation was natural and relaxed and I felt as if I was in the shop and Jeremiah was talking only to me. It was the next best thing to being there and I am confident that the promotional video drew in many customers. I can see that by using a promotion of that type frequently and by keeping it fresh with new information, people will return to the site often to see what's new.



*While the shop traffic was mainly adult males there was a steady stream of young girls, ladies and youngsters as well. It appears as if Wilde Arrow Archery's attempt to attract a wide range of customers is succeeding.*



*Striving to always keep things light-hearted Jeremiah and the "crew" added this life-size movie advertisement of "Edward" from the Twilight Series which according to Jeremiah is a "chick flick". They put "Edward" to work using him to display some of the latest archery products. One day they put "Edward" in the rest room and countless people walked in, excused themselves and waited outside the door for "Edward" to come out.*



**Dillon Durtschi fletches some arrows between customers. Dillon's work area is well arranged with all the materials within easy reach. Below the work table is an area where finished arrows can be marshaled awaiting customer pick-up.**



to overcome that image. By watching what we buy and how we buy it we can give the customer value for the dollar they spend while remaining competitive and still make the margin we need to stay in business. Another misconception in regards to pro shops being expensive is because we sell higher end gear. Sure you can buy a sight cheaper in a big box store but chances are you cannot buy the same quality sight with the same features as the ones a pro shop offers. It is important that we stress that to the customers whenever the opportunity presents itself

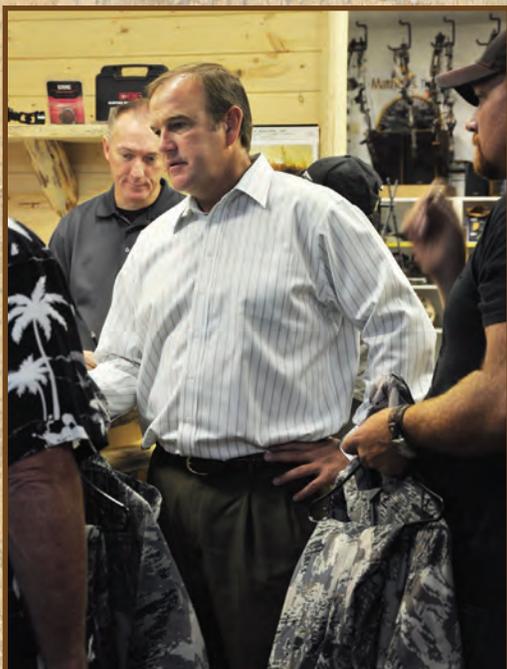
"The internet is a problem as some people try to stretch their dollars and then comparison shop at a brick and mortar store," continued Jeremiah. "Depending upon the nature of the sale we may make some adjustment but we stress our knowledge and service while being careful not to offend the customer. Times are difficult for some people and there is no sense in winning the battle and losing the war."

According to Jeff and Jeremiah business has grown each year even through poor economical times. A large portion of Wilde Arrow Archery's customer base is construction workers. When times were good and construction booming they were buying big boy toys such as boats, motorcycles, ATV's and archery equipment. In the last two years construction has taken a downturn and although the sale of big

A trophy page always draws viewer interest but Wilde Arrow Archery went one step further and included several photos of staff members at different archery and sports shows mixing it up with noted archery personalities. This not only added interest but also gave the shop creditability. While Jeremiah is conscious about using the web site and Facebook as communication tools he is also cautious about overusing them and coming across as "spam" to the customer.

Prior to Christmas last year Cody did a video clip centered on the Mission Craze on which Wilde Arrow Archery was running a holiday special on YouTube. The responses came from as far away as 200 miles with a bow even being sold to a customer in Oregon. The original intent was not to do internet sales but just to get "face-time" with potential customers. The reaction however shows the power of the internet especially when personal one-on-one promotions are utilized.

"Customers perceive pro shops as expensive," said Jeremiah. "That is not true but we have to work hard



**Although Jeff Duke does not "work the floor" he does take time to interact with the customers whenever he has some spare time at the shop.**

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items has dropped off archery equipment is still doing well. Jeremiah feels that the proven brands they carry such as Hoyt and Mathews are the backbone of the business. (The Hoyt manufacturing facility in Salt Lake City is located approximately 30 minutes from Wilde Arrow and its staff has both a close professional and personal relationship with some of the personnel at Hoyt.)

“You need the right product line with the right margins,” stressed Jeremiah. “Our customers have confidence in our product lines which have proven themselves on the target range and in the field. When it comes to accessories I look for trends. A good product sometimes takes a roller coaster ride especially when a new competitive product comes on the market. However that does not necessarily mean the product is dead; it may just mean that it will take a little time for it to regain its market share. Our point of sale computer program is a fantastic management tool when it comes to analyzing such trends and determining what accessory mix will work best. We strive to satisfy every customer but our goal is to build loyal customers. A satisfied customer is one who comes in to



*Dillon Durtschi is equally comfortable behind the counter writing up a customer order or on the sales floor helping them select an arrow rest for their new bow.*



buy a sight, buys it and leaves. A loyal customer is one who will wait to buy a sight from us if the one he wants is not in stock at the moment.”

About this time in my visit the shop was filling with customers and Cody and Dillon Durtschi, the on-duty staff, were busy trying to service everyone.

Excusing himself Jeremiah waded into the crowd with a big smile and a hello for everyone and within seconds was busy helping a customer. I spent the next several hours just hanging out in the shop to get a feel for it in full operation.

Jeremiah and his staff reminded



*Wilde Arrow Archery has a small trial range just off of the counter area where the staff helps customers get fitted for a bow or assist with some shooting form concerns. Jeremiah's experience shows clearly as he moves between customers with varying degrees of experience making each one feel comfortable.*



*If I was to pick a bowfishing area Utah would be one of my last choices. However Jeremiah has built up quite a bowfishing client and he maintains a complete bowfishing section to service their needs.*

me a lot of the Harlem Globetrotters. They were skilled and confident making every move count all while keeping the atmosphere friendly and light-hearted. While I thought I had learned a lot about Wilde Arrow Archery's



*Dave Jones (left) is the father of Cody Jones and also a part-time sales employee. Dave is shown here helping a customer make some final adjustments to his set-up.*

operation during my interview I was shocked at how much more I learned by just observing and listening to the business transitions.

Every customer was greeted and approached when they came into the shop. If the staff was busy with another customer they still made sure they acknowledged the new customer's presence with a glance, a wave or a simple hello. When the shop filled with customers everyone on the staff was front and center. As soon as the shop hit a lull each staff member immediately turned to other tasks at hand. Dillion was fletching arrows and pulling orders. Cody and Jeremiah slipped into the back room work area to service bows. Wilde Arrow Archery's service department is organized into four basic sections. One area contains bows sold awaiting set-up and delivery to the customer. A second section is bows in for repair for which all parts are on hand. A third section is for bows in for repair but which are awaiting shipment of required parts. The fourth area holds bows completed and awaiting customer pick-up. This system allows any staff member to step into the service area and tell at a glance what needs to be worked on and in what order and immediately go to work. Periodically



*Cody Jones (left) gets intense as he explains the details of a new sight system to a customer who is heading out for elk and anticipates some long range shots.*

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**This is the view of the nearby mountain range as seen from the pro shop parking lot. If you look close you can almost see the deer and elk.**



**Many couples frequent Wilde Arrow Archery and in a high percentage of the cases both the man and the woman were archers like the couple shown here.**

one of the staff would walk through the shop checking the displays and straightening up anything out of order, keeping the shop looking fresh.

A customer came in to pick up a bow he had rented along with some arrows and a target using his credit card to leave a return guarantee deposit. I could tell from his questions that he was not an archer. After he left I learned that he was having a family reunion and wanted to have some recreational opportunities that everyone could enjoy. Jeremiah had rented him some Genesis bows with accessories. Not only did it provide the entertainment he sought but it also exposed a group of total strangers to archery, a sport in which they could become interested resulting in potential future customers.

Wilde Arrow supports local community day events by providing targets and equipment, giving parents and children an opportunity to try archery. It also works with the local Boy Scouts

by having them come to the range to earn their archery merit badge. Jeremiah is not content with simply attracting customers; he is determined to grow his own. Wilde Arrow Archery also gets groups of shooters from the shop to travel to local league shoots giving the shop exposure which normally results in attracting new customers from different areas. The staff hope to eventually sponsor a shoot in conjunction with the Utah Bowhunters Association.

A 90 day lay-away program is available for a bow purchase and when the bow is half paid for the customer can come in and shoot it on the indoor range. The program requires a 20 percent non-refundable deposit to prevent a customer from shooting the bow for a period of time and then saying they

changed their mind. A military discount is available for those customers on active duty. This program gives back to the community and shows respect for the military, all while attracting customers.

Although Wilde Arrow Archery had a video range at its original store management choose to not put one in the new shop. Instead they installed a 30 yard indoor paper range. Prior to the hunting season each year they put up 3-D targets and add small pine trees and brush to change the look and give the customers a new shooting atmosphere. The range fee was originally set at \$5 for 30 minutes. However they noticed that people could normally shoot for approximately 30 to 45 minutes before they got tired. The range fee was then changed to \$5 for all day. The customer was more relaxed because he was not shooting against the clock and still only shot for about 45 minutes but felt like he was getting a better bargain. It was a win-win for everyone. Today a customer can purchase a range card for

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**Jeff Duke maintains an office at one end of the pro shop building where he works when on site to oversee the budget and overall operation.**

\$40 which is a punch card with 10 days on it. Each fifth day is a FREE punch so they get ten shooting days for the cost of eight. This promotes additional cash flow and speeds up the process when a customer wants to use the range.

Wilde Arrow offers a classy looking pre-paid gift card that is available in any denomination. It uses an outside computer program to generate and control the card. The service costs \$1.25 per card and a \$10 processing fee for the service per month. As the customer uses the card his purchase is automatically deducted at check-out and his balance is recorded for future use. Eighty to 90 percent of the gift cards are sold during November and December.

When a customer buys a bow for \$500 or more they receive a rewards card giving them 5 percent off of any accessory purchased at least 30 days after the bow purchase for each \$100 spent. The rewards card is good for one year and is extended for another year each time an additional \$100 is spent. The reward system encourages customers to return to take advantage of their available discount and because

each purchase builds up more points it automatically encourages repeat business. The computerized system also tracks the customer buying history so if they need arrows or have any question on any equipment they have purchased in the past it can be easily looked up. It is also a great aid when someone comes in to buy a gift for a customer who is registered in the system. Because the system allows Wilde Arrow to track customers by money spent and items purchased it helps establish a personal relationship with the customer.

### SUMMARY

My trip to Wilde Arrow was not only pleasant but very interesting and informative as well. I was very impressed with the fact that Wilde Arrow was not only a successful archery pro shop but also a successful business. Under Jeff's direction good business techniques were applied to an archery business. While Jeremiah is driven by his love of archery he is fully aware that in order to pursue that love he must apply the good solid business practices necessary to remain in business.

In some ways this reminds me of the announcement you hear when you board a plane which goes, "In the event of an emergency and the oxygen masks drop, adjust your mask before attempting to help others." We have all heard that statement but how many of us have thought of what it really means. It's simple; you can't help others until you have taken care of yourself. When it comes to operating an archery shop, a sport which we all love, it is important to remember that it is a business first and if you don't take care of the business end you will not be around to enjoy the fun part. Wilde Arrow Archery has its oxygen mask on firmly and they will be flying high for a long time.

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# Mid-Priced Bow Evaluation

## OVERVIEW:

Kicking off the technical evaluations of compound bows for 2012, we turn to a segment of the marketplace that has not been subjected to our test parameters in the past – Mid-Level bows. Given the state of the economy over the past several years, this portion of the archery marketplace is probably responsible for more than a fair share of compound bow sales. With so many excellent offerings in this price point, we are happy to begin including them in our reports. Because of this, the same technical attributes that *ArrowTrade* has reported on for Flagship bows in the past are evaluated. These items are as follows:

TEST CATEGORY	ASSESSMENT
<b>Dynamic Efficiency</b>	Provides an indication of the amount of energy output by a bow relative to the energy expended through drawing the bow back. An assessment is made with multiple arrow weights.
<b>Speed per inch of Power Stroke</b>	Provides an indication of the amount of speed output by the bow over the distance from the valley to the static brace height position. An assessment is made with multiple arrow weights.
<b>Noise Output</b>	Provides an indication of the noise output characteristics of a bow at the “point blank” range utilizing a series of shots with multiple arrow weights.
<b>Vibration</b>	Provides an indication of the vibration characteristics of a bow during and after shot execution utilizing a series of shots with multiple arrow weights.

**Note:** The criteria outlined in this evaluation were deemed to be the important factors to consider for a compound bow. This evaluation in no way represents all areas that are important to archers. Personal experience and preference were used to derive these criteria. In addition, each bow is evaluated under very specific conditions and parameters with specialized test equipment. Your results may vary.

## Speed per inch of Power Stroke

CATEGORY	TEST METHOD	DESCRIPTION
<b>Speed per inch of Power Stroke</b>	<ol style="list-style-type: none"> <li>1) Collect data for four different arrow weights               <ol style="list-style-type: none"> <li>a. Setup chronograph at a distance of 36 inches from the throat of the grip of the bow</li> <li>b. Use Hooter Shooter to shoot five arrows for each weight through the chronograph</li> <li>c. Note each speed and average for each weight</li> </ol> </li> <li>2) Determine power stroke length               <ol style="list-style-type: none"> <li>a. Measure brace-height and add 1-3/4 inch</li> <li>b. Subtract measurement from a. from the Draw Length of the bow (see Figure 1)</li> </ol> </li> <li>3) Divide speeds from Step 1) by Power Stroke measurement from Step 2) to determine Speed per Inch of Power Stroke</li> </ol>	<p>Since bows react differently to different arrow weights, four arrows of 5, 6, 7, and 9 grains per pound are used in this assessment. Because there are so many varying configurations in today's compound bows (e.g. low or high brace height, reflex / deflex riser geometry), the amount of speed output by each bow per the inch of its power stroke is a reasonable way to compare each bow on more of an equal playing field.</p>

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We would like to thank the manufacturers and sponsors who provided equipment for this evaluation; without them and their support, this evaluation never would have been possible.

While at the ATA show, I met Larry

Dickerson from Head-Lock. His company offers a simple, yet effective, solution to the never ending problem of field tips loosening up after several shots. Their field-tips include a nylon insert in the threads that prevents it from backing out of the arrow's insert.

This is certainly a time saver for me because I never have to check to see if they need to be tightened. This product comes in several different sizes, including 75 grains, 100 grains and 125 grains.

A big thank you goes out to Easton

# Dynamic Efficiency

CATEGORY	TEST METHOD	DESCRIPTION
<b>Dynamic Efficiency</b>	<ol style="list-style-type: none"> <li>1) Create Draw-Force Curve</li> <li>2) Analyze curve to determine Stored Energy</li> <li>3) Using speed data captured in the Speed per Inch of Power Stroke Test, determine dynamic efficiency for each arrow weight using the following formula below</li> </ol> $KE = \frac{ArrowWeight * Velocity^2}{450240}$	<p>The purpose of the compound bow is to transfer the energy expended in drawing the bow back (Potential or Stored Energy) into the energy propelling the arrow downrange (Kinetic Energy). Unfortunately, not all of the Potential Energy is turned into Kinetic Energy. There are various reasons for this, but regardless of the cause you are not getting all the energy out of the bow that you have put into it. The reason for testing dynamic efficiency is to determine which bows perform the best in transferring the energy that is "stored" into the energy in motion that is released through the arrow.</p>

# Vibration

CATEGORY	TEST METHOD	DESCRIPTION
<b>Noise Output</b>	<ol style="list-style-type: none"> <li>1) While conducting the Speed per inch of Power Stroke Test, setup the test accelerometer at a point on the riser opposite the throat of the grip</li> <li>2) Using National Instruments software, capture Acceleration Data in 3 dimensions for each shot fired.</li> <li>3) Analyze the data using Matlab software to determine the vibration in the X, Y, and Z directions as well as the Total Vibration output</li> <li>4) After removing the highest and lowest measurement for each arrow weight, average the remaining values to determine the maximum vibration amplitude.</li> </ol>	<p>The less vibration output by a bow and felt by the archer during and after shot execution, the more enjoyable a bow is to shoot, especially during long practice sessions. Our test equipment is highly sensitive; an archer may not be able to distinguish between some of the measured vibration outputs of given bows. To most accurately reflect the vibration felt by an archer, the vibration data is collected on the front of the bow's riser opposite the throat of the grip.</p>

arrows. Easton provided all of the arrows used for this evaluation and they worked hard to provide combinations of points, inserts, nocks, and shafts that met my very specific needs. I was extremely impressed by the quality and consistency of the Easton arrows and would recommend them to anyone.

Mallory Swaney of Last Chance Archery provided the Power Press Deluxe, which uses an electric motor

mated to a screw-drive mechanism to compress the limb tips of just about any bow on the market. This has the effect of minimizing stress on both the riser and the limbs. This press is very

easy to use and was extremely helpful in getting the bows fine tuned for the test.

James and Barbara McGovern of Rinehart targets have supported these



evaluations since I started them in 2006 by providing targets for use in the evaluation. They are both very easy to work with and their products are awesome.

The new Brick Wall system is both large enough and durable enough to take the abuse of thousands of shots without fear of missing the target. The ability

to rotate the sections with less wear into key areas is a great feature for my testing.

## Noise Output

CATEGORY	TEST METHOD	DESCRIPTION
<b>Noise Output</b>	<ol style="list-style-type: none"> <li>1) While conducting the Speed per inch of Power Stroke Test, setup the test microphone 36 inches in front of the throat of the grip of the bow at a height of 36 inches, with a arrow trajectory offset of 6 inches (See Figure 3 below)</li> <li>2) Using National Instruments software, capture Sound Pressure Level Data for each shot fired.</li> <li>3) Analyze the data using Matlab software to determine the sound output in dB, dBA, and dBC</li> <li>4) After removing the highest and lowest measurement for each arrow weight, average the remaining values to determine the overall sound output level.</li> </ol>	<p>A great deal of emphasis is placed on the amount of noise output by compound bows. Today's hunting bows have different noise output characteristics with varying arrow weights. Many hunters use heavier arrows for increased down range kinetic energy, while others use lighter arrows for increased speed. Because of these issues, noise output readings are measured at point blank range for four different arrow weights.</p>

### INITIAL CONDITIONS AND TEST CATEGORIES:

Upon receiving each bow, a thorough examination is conducted straight out of the box. Notes are taken documenting any imperfections in the finish and machine work. The areas of interest for this inspection are as follows:

- Grip**
- Riser**
- Cams**
- Cable Guard**
- Limbs / Pockets**
- Strings / Cables**

After the inspection is complete, a Revere Model 9363 load cell and TotalComp T500E indicator, adapted for use on a Hooter Shooter, are used to determine the peak draw weight, draw length, Actual Let-Off and Effective Let-Off; brace height is measured to the nearest thousandth of an inch with a set of Mitutoyo Calipers while axle-to-axle length is measured with a calibrated 36" steel rule.

Next, a New Archery Products QuikTune 3000 arrow rest and a brass nock are installed and each bow is shot by hand in the "out of box configuration" to baseline the speed of each bow as provided by the manufacturer. Again, notes are taken to document the feel of the grip, the draw cycle, and the sound & vibration output, as felt by the shooter, to prevent any bias due to reviewing the objective test results later in the test. After this assessment is made, tuning to Draw Length / Draw Weight specifications is done as follows:

- Draw length is adjusted with modules or integral draw-stops (as applicable).
  - Modification to strings / cables is only used as a last resort with permission from the manufacturer so as to minimize impact to efficiency
- Draw weight is adjusted through modification of the limb bolts
  - If the specified draw weight can't be reached by the particular bow (i.e. draw weight is too low), modification to the string / cable(s) may be necessary

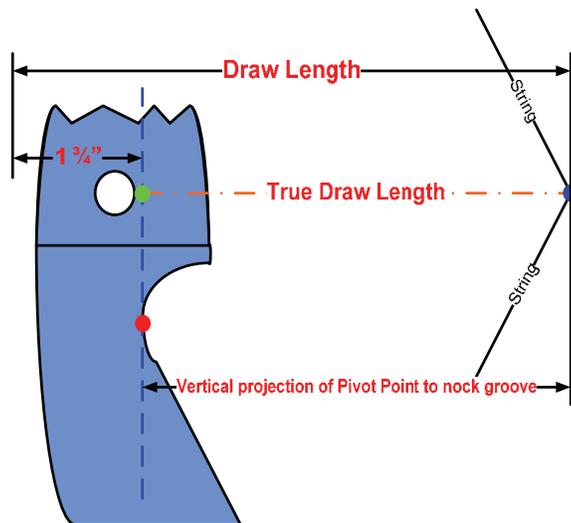


Figure 1 Draw Length Measurement Guide

**Note:** All bows are tested at 60 pounds peak draw weight and a 29" draw length (see Figure 1 for description) A tolerance was placed on both draw weight and draw length specifications as industry standards on how to measure these two items are ambiguous at best. For bows that are within these specifications straight out of the box, no modifications are made.

# Summary



Bow	Max Speed (fps)	Average Speed (fps)	Dynamic Efficiency (%)	Sound Output (dBA)	Vibration Output (g)
<b>Bear Legion</b>	<b>298.7</b>	<b>266.1</b>	<b>83.6%</b>	<b>84.5</b>	<b>196.5</b>
<b>Diamond Fugitive</b>	<b>317.4</b>	<b>281.7</b>	<b>84.4%</b>	<b>84.5</b>	<b>210.0</b>
<b>Hoyt Rampage XT</b>	<b>309.2</b>	<b>274.8</b>	<b>85.4%</b>	<b>86.2</b>	<b>131.2</b>
<b>Mission Riot</b>	<b>287.2</b>	<b>256.2</b>	<b>81.5%</b>	<b>89.6</b>	<b>168.5</b>
<b>Parker Velocity</b>	<b>296.3</b>	<b>262.3</b>	<b>81.9%</b>	<b>89.8</b>	<b>194.0</b>
<b>Quest Torrent</b>	<b>300.6</b>	<b>270.4</b>	<b>85.7%</b>	<b>84.4</b>	<b>190.5</b>
<b>Ross XD</b>	<b>279.1</b>	<b>250.1</b>	<b>75.3%</b>	<b>85.9</b>	<b>188.1</b>

# Bear Legion

## PRODUCT HIGHLIGHTS:

Replacing one of Bear's most popular models from 2011, Bear Archery designates the Legion as their mid-level offering for 2012. Like its predecessor, the Strike, the Legion possesses a compact axle-to-axle length making it maneuverable enough for duty both in a treestand or a ground blind. However, the Legion incorporates a slimmer grip, helping reduce shooter induced torque, as well as Dual Arc Offset String Suppressors, that assist with reducing string oscillation and vibration dampening. These features, along with Flared Quad Limbs, were found on Bear's flagship offerings introduced over the past several years. What does this mean? Well, it means that the archer receives field-proven technology while allowing Bear to keep both production costs and, ultimately, price to the customer down. This is reflected in the MSRP of \$399.99. Add another \$100 to the budget and customers can upgrade to the RTH (Ready to Hunt) package that includes a host of Trophy Ridge accessories. Either configuration (bare bow or RTH package), includes the new, highly adjustable E2 single cam system, that provides draw length adjustments in 1/2 inch increments from 26 to 31 inches through the use of a rotating module. This cam system rides on stainless ball bearings for increased efficiency and reliability and is a feature that is typically found on higher end offerings.

## OUT OF THE BOX ASSESSMENT:

The Legion sample that was provided for this evaluation was measured to have a brace-height of 6.930 inches, while the axle-to-axle length was measured to be 30-7/16 inches. The requested 29 inch, 60 pound model was measured straight out of the box to have a 29 inch draw length and peak draw-weight of 60.1 pounds, putting the Legion squarely within specifications straight out of the box! When shot by hand with a 300 grain arrow, the Legion achieved an average speed of 301.8 fps in the out of box configuration with only a brass nock added to the string.

## SUBJECTIVE TEST RESULTS:

### FIT & FINISH:

The Fit and Finish on the Legion sample provided for this evaluation was very good overall and substantially better than some of the finishes I've seen from Bear in the past. I certainly don't expect the finish on each bow to be perfect, but it is nice to see that Bear has continued to improve in this area. The film-dip finish looked good throughout and provided excellent coverage in the interior portion of the riser cutouts. The only blemish I was able to find were machining marks in the eccentrics, which have no impact on the performance of the bow and is only mentioned from an aesthetic perspective.

### GRIP:

Bear provides a synthetic side-plate grip on the Legion, with the contact point machined into the riser. The grip is well rounded and has enough surface area to spread out the force of the draw cycle across the shooter's hand. It offered consistent hand placement each time I drew the bow by hand, but seemed slightly susceptible to torque when I applied it. The Legion settled back nicely to a consistent position after each of the attempts to induce torque, though.

### DRAW CYCLE:

The E2 single cam system stacks gradually and smoothly on the front end of the draw cycle. After hitting peak weight, a gradual transition into let-off is provided before dropping quickly into the valley. This quick drop is certainly manageable and ends in a lengthy valley with a back wall that has a little bit of give. Letting down the legion from full draw is quite easy on the shooter, as well. On average, the Legion stores 3.63 ft-lbs. of energy for each inch that you draw it back.

### SOUND & VIBRATION:

After the shot, the top of the Legion tends to fall back toward the archer. A lightweight stabilizer should balance this out. Otherwise, there is very little felt shock and almost no residual vibration. From the shooter's perspective, the Legion's sound output seemed to be below average, thanks at least in part to the Dual Arc Offset String Suppressors.

## Bear Legion

Contact Info: Bear Archery Products

[www.beararcheryproducts.com](http://www.beararcheryproducts.com)

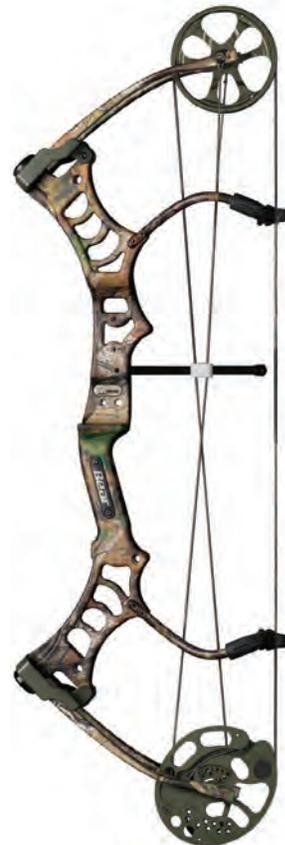
MSRP:	\$399.99	Draw Length:	26-31"
Cams:	E2 Single Cam	Draw Weight:	50-70*
Limbs:	Flared Quad Limbs	Brace Height:	7" *
Grip:	Synthetic Side-Plate	Axle to Axle:	30 1/2" *
Let-off:	80%*	Mass Weight:	4.3 ^
String:	Contra-Band		
Damping:	Dual Arc Offset String Suppressor		*Advertised
Finish:	Realtree APG HD™		^Measured

### Performance at a Glance (60.1 lbs, 29"):

Arrow	Speed	K.E.	Momentum
300 Grains	298.7	59.4	12.8
360 Grains	277.4	61.5	14.3
420 Grains	258.9	62.5	15.5
540 Grains	229.5	63.1	17.7

Arrow (Grains):	300	360	420	540
Dynamic Efficiency:	80.7%	83.4%	84.8%	85.6%
Speed Per Inch of PS:	14.7	13.6	12.7	11.3
Noise Output (dBA):	89.2	84.4	82.4	82.2
Total Vibration (G):	245.8	192.6	174.2	173.4



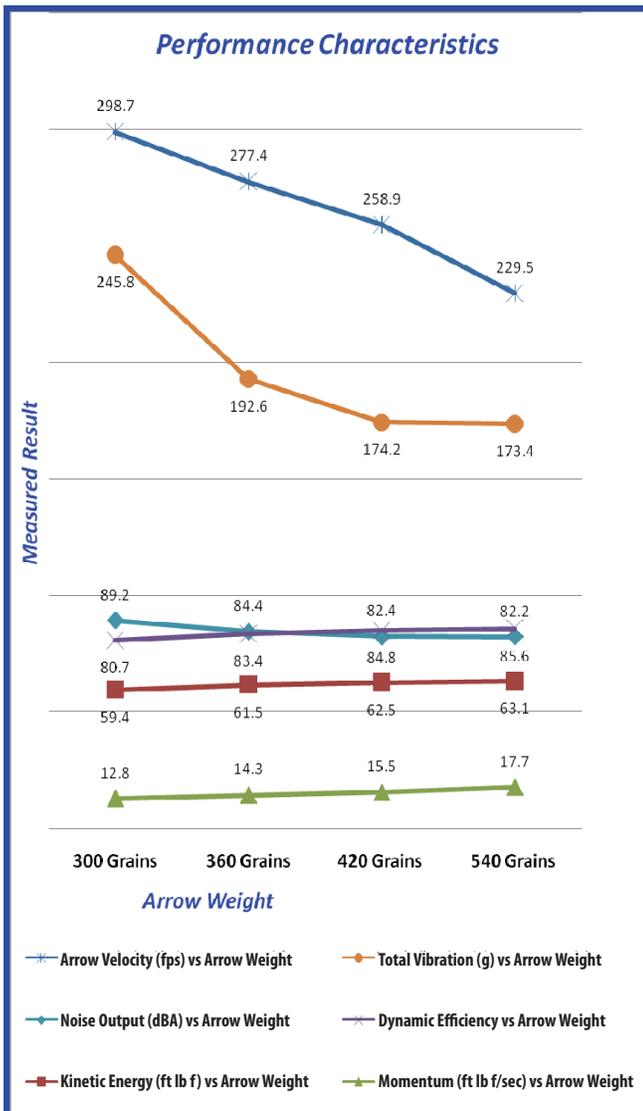
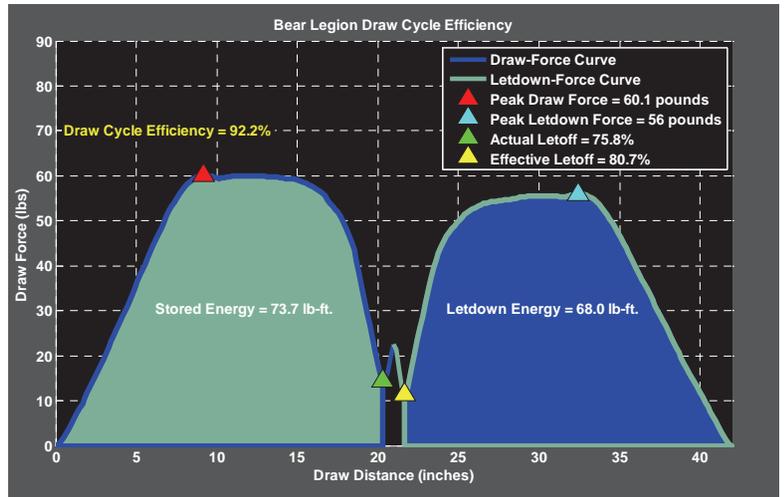
# Bear Legion

## OBJECTIVE TEST RESULTS:

### SPEED / PERFORMANCE MEASUREMENTS:

Speed measurements are made with four different arrow weights to determine the average speed of the bow per inch of Power Stroke. Draw Cycle Efficiency is calculated using the stored energy and the let-down energy captured in the Force-Draw curve. The stored energy is used further to determine the average dynamic efficiency of the bow.

**Speed per inch of Power Stroke:** 13.1  
**Dynamic Efficiency:** 83.6 percent  
**Draw Cycle Efficiency:** 92.2 percent



### VIBRATION MEASUREMENTS:

Vibration measurements are made with four different arrow weights to determine the average vibration in three dimensions as well as the total average vibration.

**Positive X-Vibration:** 65.9 g  
**Negative X-Vibration:** -62.5 g

**Positive Y-Vibration:** 164.1 g  
**Negative Y-Vibration:** -159.5 g

**Positive Z-Vibration:** 137.0 g  
**Negative Z-Vibration:** -157.7g

**Total Vibration:** 196.5 g

The addition of a 12 inch B-Stinger Pro Stabilizer with a 14 ounce weight yielded a significant reduction of peak total vibration when measured with a 360 grain arrow.

**B-Stinger Reduction:** 22.4%

### SOUND MEASUREMENTS:

Sound measurements were made with four different arrow weights to determine the average sound output, the average A-Weighted sound output (mimicking the human ear) and the average C-Weighted sound output.

**Unweighted Sound Output:** 102.9 dB  
**A-Weighted Sound Output:** 84.5 dBA  
**C-Weighted Sound Output:** 94.5 dBC



# Diamond Fugitive

## INTRODUCTION:

For 2012, Diamond continues to promote single cam technology through their mid-level model, the Fugitive. The Fugitive is built around their previously introduced Throttle Cam Technology, which is touted by Diamond to be the fastest single cam system on the market. This eccentric system moves the center of rotation for both the cam and the idler wheel off the back edge of the limb by utilizing a sealed bearing assembly that attaches to the limb tips. This system is paired with solid composite limbs to store a class leading 3.92 pounds of energy per inch of powerstroke. This level of energy storage results in advertised IBO speeds of 337 fps. The limbs are mounted to the riser using a two piece aluminum pocket, with a black powdercoat finish for added durability. With an MSRP of \$649, the Fugitive is certainly on the high end of the mid-level price point but there is a lot of value built into that price. The Fugitive comes R.A.K. equipped, which means that all accessories that attach to the bow are included within that price tag. Standing for Ready, Aim, Kill, the R.A.K. equipment comes pre-installed and sighted in at 20 yards. The accessories include a R.A.K. Custom 4-Pin Sight, a Diamond comfort wrist sling, an alloy peep sight and a BCY string loop. Accessories from Diamond's sister company, Octane, are also included – the new DeadLock Lite Octane Quiver, new 5 inch Ultra-Lite Octane Stabilizer, and Hostage XL Arrow Rest full-containment arrow rest round out the list of included accessories.

## OUT OF THE BOX ASSESSMENT:

The Fugitive sample that was provided for this evaluation was measured to have a brace-height of 6.540 inches, while the axle-to-axle length was measured to be 32 inches. The requested 29 inch, 60 pound model was measured straight out of the box to have a 29-3/16 inch draw length and peak draw-weight of 60.4 pounds. When shot by hand with a 300 grain arrow, the Fugitive achieved an average speed of 318.7 fps in the out of box configuration. Per request from Diamond, a slight adjustment was made to the limb bolts to bring the Fugitive into draw-weight specifications.

## SUBJECTIVE TEST RESULTS:

### FIT & FINISH:

The fit and finish of the Fugitive sample provided for this evaluation was very good. The grip, limbs, limb pockets, cable rod and string suppressor were all without any noticeable blemishes and exhibited tight tolerances. Small blemishes were noted on the riser, just above the string suppressor attachment point, while minor machining marks were noticed on the interior portion of the cam and idler wheel.

### GRIP:

The Fugitive has the same one-piece synthetic grip that was originally introduced to the Diamond line in 2011. This grip is smooth and comfortable with a large enough contact point to prevent any discomfort during the forces of the draw cycle. In addition, this grip should provide good thermal insulation when hunting in colder weather. My attempts to intentionally torque the bow were met with good resistance, and the Fugitive settled back to a consistent position after the torque was removed.

### DRAW CYCLE:

The draw on the Fugitive is smooth for the majority of the cycle with an excellent transition from the stacking phase to the holding phase of the draw. For me, there was a slight hesitation before a rather abrupt drop-off into the valley, though, which ends in a solid back wall. After drawing the bow several more times, the hesitation was unnoticeable. The string does want to jump forward toward the brace-height position when attempting a controlled let-down, but this force is certainly manageable. On average, the Fugitive stores 3.92 ft-lbs. of energy for each inch that you draw it back.

### SOUND & VIBRATION:

At the shot, the Fugitive produces a little bit of a "bump" in your hand as the bottom of the riser kicks forward toward the target. After the shot, the top of the bow tends to tip forward ever so slightly and there is only a little bit of high frequency vibration that is dissipated rather rapidly. This is probably due to the string suppressor and cable dampeners that are included on the bow. The sound output by the Fugitive seemed to be about average from the shooter's perspective.

## Diamond Fugitive

Contact Info: Diamond Archery

[www.diamondarchery.com](http://www.diamondarchery.com)

<b>MSRP:</b>	\$649	<b>Draw Length:</b>	26"-30" *
<b>Cams:</b>	Throttle Cam Tech	<b>Draw Weight:</b>	50-70*
<b>Limbs:</b>	Composite solid limb	<b>Brace Height:</b>	6 1/2" *
<b>Grip:</b>	Composite one-piece	<b>Axle to Axle:</b>	32" *
<b>Let-off:</b>	80%*	<b>Mass Weight:</b>	3.8 *
<b>String:</b>	Octane™ Factory Strings		
<b>Damping:</b>	String Suppressor		* Advertised
<b>Finish:</b>	Mossy Oak Treestand		^ Measured

### Performance at a Glance (60.1 lbs, 29 3/16"):

Arrow	Speed	K.E.	Momentum	
300 Grains	317.2	67.0	13.6	
360 Grains	292.1	68.2	15.0	
420 Grains	273.0	69.5	16.4	
540 Grains	244.5	71.7	18.9	
<b>Arrow (Grains):</b>	<b>300</b>	<b>360</b>	<b>420</b>	<b>540</b>
<b>Dynamic Efficiency:</b>	81.8%	83.3%	84.9%	87.5%
<b>Speed Per Inch of PS:</b>	15.2	14.0	13.1	11.7
<b>Noise Output (dBA):</b>	89.4	85.1	82.9	80.4
<b>Total Vibration (G):</b>	236.8	212.1	210.6	180.4



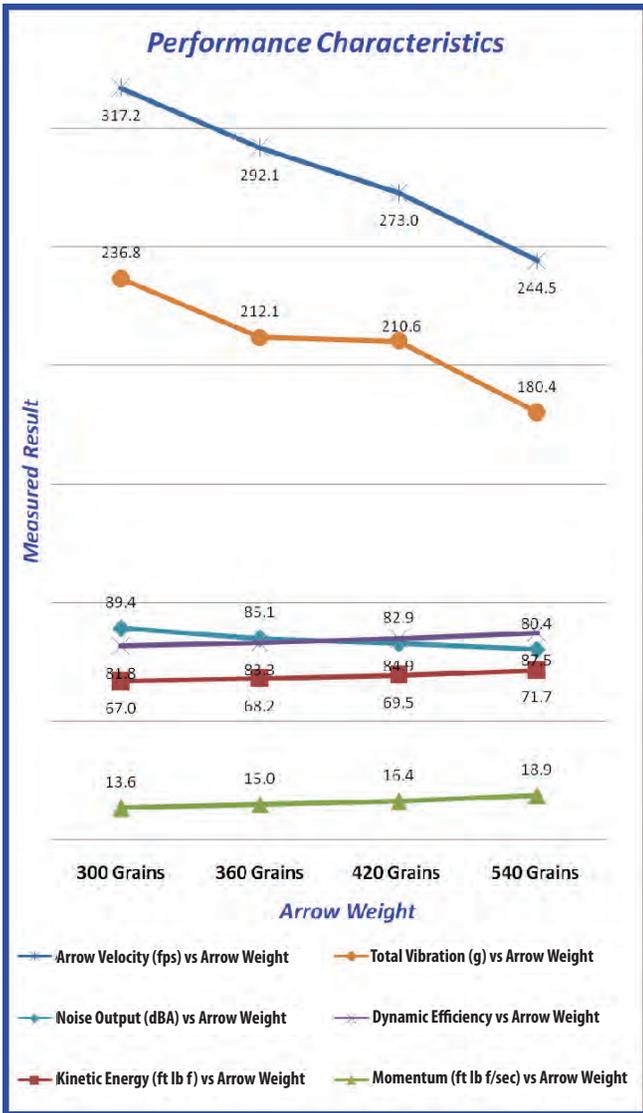
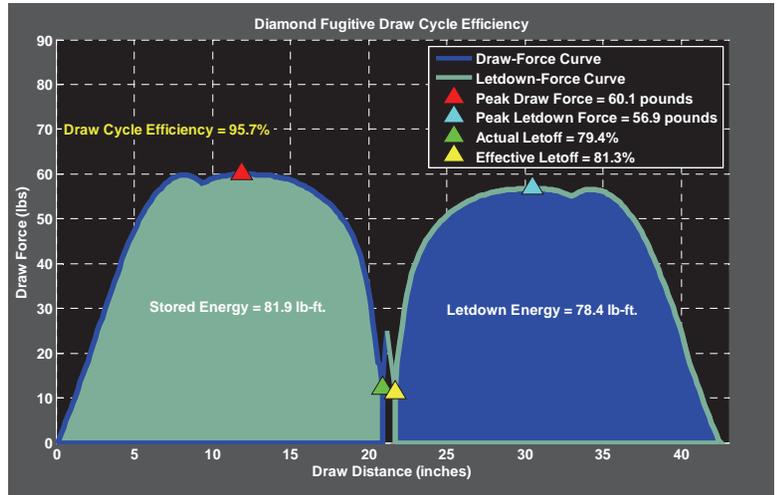
# Diamond Fugitive

## OBJECTIVE TEST RESULTS:

### SPEED / PERFORMANCE MEASUREMENTS:

Speed measurements are made with four different arrow weights to determine the average speed of the bow per inch of Power Stroke. Draw Cycle Efficiency is calculated using the stored energy and the let-down energy captured in the Force-Draw curve. The stored energy is used further to determine the average dynamic efficiency of the bow.

**Speed per inch of Power Stroke:** 13.5  
**Dynamic Efficiency:** 84.4%  
**Draw Cycle Efficiency:** 95.7%



### VIBRATION MEASUREMENTS:

Vibration measurements are made with four different arrow weights to determine the average vibration in three dimensions as well as the total average vibration.

**Positive X-Vibration:** 78.8 g  
**Negative X-Vibration:** -71.1 g

**Positive Y-Vibration:** 195.5 g  
**Negative Y-Vibration:** -188.9 g

**Positive Z-Vibration:** 103.9 g  
**Negative Z-Vibration:** -105.9 g

**Total Vibration:** 210.0 g

The addition of the 12 inch B-Stinger Pro Stabilizer with a 14 ounce weight yielded a reduction of Total Vibration when measured with a 360 grain arrow.

**B-Stinger Reduction:** 16.5%

### SOUND MEASUREMENTS:

Sound measurements were made with four different arrow weights to determine the average sound output, the average A-Weighted sound output (mimicking the human ear) and the average C-Weighted sound output.

**Unweighted Sound Output:** 103.6 dB  
**A-Weighted Sound Output:** 84.5 dBA  
**C-Weighted Sound Output:** 94.3 dBC

The addition of the 12 inch B-Stinger Pro Stabilizer with a 14 ounce weight yielded a reduction of A-Weighted sound output when measured with a 360 grain arrow.

**B-Stinger Reduction:** 0.2%

# Hoyt Rampage XT

## PRODUCT HIGHLIGHTS:

The Rampage XT is Hoyt's mid-level offering for 2012. Even though it has an MSRP of \$599, the Rampage XT uses many of the same components found on flagship models from the past. These include low-profile Pro Lock limb pockets, XTS Pro ARC split limb system, Fuel Cam & 1/2 system, In-Line roller cable guard, Silent Shelf technology, 5 layer laminated limbs, Pro-Fit 180 grip, and the Stealth Shot. The Fuel cam, Silent Shelf technology and XTS Pro ARC split limbs were first introduced in 2011 on CRX and Carbon series Hoyt bows – both of which are considered flagship offerings. In fact, by looking at the specifications there really isn't any reason why the Rampage XT shouldn't cost several hundred dollars more. So, with all of these great high-end features, how does Hoyt keep the costs down? Well, instead of the machined aluminum riser that is found on their premiere models, Hoyt developed a cast magnesium riser for use on the Rampage series, which helps reduce machining costs. Other than this, the Rampage XT is essentially the same bow as the CRX 32 and is available in RealTree AP, Blackout, Half and Half, Bone Collector, RealTree Max-1 and Vicxen hunting finishes. Note that for archers who are tall in stature, the Rampage XT is also available in a Long Draw version that spans 30-1/2 to 31 inch draw lengths. This configuration pairs XTS 1000 limbs with the Fuel cam & 1/2 system, resulting in an increased axle-to-axle length of 33 inches and an increased brace height of 7-3/4 inches.

## OUT OF THE BOX ASSESSMENT:

The Rampage XT sample that was provided for this evaluation was measured to have a brace-height of 7.150 inches, while the axle-to-axle length was measured to be 31-7/8 inches. The requested 29 inch, 60 pound model was measured straight out of the box to have a 29 inch draw length and peak draw weight of 61.8 pounds. Per request from Hoyt, the limb bolts were adjusted to bring the bow into peak draw weight specifications. When shot by hand with a 300 grain arrow, the Rampage XT achieved an average speed of 318.4 fps in the out of box configuration with only a brass nock added to the string.

## SUBJECTIVE TEST RESULTS:

### FIT & FINISH:

The fit and finish on the Rampage XT sample provided for this evaluation was very good and almost on par with past flagship offerings from Hoyt. I was not able to find any noticeable imperfections or machining marks on the black anodized components (Fuel Cam & 1/2 eccentrics, In-Line Roller Guard, and Pro Lock limb pockets). There were also no noticeable imperfections on the black "Bone Collector" limbs, but there were some minor points void of film dip finish on the riser. Tight tolerances are provided throughout.

### GRIP:

Hoyt's 180 Pro-Fit synthetic grip comes standard on the Rampage XT. With its black color and green accents, this grip matches the rest of the "Bone Collector" theme quite well; its contours fit very nicely in my hand (in fact, it is yet again one of my favorites) and offers excellent insulation qualities. The grip is smooth and comfortable and my attempts to intentionally torque the bow at full draw were met with a high amount of resistance.

### DRAW CYCLE:

The draw cycle on the Rampage XT is quite smooth but there is a slight increase in draw weight just before transitioning into the valley that makes the drop into let-off seem a bit abrupt. The draw stop peg on the Fuel Cam & 1/2 system is broader than in years past, making the back wall quite solid with only minimal give. The valley is quite substantial, as well. On average, the Rampage XT stores 3.83 ft-lbs. of energy for each inch that you draw it back.

### SOUND & VIBRATION:

At the shot, the Rampage XT exhibits only a very minor amount of jump and almost no shock at all. The bottom of the bow tends to kick forward a bit, though. After the shot, there is some noticeable residual vibration present in the handle for a short duration. The sound output from the Rampage XT seemed to be about average from the shooter's perspective.

## Hoyt Rampage XT

Contact Info: Hoyt Archery

[www.hoyt.com](http://www.hoyt.com)

<b>MSRP:</b>	\$599	<b>Draw Length:</b>	24 1/2"-30" *
<b>Cams:</b>	Fuel Cam & 1/2	<b>Draw Weight:</b>	30-80*
<b>Limbs:</b>	XTS Pro ARC Split Limb	<b>Brace Height:</b>	7" *
<b>Grip:</b>	180 Pro-fit Custom grip	<b>Axle to Axle:</b>	32" *
<b>Let-off:</b>	75%*	<b>Mass Weight:</b>	4.1 ^
<b>String:</b>	Fuse		
<b>Damping:</b>	String Shox, Alpha Shox, StealthShot®		* Advertised
<b>Finish:</b>	APG® HD, Max-1, BlackOut, Half and Half		^ Measured

### Performance at a Glance (60.1 lbs, 29"):

Arrow	Speed	K.E.	Momentum
300 Grains	309.2	63.7	13.3
360 Grains	285.9	65.3	14.7
420 Grains	266.6	66.3	16.0
540 Grains	237.3	67.5	18.3

Arrow (Grains):	300	360	420	540
Dynamic Efficiency:	82.8%	84.9%	86.2%	87.8%
Speed Per Inch of PS:	15.4	14.2	13.3	11.8
Noise Output (dBA):	89.5	86.5	84.5	84.3
Total Vibration (G):	137.0	135.9	134.4	117.5



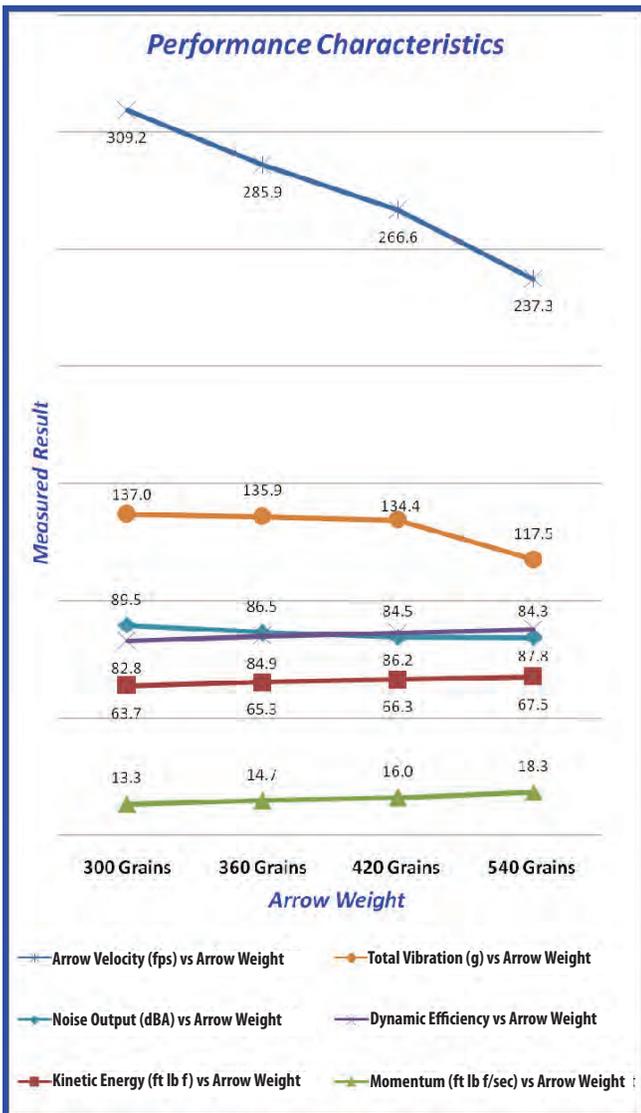
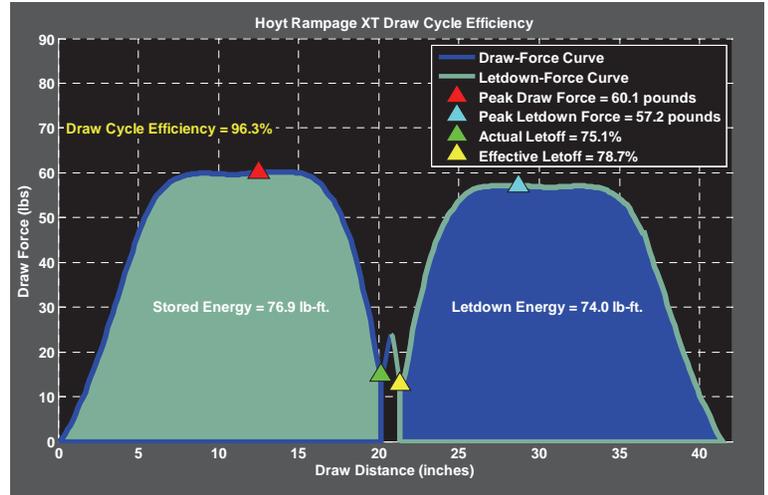
# Hoyt Rampage XT

## OBJECTIVE TEST RESULTS:

### SPEED / PERFORMANCE MEASUREMENTS:

Speed measurements are made with four different arrow weights to determine the average speed of the bow per inch of Power Stroke. Draw Cycle Efficiency is calculated using the stored energy and the let-down energy captured in the Force-Draw curve. The stored energy is used further to determine the average dynamic efficiency of the bow.

- Speed per inch of Power Stroke:** 13.7
- Dynamic Efficiency:** 85.4 percent
- Draw Cycle Efficiency:** 96.3 percent



### VIBRATION MEASUREMENTS:

Vibration measurements are made with four different arrow weights to determine the average vibration in three dimensions as well as the total average vibration.

- Positive X-Vibration:** 58.0 g
- Negative X-Vibration:** -47.7 g
- Positive Y-Vibration:** 103.9 g
- Negative Y-Vibration:** -128.4 g
- Positive Z-Vibration:** 69.2 g
- Negative Z-Vibration:** -59.4 g

**Total Vibration:** 131.2 g

The addition of the 12 inch B-Stinger Pro Stabilizer with a 14 ounce weight yielded a reduction of peak total vibration when measured with a 360 grain arrow.

**B-Stinger Reduction:** 18.4%

### SOUND MEASUREMENTS:

Sound measurements were made with four different arrow weights to determine the average sound output, the average A-Weighted sound output (mimicking the human ear) and the average C-Weighted sound output.

- Unweighted Sound Output:** 103.7 dB
- A-Weighted Sound Output:** 86.2 dBA
- C-Weighted Sound Output:** 94.9 dBC

The addition of the 12 inch B-Stinger Pro Stabilizer with a 14 ounce weight yielded a reduction of peak A-weighted sound Output when measured with a 360 grain arrow.

**B-Stinger Reduction:** 1.4%

# Mission Riot

## PRODUCT HIGHLIGHTS:

With the Riot as their mid-level offering for 2012, Mission Archery has expanded upon the success of their highly adjustable Craze and created a faster, longer, and more forgiving shooting package. The Riot is versatile enough to fit even the youngest archers while maintaining ample performance for more seasoned shooters. The Riot can be set to a 19 inch draw length, which has a corresponding minimum draw weight of 15 pounds and reaches its maximum draw weight of 70 pounds at the 25-30 inch draw length settings. This is all possible without changing out limbs or eccentrics! In fact, there's an average of 39 pounds of draw weight adjustment at each draw length setting. This is due to the use of an extra deep limb pocket, and dual rotating modules on the eccentrics. These modules offer adjustment in 1 inch increments without the use of a bow press. Production costs, and therefore the end-user suggested price of \$399, are kept in check by cutting back in key areas that don't sacrifice performance. The limb pockets and modules are made of a synthetic material, reducing machining and finishing costs. The eccentrics rotate on Teflon bearings, which are less expensive to produce than sealed bearings. These types of bearings have been used in a similar manner for years, but they can be a wear point. In addition, machining costs are further reduced through the use of an extruded riser – the extrusion closely mimics the final shape of the riser reducing both the time needed to do the machining as well as the overall amount of material used on the riser. But, the Riot does incorporate some of the features found on higher-end Mission bows including D-Amplifiers, Zebra Hybrid string and cables, and a Dead-End String Stop. The Riot comes standard in Lost Camo AT, Lost Camo AT Pink and Black finishes with nine other custom finish options for a slight up-charge.

## OUT OF THE BOX ASSESSMENT:

The Riot sample that was provided for this evaluation was measured to have a brace-height of 6.950 inches, while the axle-to-axle length was measured to be 31 inches. The requested 29 inch, 60 pound model was measured straight out of the box to have a 29-1/4 inch draw length and peak draw weight of 59.6 pounds. Per request from Mission, the limb bolts were adjusted to bring the Riot into peak draw weight specifications. When shot by hand with a 300 grain arrow, the Riot achieved an average speed of 291.7 fps in the out of box configuration with only a brass nock added to the string.

## SUBJECTIVE TEST RESULTS:

### FIT & FINISH:

The finish of the Riot sample provided for this evaluation was quite good with only a minimal amount of imperfections noted. The Lost Camo AT finish on the riser and limbs was good with excellent coverage of the interior portion of the riser cutouts. The synthetic limb pocket and modules were free of blemishes and no machining marks were evident on the eccentrics. Finally, there was no noticeable fraying or serving separation on the string and cables.

### GRIP:

The Riot has a slim one-piece synthetic grip that is comfortable in my hand. The texture in the synthetic material should help keep the bow from slipping. At full draw, my attempts to intentionally induce torque into the handle of the bow were met with good resistance, and the Riot settled back to a consistent position after the torque was removed.

### DRAW CYCLE:

The draw cycle on the Riot is one of the smoothest I've felt in a long time. This is probably due to the very non-aggressive nature of the cam profile combined with a gradual stacking phase and a long transition into let-off. The valley is quite lengthy with a substantial amount of give in the back wall. On average, the Riot stores 3.41 ft-lbs. of energy for each inch that you draw it back.

### SOUND & VIBRATION:

When shooting this bow by hand, I noticed that the bow wanted to kick forward just a bit. After the shot, the top of the bow tends to fall away from the shooter, as well. But overall, the Riot is quite tame and there is very little residual vibration after the shot. From the shooter's perspective, the Riot seemed to be a little bit on the loud side.

## Mission Riot

### Contact Info: Mission Archery

[www.MissionArchery.com](http://www.MissionArchery.com)

<b>MSRP:</b>	\$399	<b>Draw Length:</b>	19"-30" *
<b>Cams:</b>	Dual/Adjustable	<b>Draw Weight:</b>	15- 70*
<b>Limbs:</b>	Split Limb	<b>Brace Height:</b>	7" *
<b>Grip:</b>	Composite one piece	<b>Axle to Axle:</b>	31" *
<b>Let-off:</b>	80%*	<b>Mass Weight:</b>	4.4 ^
<b>String:</b>	Zebra® Hybrid		
<b>Damping:</b>	D-Amplifier™, Dead End™ String Stop		*Advertised
<b>Finish:</b>	Lost Camo® AT		^Measured

### Performance at a Glance (60.1 lbs, 29 1/4"):

Arrow	Speed	K.E.	Momentum
300 Grains	287.23	54.9	12.3
360 Grains	266.1	56.6	13.7
420 Grains	248.7	57.7	14.9
540 Grains	222.7	59.4	17.2

<b>Arrow (Grains):</b>	<b>300</b>	<b>360</b>	<b>420</b>	<b>540</b>
<b>Dynamic Efficiency:</b>	78.4%	80.5%	82.3%	84.8%
<b>Speed Per Inch of PS:</b>	14.0	12.9	12.1	10.8
<b>Noise Output (dBA):</b>	91.4	90.2	89.4	87.5
<b>Total Vibration (G):</b>	215.1	176.4	153.1	129.4



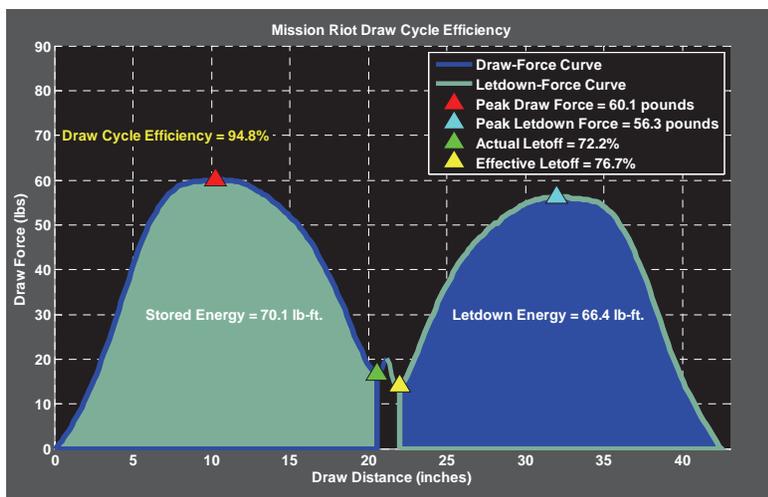
# Mission Riot

## OBJECTIVE TEST RESULTS:

### SPEED / PERFORMANCE MEASUREMENTS:

Speed measurements are made with four different arrow weights to determine the average speed of the bow per inch of Power Stroke. Draw Cycle Efficiency is calculated using the stored energy and the let-down energy captured in the Force-Draw curve. The stored energy is further used to determine the average dynamic efficiency of the bow.

**Speed per inch of Power Stroke:** 12.5  
**Dynamic Efficiency:** 81.5 percent  
**Draw Cycle Efficiency:** 94.8 percent



### Performance Characteristics



— Arrow Velocity (fps) vs Arrow Weight    — Total Vibration (g) vs Arrow Weight  
 — Noise Output (dBA) vs Arrow Weight    — Dynamic Efficiency vs Arrow Weight  
 — Kinetic Energy (ft lb f) vs Arrow Weight    — Momentum (ft lb f/sec) vs Arrow Weight

### VIBRATION MEASUREMENTS:

Vibration measurements are made with four different arrow weights to determine the average vibration in three dimensions as well as the total average vibration.

**Positive X-Vibration:** 64.4 g  
**Negative X-Vibration:** -60.5 g  
**Positive Y-Vibration:** 146.6 g  
**Negative Y-Vibration:** -156.9 g  
**Positive Z-Vibration:** 87.0 g  
**Negative Z-Vibration:** -115.1g

**Total Vibration:** 168.5 g

### SOUND MEASUREMENTS:

Sound measurements were made with four different arrow weights to determine the average sound output, the average A-Weighted sound output (mimicking the human ear) and the average C-Weighted sound output.

**Unweighted Sound Output:** 104.3 dB  
**A-Weighted Sound Output:** 89.6 dBA  
**C-Weighted Sound Output:** 96.1 dBC



# Parker Velocity

## INTRODUCTION:

Parker Bows introduces the Velocity as their mid-level offering for the 2012 model year. With an MSRP of \$399.95, the Velocity is light on the pocket-book but heavy on features. In fact, it has many of the same features found on previous flagship offerings from Parker. These features include a roller cable guard, a deluxe tunable string suppressor, an integrated wrist sling, and extreme parallel limb design. In addition, the two piece deep walnut finish grip is maintained from 2011 and all Parker Bows feature premium Stone Mountain strings and cables. New features include the Velocity High Performance Single Cam, which provides modular draw length adjustments from 26 to 31 inches and a tunable draw stop for precision draw length and valley refinement. The split limbs that are paired with this eccentric system are mated to Fulcrum pockets, which help to minimize lateral movement throughout the draw cycle by supporting the limbs well behind the attachment point to the riser. These limbs provide a full 20 pounds of draw weight adjustment, from 50 to 70 pounds, without the need for a bow press. The Velocity is also available in the Outfitter Package, which includes a four arrow quick detach quiver, three pin fiber optic sight, an angled peep sight and a choice between a Whisker Biscuit or Hostage style rest, all for a small up-charge of \$100.

## OUT OF THE BOX ASSESSMENT:

The Velocity sample that was provided for this evaluation was measured to have a brace-height of 7.110 inches, while the axle-to-axle length was measured to be 30-1/8 inches. The requested 29 inch, 60 pound model was measured straight out of the box to have a 29-1/2 inch draw length and peak draw-weight of 59.8 pounds. When shot by hand with a 300 grain arrow, the Velocity achieved an average speed of 295.4 fps in the out of box configuration with only a brass nock added to the string. Per request from Parker, the control cable was twisted and the draw stop was adjusted to bring both the draw weight and draw length into specification.

## SUBJECTIVE TEST RESULTS:

### FIT & FINISH:

While it does lack some of the refinement and contours of other models in this segment, the fit and finish on the Velocity sample provided for this evaluation was very good with only minor blemishes noted. The film-dip finish on the riser had a slight bump on the inside of the riser near the sight window as well as just below the string suppressor. I also noticed some chipping in the area where the barrel nut that is used to secure the limb bolts is inserted into the riser. Otherwise, the anodized finish and machining of the limb pockets, eccentrics and string suppressor looked excellent.

### GRIP:

As was the case with Parker's 2011 flagship model, the Inferno, the Velocity comes standard with a two piece side plate grip that features a walnut finish. This grip is quite comfortable and its smooth contours fit my hand nicely. The contact area is big enough to ensure that no discomfort is experienced during the draw cycle, but small enough to ensure a repeatable shot. My attempts to intentionally torque the bow at full draw were met with a high amount of resistance.

### DRAW CYCLE:

The draw cycle on the Velocity is smooth throughout with excellent transitions from the stacking to holding and holding to let-off phases. There aren't any noticeable humps or hesitations and the transition into the valley is gradual in nature, ending in a solid back wall with little give. This is due at least in part to the adjustable draw stop that contacts the bottom limb at full draw and allows the archer to fine-tune both draw length and let-off. On average, the Velocity stores 3.59 ft-lbs. of energy for each inch that you draw it back.

### SOUND & VIBRATION:

The Velocity jumps a bit at the shot with the bottom kicking forward toward the target. If viewed from the top, the Velocity also tends to rotate counter-clockwise just a bit. A lightweight stabilizer should take care of this movement. A low level, high frequency vibration is also felt for a moderate duration after the shot.

## Parker Velocity

Contact Info: Parker Bows

[www.parkerbows.com](http://www.parkerbows.com)

MSRP:	\$399.95	Draw Length:	26"-31" *
Cams:	Velocity High Perf. Cam	Draw Weight:	50-70*
Limbs:	Extreme Parallel Limbs	Brace Height:	7 1/4" *
Grip:	2 piece Walnut Finish Grip	Axle to Axle:	30 1/8" *
Let-off:	80%*	Mass Weight:	4.2 ^
String:	Premium Stone Mountain		
Damping:	Tunable String Suppressor		*Advertised
Finish:	RealTree Advantage Timber		^Measured

### Performance at a Glance (60.1 lbs, 29 1/4"):

Arrow	Speed	K.E.	Momentum
300 Grains	296.3	58.5	12.7
360 Grains	272.2	59.2	14.0
420 Grains	254.0	60.2	15.2
540 Grains	226.5	61.5	17.5

Arrow (Grains):	300	360	420	540
Dynamic Efficiency:	80.0%	81.0%	82.3%	84.1%
Speed Per Inch of PS:	14.5	13.4	12.5	11.1
Noise Output (dBA):	91.7	91.1	90.5	86.0
Total Vibration (G):	225.6	211.5	188.5	150.4



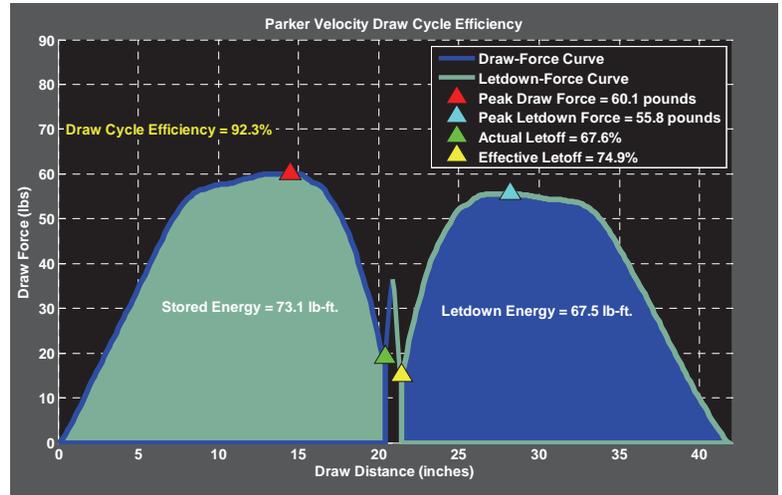
# Parker Velocity

## OBJECTIVE TEST RESULTS:

### SPEED / PERFORMANCE MEASUREMENTS:

Speed measurements are made with four different arrow weights to determine the average speed of the bow per inch of Power Stroke. Draw Cycle Efficiency is calculated using the stored energy and the let-down energy captured in the Force-Draw curve. The stored energy is used further to determine the average dynamic efficiency of the bow.

**Speed per inch of Power Stroke:** 12.9  
**Dynamic Efficiency:** 81.9 percent  
**Draw Cycle Efficiency:** 92.3 percent



### VIBRATION MEASUREMENTS:

Vibration measurements are made with four different arrow weights to determine the average vibration in three dimensions as well as the total average vibration.

**Positive X-Vibration:** 56.3 g  
**Negative X-Vibration:** -59.8 g

**Positive Y-Vibration:** 123.5 g  
**Negative Y-Vibration:** -113.1 g

**Positive Z-Vibration:** 173.8 g  
**Negative Z-Vibration:** -147.9 g

**Total Vibration:** 194.0 g

The addition of the 12 inch B-Stinger Pro Stabilizer with a 14 ounce weight yielded a reduction of Total Vibration when measured with a 360 grain arrow.

**B-Stinger Reduction:** 21.6%

### SOUND MEASUREMENTS:

Sound measurements were made with four different arrow weights to determine the average sound output, the average A-Weighted sound output (mimicking the human ear) and the average C-Weighted sound output.

**Unweighted Sound Output:** 105.5 dB  
**A-Weighted Sound Output:** 89.8 dBA  
**C-Weighted Sound Output:** 97.3 dBC

The addition of the 12 inch B-Stinger Pro Stabilizer with a 14 ounce weight yielded a reduction of A-Weighted sound output when measured with a 360 grain arrow.

**B-Stinger Reduction:** 2.9%

# Quest Torrent

## PRODUCT HIGHLIGHTS:

Quest Bowhunting has revamped its single cam eccentric to provide both a smooth and consistent draw cycle. The resulting Fluid Cam is utilized on two of the bows in their 2012 lineup, including the Torrent, which is designated as Quest's mid-level offering. This cam system rotates on fully sealed, stainless steel bearings and provides adjustability in 1/2 inch increments from 25-1/2 to 30 with a rotating module; all draw lengths are built right in and no bow press is required! Machined aluminum pivoting limb pockets, a fully adjustable string suppressor, a broadhead guard and BowJax limb silencers all come standard on the Torrent. Meanwhile the I-Glide Cable System that was originally introduced in Quest's 2009 lineup provides consistent, near-friction-free cable routing with no moving parts. This is achieved through the use of coated ceramic slides, which are integrated into the cable containment assembly and are stationary at all points of the shot sequence. As you can tell, there are many upscale features packed into this bow. The corresponding MSRP of \$529.99 places the Torrent on the high end of the "mid-level" price point. But, to be fair, though, other than recycling some technology that has been used in the past, it's unclear how Quest is able to keep their costs low enough to provide the Torrent at this price. The same level of craftsmanship, quality, and attention to detail that is used on their more expensive flagship models is also found in the Torrent. Regardless, the Torrent packs a lot of bang for the buck.

## OUT OF THE BOX ASSESSMENT:

The Torrent sample that was provided for this evaluation was measured to have a brace-height of 7.125 inches, while the axle-to-axle length was measured to be 31 inches. The requested 29 inch, 60 pound model was measured straight out of the box to have a 29 inch draw length and peak draw-weight of 61.9 pounds. When shot by hand with a 300 grain arrow, the Torrent achieved an average speed of 309.0 fps in the out of box configuration with only a brass nock added to the string. Per request from G5, the limb bolts were adjusted to bring the draw weight into specification.

## SUBJECTIVE TEST RESULTS:

### FIT & FINISH:

Year after year, G5 provides excellent fit and finish on its products. The 2012 Torrent in the Quest line is no exception. The G-Fade finish starts out in RealTree AP camo on the limbs and end of the riser and transitions smoothly to a matte black finish at the center of the bow; no blemishes were noted. The machining on the riser is just about flawless and all edges are rounded providing a sense of refinement that isn't typically found on mid-level bows. Only minor machining marks were noted on the interior portion of the eccentrics.

### GRIP:

The Torrent comes with a two piece synthetic side-plate grip that is black in color, which blends in well with the G-Fade sample provided for this evaluation. This grip is made of an anti-slip resin material credited with repelling odor while providing a secure grip for all hunting conditions. The contours of the side-plates help to provide consistent hand placement, while the contact area at the back of the bow is quite comfortable. My attempts to intentionally apply torque were met with a substantial amount of resistance.

### DRAW CYCLE:

The draw cycle on the Torrent starts out smoothly with a bit of a hump before plateauing near peak draw weight. The transition into the valley is quite good with no noticeable increase in resistance. The cycle ends in a deep, short valley with a very solid back wall. This is mainly due to the draw stop that contacts the limb at the end of the cycle. On average, the Torrent stores 3.70 ft-lbs. of energy for each inch that you draw it back.

### SOUND & VIBRATION:

At the shot, the Torrent exhibits a noticeable jump forward and also provides a solid bump to the hand. There is very little residual vibration, however. It tends to remain in a neutral position after the shot; it does not want to tip in any particular direction. A quality stabilizer could help to tame the Torrent at the shot. Sound output seems to be average to a little above average from the shooter's perspective.

## Quest Torrent

Contact Info: Quest Bowhunting

[www.QuestBowhunting.com](http://www.QuestBowhunting.com)

<b>MSRP:</b>	\$529.99	<b>Draw Length:</b>	25 1/2"-30" *
<b>Cams:</b>	Fluid Cam™	<b>Draw Weight:</b>	50-70*
<b>Limbs:</b>	13" Composite Solid Limb	<b>Brace Height:</b>	7" *
<b>Grip:</b>	Anit-Slip Black Resin	<b>Axle to Axle:</b>	31" *
<b>Let-off:</b>	80%*	<b>Mass Weight:</b>	4.5 ^
<b>String:</b>	BCY 452x		
<b>Damping:</b>	BowJax LimbJax, Adjustable String Stop		* Advertised
<b>Finish:</b>	Realtree AP, G-Fade		^ Measured

## Performance at a Glance (60.1 lbs, 29"):

Arrow	Speed	K.E.	Momentum
300 Grains	300.6	60.2	12.9
360 Grains	282.4	63.7	14.5
420 Grains	263.5	64.7	15.8
540 Grains	235.2	66.3	18.1

Arrow (Grains):	300	360	420	540
Dynamic Efficiency:	80.9%	85.7%	87.0%	89.2%
Speed Per Inch of PS:	14.9	14.0	13.1	11.7
Noise Output (dBA):	87.9	84.9	83.4	81.5
Total Vibration (G):	254.3	195.4	168.6	143.5



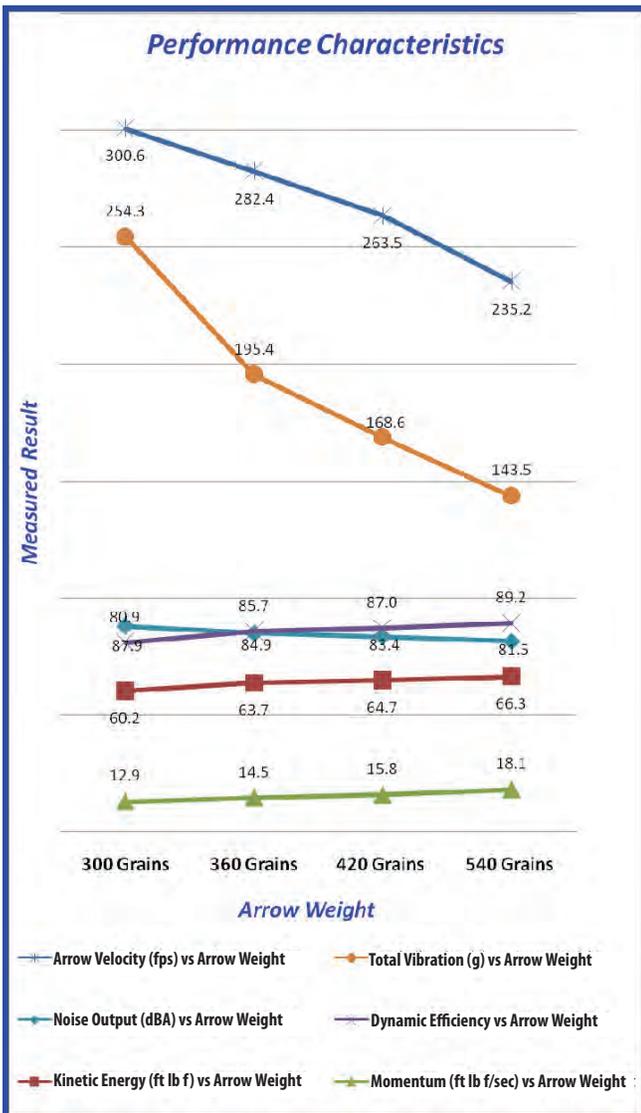
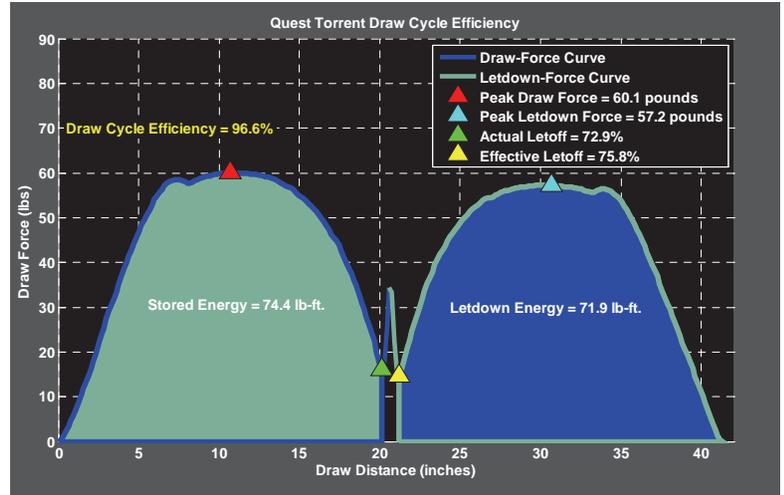
# Quest Torrent

## OBJECTIVE TEST RESULTS:

### SPEED / PERFORMANCE MEASUREMENTS:

Speed measurements are made with four different arrow weights to determine the average speed of the bow per inch of Power Stroke. Draw Cycle Efficiency is calculated using the stored energy and the let-down energy captured in the Force-Draw curve. The stored energy is used further to determine the average dynamic efficiency of the bow.

**Speed per inch of Power Stroke:** 13.4  
**Dynamic Efficiency:** 85.7 percent  
**Draw Cycle Efficiency:** 96.6 percent



### VIBRATION MEASUREMENTS:

Vibration measurements are made with four different arrow weights to determine the average vibration in three dimensions as well as the total average vibration.

**Positive X-Vibration:** 105.1 g  
**Negative X-Vibration:** -92.3 g  
**Positive Y-Vibration:** 143.2 g  
**Negative Y-Vibration:** -170.8 g  
**Positive Z-Vibration:** 103.1 g  
**Negative Z-Vibration:** -99.3 g  
**Total Vibration:** 190.5 g

### SOUND MEASUREMENTS:

Sound measurements were made with four different arrow weights to determine the average sound output, the average A-Weighted sound output (mimicking the human ear) and the average C-Weighted sound output.

**Unweighted Sound Output:** 102.5 dB  
**A-Weighted Sound Output:** 84.4 dBA  
**C-Weighted Sound Output:** 93.4 dBC



# Ross XD

## INTRODUCTION:

After a short hiatus, I am pleased to include Ross Archery in my lineup of evaluations for 2012. Ross's return to the archery marketplace in 2011 brought with it several new bows, including the XD which is designated as their mid-level model. The XD, which stands for Xtreme Devastation, is built on a riser platform that is made of fully machined aluminum. Ross' engineers have found a way to maintain structural integrity while producing a riser that is thinner near the limb pocket attachment point than I've seen on any other bow. The two-piece aluminum limb pockets, consisting of a limb bolt/containment piece and a limb support, are securely fastened here and provide a tight fitting support for the limbs. These limbs are paired with a single cam eccentric system to act as the powerplant for the XD. The cam provides modular draw-length adjustability and a tunable draw stop, allowing the archer to find the sweet spot for both draw length and let-off settings. DRT riser dampeners along with Sims dampening products, which are installed on the string and adjustable string suppressor, help to reduce felt recoil and vibration. Finally, Ross offers one of the best warranties in the business. Their "Lifetime means Lifetime" guarantee is fully transferrable from owner to owner and covers the riser, eccentrics, limbs, and limb pockets. The string and cable also come with an 18 month guarantee against peep sight rotation.

## OUT OF THE BOX ASSESSMENT:

The XD sample that was provided for this evaluation was measured to have a brace-height of 7.375 inches, while the axle-to-axle length was measured to be 30-3/16 inches. The requested 29 inch, 60 pound model was measured straight out of the box to have a 29-1/2 inch draw length and peak draw-weight of 60.1 pounds. When shot by hand with a 300 grain arrow, the XD achieved an average speed of 279.9 fps in the out of box configuration. Per request from Ross, a slight adjustment was made to the adjustable draw stop to bring the XD into draw length specification.

## SUBJECTIVE TEST RESULTS:

### FIT & FINISH:

The fit and finish of the XD sample provided for this evaluation was good overall. The anodized finish on the limb pockets, string suppressor, and eccentrics was excellent with only minor machining marks noted on the interior portion of the cam. The grip and limbs were also without any noticeable blemishes and the limbs fit snugly into their supports. Small blemishes were noted on the riser, just below the sight window as well as in the machined areas that are provided for quiver mounting.

### GRIP:

A two piece side-plate grip with carbon fiber finish is included as standard equipment on the XD. This grip is smooth and comfortable with a large enough contact point to prevent any discomfort during the forces of the draw cycle. The contours of the side-plates mate up well with the riser giving a seamless transition to the contact area. My attempts to intentionally torque the bow were met with good resistance, and the XD settled back to a consistent position after the torque was removed.

### DRAW CYCLE:

This is the area where the XD really shines. The draw cycle on the XD is very smooth throughout with excellent transitions through each phase. The stacking phase is very gradual and the drop into the valley is without hesitation or surprise. The draw cycle ends in a substantial valley with a solid back wall, which can be attributed to an adjustable limb contact draw stop that can be used to fine-tune both draw length and let-off. On average, the XD stores 3.60 ft-lbs. of energy for each inch that you draw it back.

### SOUND & VIBRATION:

At the shot, the bow provides a moderate "bump" in the hand and the bottom of the riser wants to jump forward, toward the target, just a bit. But, there is very little, if any, residual vibration felt in the handle after the shot. From my perspective, this bow seems to be quite quiet. The string, riser, and limb dampeners that are included on the XD help to contribute to this quiet shot.

## Ross XD

### Contact Info: Ross Archery

[www.rossarchery.com](http://www.rossarchery.com)

<b>MSRP:</b>	\$524.99	<b>Draw Length:</b>	25"-30" *
<b>Cams:</b>	Single Cam	<b>Draw Weight:</b>	50-70*
<b>Limbs:</b>	Composite solid limb	<b>Brace Height:</b>	7 1/2" *
<b>Grip:</b>	2-Piece Slim Line	<b>Axle to Axle:</b>	30 1/2" *
<b>Let-off:</b>	80%*	<b>Mass Weight:</b>	3.5 ^
<b>String:</b>	JBK Custom String & Cable		
<b>Damping:</b>	String Suppressor, DRT Riser Dampeners *Advertised		
<b>Finish:</b>	Realtree AP, Stealth Black ^ Measured		

### Performance at a Glance (60.1 lbs, 29 1/2"):

Arrow	Speed	K.E.	Momentum
300 Grains	279.1	51.9	12.0
360 Grains	260.1	54.1	13.4
420 Grains	243.1	55.1	14.6
540 Grains	217.9	56.9	16.8

Arrow (Grains):	300	360	420	540
Dynamic Efficiency:	71.7%	74.7%	76.1%	78.6%
Speed Per Inch of PS:	13.9	12.9	12.1	10.8
Noise Output (dBA):	88.3	85.6	84.9	84.7
Total Vibration (G):	246.2	211.6	166.5	128.1



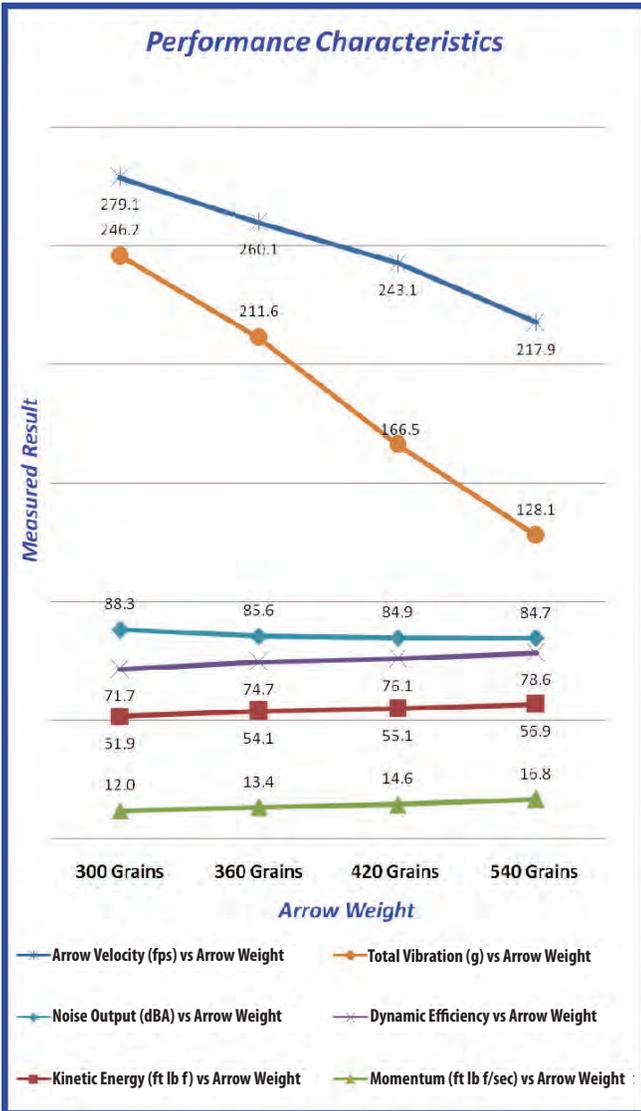
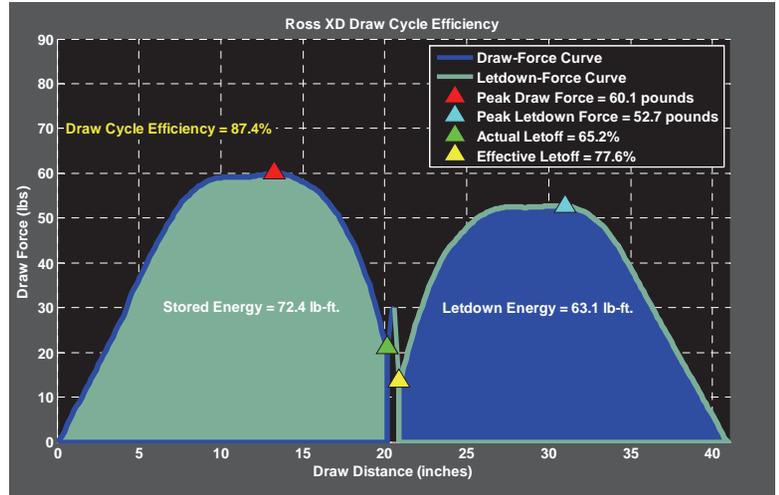
# Ross XD

## OBJECTIVE TEST RESULTS:

### SPEED / PERFORMANCE MEASUREMENTS:

Speed measurements are made with four different arrow weights to determine the average speed of the bow per inch of Power Stroke. Draw Cycle Efficiency is calculated using the stored energy and the let-down energy captured in the Force-Draw curve. The stored energy is used further to determine the average dynamic efficiency of the bow.

- Speed per inch of Power Stroke:** 12.4
- Dynamic Efficiency:** 75.3 percent
- Draw Cycle Efficiency:** 87.4 percent



### VIBRATION MEASUREMENTS:

Vibration measurements are made with four different arrow weights to determine the average vibration in three dimensions as well as the total average vibration.

- Positive X-Vibration:** 56.1 g
- Negative X-Vibration:** -58.6 g
- Positive Y-Vibration:** 176.1 g
- Negative Y-Vibration:** -176.2 g
- Positive Z-Vibration:** 130.8 g
- Negative Z-Vibration:** -112.9 g

**Total Vibration:** 188.1 g

The addition of the 12 inch B-Stinger Pro Stabilizer with a 14 ounce weight yielded a reduction of Total Vibration when measured with a 360 grain arrow.

**B-Stinger Reduction:** 10.5%

### SOUND MEASUREMENTS:

Sound measurements were made with four different arrow weights to determine the average sound output, the average A-Weighted sound output (mimicking the human ear) and the average C-Weighted sound output.

- Unweighted Sound Output:** 102.3 dB
- A-Weighted Sound Output:** 85.9 dBA
- C-Weighted Sound Output:** 93.9 dBC

The addition of the 12 inch B-Stinger Pro Stabilizer with a 14 ounce weight yielded a reduction of A-Weighted sound output when measured with a 360 grain arrow.

**B-Stinger Reduction:** 0.7%

## Safeguard Your Employees

From the moment they walk in the door until their shift ends your employees typically work in a safe and efficient manner. How do they do it? The answer lies in the safety training they receive from you, their employer.

For the next few pages I will try to provide you with an understanding of employee safety plans, how the laws and regulations might apply to you as an employer, and I will offer you some resources available to you to help bring, and keep, you in compliance with your state's OSHA laws.

When I first approached this magazine's editor about this article I wasn't sure what tone the article should take. After doing some research I soon discovered the best approach would be to offer some helpful advice while trying to show you why it is important to you to get your own employee safety plan together.

Most of us are good at our chosen profession while at the same time we might lack skill at those chores which are not directly beneficial to our efforts. Kind of like me with tracking my expenses; if it isn't directly related to putting down the written word then I will probably fail to do it. At best, I'll get to it later. But most likely I will lose the receipt for the printer supplies I just bought before I enter the expense in my ledger!

That's fine for me because I lose only a couple dollars in a write-off, but it's a bit more pressing for you to attend to the task of creating an employee safety plan for your workplace, not only to provide for a safer workplace,

but also to be sure you are in compliance with your state's OSHA laws and to avoid the not-inconsequential fines which accompany a citation for failure to have a safety plan and to provide the safe work environment required by OSHA rules and regulations.

In every state there is a level of employee safety law with which employers must comply. Whether you are a manufacturer of bows, accessories or arrows, or even if you are a mom and pop archery retailer with only a part-time employee there is a set of OSHA laws which require your attention - whether it is with your state's OSHA agency or federal OSHA regulations.

The federal government has the Occupational Safety and Health Administration; California has the Division of Occupational Safety and Health, and other states have Industrial Relations Boards or some variation with such words as Occupational Safety, Safety and Health, Labor Relations or Enforcement, or even Worker's Compensation.

In order to determine exactly what is required of you in your home state you will want to find out the name of your state agency administering your employee safety laws, after you finish this article.

As I bring you painlessly up to speed on this subject I'll be using examples from a state which has some rather comprehensive regulations. Your state might have more or less restrictive requirements but I use this reference because their Injury and Illness Prevention Program (IIPP) requirements are said to reduce that state's employee injury rate by as much as 50

percent. Yes, the requirements might be a bit demanding upon the employer, but if it will save your employees from future injuries or illness then that can only be good for you.

Consider that employee injury and illness costs you money in one form or another. The fewer workplace injuries your employees have the better off you are financially, whether through direct costs or through increased worker's comp premiums!

So what are these employee safety laws and plans all about? Let's begin with the laws.

### Its The Law

It is basically recognized that employers must provide a safe workplace for employees. This is accomplished by a combination of identifying potential hazards in the workplace, making both physical and process-oriented adjustments to correct imminent and/or potential hazards, and also by training your employees in safe-work practices. The federal Occupational Safety and Health Administration has reams of regulations which must be followed according to the industry one is in. For the most part, you are regulated by your state's independent OSHA-type agency, so I'll not bore you with federal OSHA regulations. Instead, we'll focus on the general state standards.

The archery and bowhunting industry (whether you are a manufacturer, distributor or retailer) is generally required to comply with state law protecting the health and safety of employees, and any federal regulations you need to pay attention to are embodied within your state laws and administrative regulations.

The Injury and Illness Prevention Program requirements I use as the examples here provides that every employer must have an IIPP complying with the following elements:

#### Employee Safety Plan Bowhunters Pro Shop

Introduction: It is the responsibility of each employee to become familiar with the safe operation of all tools and equipment used in this archery pro shop. Training will be provided by the owner or manager. Feel free to ask questions then or anytime when you may have trouble remembering correct procedures or when tools or equipment are upgraded or changed.

# Developing A Safety Plan

by Raymond Whittall

## and Avoid Government Fines

*It must be written in a language understandable by all employees;*

*It must identify the person responsible for implementing the IIPP, as well as maintaining the IIPP and required records;*

*It must provide for periodic internal inspections to identify and evaluate any potential hazards and unsafe work conditions and practices;*

*It must specify how unsafe conditions will be corrected;*

*It must detail how accident/exposure incidents will be investigated;*

*It must state how you and employees will communicate with each other on safety issues, and especially how your employee can do so without fear of reprisal;*

*It must specify how you will train employees in safe-work practices;*

*It must explain how you will go about ensuring compliance with your IIPP.*

An effective IIPP includes training for both supervisors and line employees. Training for both is required.

Enforcement of employee safety laws varies from state to state, especially in some of the less hazardous businesses such as retailers and sales offices. However, employers leave themselves vulnerable to some rather serious monetary penalties and other financially detrimental sanctions when they completely ignore the law by failing to create and implement or maintain their IIPP. States have fines of up to \$25,000 per day for an employer's failure to comply with the requirement to have a written safety plan.

I say "per day" because the fine is applied every day from the time of inspection by the enforcement agency until the employer creates and implements their IIPP. Even with professional help I've not seen an employer create an IIPP in under ten days when starting

from scratch. So, even a fraction of that fine could be devastating to many employers.

When an enforcement agency conducts an inspection of a workplace and discovers the employer is in violation of any aspect of the law or administrative regulations, I have seen fines of up to \$7,000 per day for minor violations such as failure to have Materials Safety Data Sheets (MSDS) for chemicals and chemical-based products used by employees and, of course, there are some more severe fines for the more blatant and/or egregious violations. Of course many archery retailers use solvents and adhesives in fletching arrows and installing inserts.

But what are the chances that your Labor Department's OSHA inspector is going to come waltzing in your front door tomorrow to conduct a safety inspection? As I said, that will vary from state to state. You have escaped scrutiny thus far and you feel pretty safe. That's very understandable. And just when we are at our most comfortable there is a workplace accident serious enough to get the attention of the authorities, and within days there stands an OSHA inspector who has been summoned to investigate this accident in which an employee has been injured.

The other scenario is that of the disgruntled employee who has read up on the law and decides to call the toll-free OSHA number and leave an anonymous tip that you don't have the required IIPP and that your safety standards are lax. It is an unfortunate fact that the law allows for such anonymous calls and an enforcement agency is bound by law to investigate. So, we can be going along just fine without any major workplace safety incident occurring, and as simple as that we are being inspected.

During this and any other

inspection you will be asked for a copy of your IIPP in whatever form is required by your state. The first thing they ask for is the employer's IIPP! The worst thing that could happen to you right now is for you to tell the inspector that you don't have a written safety plan. There are very few options available to the inspector from that point forward.

I don't really know how it came about, but you might remember some of these publicized enforcement actions reported in the news around the beginning of 2011.

In March the producers of a Broadway play were found to have safety violations after being investigated by the New York State Department of Labor. They were fined \$12,600 for three violations. Seriously? A Broadway play? What are the odds? Well, the odds are good when there happens to be an injury or two to an employee (cast member) and the authorities are called in to investigate.

In that same month out in California two film production companies were fined \$14,175 and \$12,150 respectively for safety violations, including failure to maintain a written IIPP. The other violations were for failure to provide employees with protective equipment to safeguard them during the course of performing their job duties. One of the production companies was investigated after Cal/OSHA received a complaint from a third party, not even one of their own employees!

A few fines were levied a couple months earlier against three separate companies back east for some more serious violations leading to employee injuries. Between the three companies there was a total of \$350,000 in fines for those safety violations.

These were against companies who have their own internal safety divisions to help insure employee safety.

Everybody is vulnerable in this area. So what does one do to protect oneself in this situation? Well, the smug, easy answer is to say, simply, create an Injury and Illness Prevention Program for your workplace. Sitting behind this desk makes it real easy for me to say that. But believe me when I tell you that I know it seems to be quite a daunting task. I also know that you can do it.

### Starting The Process

When I first became familiar with these laws and regulations I couldn't even spell OSHA, let alone comply with their rules. It did not take long for me to figure out that I'd better learn about this. At that time I was the owner of a small business with only two employees, and no IIPP. My incentive might have been a little greater though because, as a small business services firm, I saw an opportunity to create a new revenue stream by helping other employers come into compliance with the state laws and Cal/OSHA regulations.

Settle down now! You didn't just discover that I'm writing this to conjure

up business for myself. I'm now retired from that business and I'll not be promoting any company or service here. I'm just going to try to help you find your way through all of this because it's good for you as well as for your employees.

I'll tell you something though: I don't think I'm being too smug when I say "just do it." It's not rocket science, and there are many avenues available to you through which you can accomplish the goals of complying with the laws, making a safer work environment for your employees, and protecting you and your business.

For some of you this task will take a little more time due to the number of employees you have, the size of your workplace or with multiple sites, or through the complexity of your business, including extensive use of machinery and/or chemical products throughout your workplace.

For others of you it could be a simple process which might take up a total of a day or two of your work time. Regardless of how difficult you might think this to be, you must take the first step. There are resources available at your fingertips to get you started in the right direction, and there are even some who can offer in-depth assistance. I'll make you aware of those resources a little later, after you see a little bit of what you must do which will show you just what level of assistance you need, if any. You'll be able to ask the right questions of those resources when you finish with this.

Here is an overview of the steps you need to take to get into compliance. Remember, I am using one state's IIPP as my example. That being said again, I recommend that you incorporate these elements into your own safety plan even if your state has less stringent requirements. I have witnessed, first hand, the effectiveness of the IIPP in retail locations, machine shops and manufacturing, restaurants, service outlets, offices, the whole gamut. And it really is so easy to create, implement, and maintain an IIPP.

Let's begin with your safety manager. Every meaningful effort needs a leader and your internal safety program is no exception.

As an established employer you

would appoint someone who is already in a position of leadership, such as your pro shop manager, your production supervisor, human resources manager, or yourself. If you appoint someone other than an employee with current authority then understand that you are giving that person a fair amount of authority in nearly every area of your work site.

Preferably, you would like to have someone in this position who has some knowledge of workplace safety. Not necessarily one who is an industrial hygienist, but maybe someone who has been trained in safe-work practices as an employee under a previous employer, or someone who has put together an employee safety plan before. When you've decided on your ideal candidate, you'll next need to take some time to gather together all of the documentation necessary to a good IIPP.

The documents you need to gather together are all of the MSDSs for all of the chemicals and chemical products used by employees at your workplace, as well as the operating and safety manuals for any equipment used by employees. I have found it most efficient to get all of these together first because we often find that we do not have all of the documents we need.

Your MSDSs are required to be present at your workplace for all of the chemical products you use such as solvents, lubricants, fletching glue, and even common cleaners such as Ajax, Windex, air fresheners, etc. If it contains chemicals then you must have an MSDS for it.

If you do not have an MSDS for any particular product then contact either your supplier or the manufacturer of the product. Look at the label of the product where you will find this:

**'For MSDS call 1-800-XXX-XXXX'**

Or you will find the name, address and phone number of the distributor or manufacturer. Whatever the case, make contact and request an MSDS for each product lacking one. Manufacturers must provide you with an MSDS free of charge. And, in turn, you must have them as part of your safety plan. Also, if you have misplaced any safety or operating manuals for any of your equipment from extruders to your most basic fletching jig, then you'll want to order

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new manuals from the manufacturer.

I always recommend doing this document acquisition before doing your other tasks. The reason being that if you lack any necessary documentation you'll get a head start on getting replacements from the outside sources, which could take some time to arrive. While you wait the arrival of those documents you can begin the physical inspection of your workplace.

### Inspecting The Workplace

The inspection you conduct will be top-down, covering every nook and cranny of your workplace. During this inspection you will focus on:

**Your Physical Plant:** Including the integrity of your building and the safety of your stairways, platforms, etc. You won't need a structural engineer or anything like that. Just make sure your ceiling isn't dropping down bits and pieces, that your handrails are secure, and that you have non-slip floor strips and floor mats where needed. Things like that.

**Your Equipment, Machinery and Tools:** Here you will inspect these items to ensure that the appropriate safeguards are attached and that there is no damage to any piece which could be hazardous to your employees.

**Hazardous Substances:** This is where you make sure that chemicals and chemical products are used and stored properly, and used only by those who are properly trained in the safe-use of those products. You'll already have a list compiled of your chemical products from your document acquisition efforts.

As you ensure proper use and storage of the chemical products, also make sure you have all of your containers properly labeled. Too many times I've found a client with those clear spray bottles we buy at the store, and the client or some anonymous employee has filled the container with a substance unknown to everybody in the workplace. Every employee has an opinion of what it is and they differ from what the owner thinks it is. Well, it doesn't matter. Unless you are the person who filled that container and you can definitively identify the substance, it has to go! You must label that bottle going forward.

**Work Performance:** During this aspect of your inspection you want to pay attention to how your employees carry out their duties, seeing if they do so with attention to safety. Are they using protective equipment when and where appropriate, such as wearing safety glasses at the bow press and arrow cut-off saw? Do they utilize any machine guards installed on equipment? Do they perform their duties in such a way so as to ensure their safety as well as the safety of other employees?

As you conduct your inspection you should be taking notes as to your findings, both unsafe practices and conditions as well as noting any employee job performances you find to be especially safe and useful for others to follow. These notes serve as your basis for your inspection report as well as helping you to remember the potential hazards which you must correct.

Part of your legal responsibility is to correct any unsafe conditions which present a potential hazard to employees. You must also explain in your written plan your corrective action procedures to abate these hazards. This can be as simple as stating that employees will not have access to the hazardous area or object until hazard abatement has occurred and that such hazard abatement will occur as quickly as is physically possible. You should maintain a record of all hazards and the corrective action you took for those hazards.

### When There Is Injury

From time to time an employee will become injured in your workplace. When this occurs it is incumbent upon you to determine how the injury occurred, if the employee was following safe-work practices as specified in your Codes of Safe Practice, and how a recurrence can be avoided. As part of the employees' files you will need to document all of this and place your report in the affected employees' files.

A section of your IIPP will be

#### Bow Press Operation

Compound bows and crossbows are under high tension and must be compressed correctly to avoid damage to the bow and/or injury to the employee. ALWAYS wear safety glasses when the bow is under compression in the press. Make sure you have any needed accessories, like the proper limb tip compression brackets, before beginning work. If you have reason to believe the bow may have been damaged by impact, a dry-fire or excessive heat, check with the manager or owner about the best way to relax the limbs.

devoted to explaining your accident and exposure incident investigation procedures. In this case, exposure refers to any spillage of, release of, harmful contact with, or employee illness resulting from chemicals or chemical products.

Most readers of *ArrowTrade* are retailers, and as a retailer your accident/exposure incident rate is going to be low. You will have incidents

occur, but not so catastrophic that you need a half-dozen specialists coming into your store to tell you what happened. So, something to the effect that you will interview affected employees and witnesses to the incident and that you will physically inspect the incident area and document your findings. That will suffice for this section of your IIPP.

Some of you manufacturers and distributors out there - being susceptible to such incidents with a higher level of severity - would have a more formal approach to such investigations which might include members of your safety committee.

Whatever your approach to explaining your process within your IIPP, keep it simple but ensure that it is thorough.

The law protects employees from retaliation for complaining about safety

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in the workplace. In some instances employees may refuse to perform a function if it is apparent that a related hazard exists. You may not discharge or lay-off the employee in such a case.

Quite often the workplace is relaxed and open enough that employees and employers are comfortable discussing such concerns. But sometimes the employee may feel a little awkward complaining about something. To alleviate this you should create a method by which employees can bring safety matters to your attention without fear of retaliation.

The simple solution to this is the installation of an employee suggestion box where written, anonymous complaints can be deposited. This effectively complies with the confidential communication requirement contained in the employee safety laws! It also precludes an employer from appearing retaliatory. It might just be coincidence that a week after an employee drops a safety-related issue into the suggestion box you discharge that employee. Well, because you are not aware of the identity of the employee raising the safety issue you could not have been taking retaliatory action against that employee, could you?

A focal point of an IIPP is the training of employees. If you have employees adequately trained in safe-work practices then your incident rate is going to be negligible, and productivity is going to increase when employees continue to be healthy.

There is a right way and a wrong way to perform every task in your workplace and between you, your manager and your experienced employees you recognize work practices which are safe and those which are not. Subsequent

to your inspection wherein you identified potential hazards, discovered which assortment of chemicals and chemical based products are used by your employees, and observed the work habits of your employees, you are ready to create your Codes of Safe Practice which will form the basis of the training you give to your employees.

You should utilize all of the resources available to you to develop your Codes of Safe Practice including your inspection results, employee input, MSDSs and safety/operating manuals. Codes of Safe Practice simply instruct employees in the safe manner of performing their duties. They are really no more difficult than: "When lifting heavy objects, lift with your legs rather than with your back." Or for another example: "Wear protective gloves when using solvents to clean adhesive residue from shafts."

You will basically be creating a list of safe practices by job category rather than by individual employee. Those of you having a workplace wherein most, if not all, employees perform nearly all functions will create a General Codes of Safe practice for all employees and then create job-specific Codes of Safe Practice. If you are a manufacturer or other business where employees perform only one job day in and day out, you should create Codes of Safe Practice for the individual job categories, incorporating General Codes of Safe Practice into each.

With your freshly minted Codes of Safe Practice, your MSDSs and safety/

#### Arrow Cut-Off Saw

Make sure your safety glasses are on and the shield on the arrow cut-off saw is in place. Do not use the saw if there are chunks missing or visible cracks: Inform the manager so he can replace the blade or do so yourself if you have been trained in that process. The shop vac under the counter must be plugged in the switchable outlet that also powers the saw so it can safely pull away the carbon or aluminum dust. When you are done building the arrows, wipe the area around the saw with a damp paper towel and discard in the trash.

operating manuals in hand you are ready to gather together your employees for their safety training. I've trained small groups (up to about 10 employees) in about 30 minutes. Larger groups require a little more time, as does training in high-hazard industries and those workplaces with half a dozen or more job categories.

Let's be real about something here: Your employees really already know how to perform their jobs in a safe and healthy manner. What you are doing here is finding the best practices to use, and letting the employees know that safety is taking a higher priority than may have previously been in existence.

One of the ways you instill this in your employees is via the legally required incentives you implant for both safe and unsafe work practices. Yeah, I know: another new thing to do! But if your employees know you are serious about safety then they are more likely to take seriously the program you are implementing. Conversely, if they sense that you are just going through the motions they are highly unlikely to take any of this seriously. It will fall squarely on your shoulders if you demonstrate any level of apathy.

Some of your employees might be like family to you. You love them and they love you in return. Unfortunately,

***Safety organizations, states, small business owners and major corporations alike now realize that the actual cost of a lost workday due to injury is substantial. For every dollar you spend on the direct costs of a worker's injury or illness, you will spend much more to cover the indirect and hidden costs. Consider what one lost workday would cost you in terms of:***

***Productive time lost by employees and supervisors attending the accident victim***

***Productive time lost by the injured employee***

***Clean-up and start up of operations interrupted by the accident***

***Time to hire or retrain other individuals to replace the injured worker until his/her return***

***Time and cost for repair or replacement of any damaged equipment or materials***

***Cost of continuing all or part of the employee's wages in addition to compensation***

***Reduced morale among your employees, and perhaps lower efficiency***

***Increased worker's compensation insurance rates***

***Cost of completing paperwork generated by the incident***

I have seen too many instances of love gone wrong when an employee becomes injured on the job and files a worker's comp claim. All of a sudden you are on the spot.

One of the best ways to protect yourself in such situations is to document your entire IIPP, and the serious steps you took to implement a comprehensive IIPP, complete with adequate employee training. When you do this and must then prove your efforts, you protect your position because you did document your work, and you did comply with your state's laws, and you did train your injured employee, and in such a way so as to avoid exactly that injury.

On the other hand, when you fail to create and implement an IIPP the presumption is that you were negligent and we are all held accountable when we are negligent and/or apathetic. Please don't let this be you.

### Where to Get Help

Different jurisdictions have different requirements for employee safety. I have offered you a general overview here. I do not know the details of every states' employee safety laws, but there is help available to you. You didn't think I was going to write such a depressing article and then wave goodbye as I leave you to fend for yourself, did you? Well, I hope you'll be pleasantly surprised to hear that not only is there assistance available to you, but that some of it may even be at no cost to you!

There are five resources that I constantly tout:

**1. You can search the internet for online services which can provide you with software to help you through the step-by-step process, or who offer fill-in-the-blank forms and the guidance you need to actually fill in the blanks.**

**2. You can hire a consultant or service company to come to your workplace to conduct the required inspection work and to then write your plan and train your employees for you.**

**3. You can check with your local Chamber of Commerce, or with your trade association to see what tools they have available, or to learn of the resources they are aware of that can help you to complete your goal.**

**4. You can seek the advice and assistance of your business insurer or your worker's comp carrier.**

**5. You can utilize the professional services of your local OSHA where they offer any sort of consultation service.**

**The Internet:** If you search for Injury and Illness Prevention Program you will find not only the actual IIPPs of other employers, but you will also find offerings for computer software and direct downloads of necessary forms and instructions as to how to proceed.

Most of these will cost you to order or download the software or forms, and some will offer some level of support should you have any questions, but for the most part you will be on your own. This is a good avenue to take, though, if you have a small business with just a few employees and there is little hazard to what you do say, like a sales rep office or a small archery retail store.

If choosing to put together your own IIPP pay special attention to identifying hazards during your inspection. Hazard control is of such import that it can make or break your IIPP. Just a gentle reminder!

**Consultants and Service Companies:** You would find either of these listed under Safety Consultants or Industrial Hygienists in your Yellow Pages or local B2B directory.

These consultants, while not necessarily inexpensive, can be counted upon to come to your workplace and offer a wide range of services from advising you to proceed on your own (how to conduct an inspection, telling you what hazards are unique to your business or industry, and how to train your employees) to going the full scope and doing for you everything necessary to bring you into compliance with the local laws and regulations.

Fees for these services are going to vary for both hourly and packaged services, and for some of you it will be money well spent because it gives you the comfort of knowing you are in compliance, that your employees will work

### Arrow Inserts

The propane torch used to install inserts in aluminum arrows gets very hot and can easily burn you, as can the hot melt adhesive itself. Use the provided protective gloves. The torch is to be used on the workbench area that has the heat-proof pad. Do not use the torch on carpeted sections of the work bench and never use it by the fletching area where solvents and adhesives may be present.

more safely in a safer environment, and that you have avoided some potentially devastating penalties.

**Chamber of Commerce or Trade Association:** Your local Chamber of Commerce and any local or national business or trade association you belong to often have a group of resources for you to utilize to at least get

you started on the right foot. Because these resources come recommended you may feel more comfortable with them.

**Worker's Comp & Insurance Carriers:** This is a fantastic resource for you to utilize. Give your agent a call.

Both your worker's comp and your general business insurance carriers have a vested interest in helping you to provide a safe work environment for your employees, and many will go so far as to send a consultant to your workplace to consult with you, giving you tips and ideas, providing guidance and instruction, as well as providing the necessary forms.

You will be surprised at how often this assistance is free as part of their service to you. And when you have your IIPP up and running be sure to ask

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#### **State OSHA Consultation Service:**

This, in my humble opinion, is the ultimate in the offerings of available resources available to assist you in your effort to get an IIPP in your place of business. This is one of the best examples of your tax dollars at work that I have ever seen.

Every state is different (indeed, not all states offer comprehensive consultation services - you'll have to call your local OSHA to determine what level of consultation or other resources they offer). I am intimately familiar with California's OSHA consultation service, and so I use their offerings as my example, as Cal/OSHA has consultants available who are knowledgeable in every facet of industrial hygiene and employee safety, as well they should.

The products, services and information they provide to employers are very clear and direct, so there is no ambiguity as to the meaning of something or what must be done. To this end some of the offerings you might expect include: Safety posters and bulletins for workplace display. Model safety programs for high hazard employers, non high hazard employers and employers with intermittent employees. Personal consultation at your workplace to help determine your needs, assist you in developing your IIPP, assist you in establishing necessary procedures, conduct and teach you to conduct a safety inspection, conduct employee safety training and teach you and your supervisors to conduct future employee safety training. ...And More!

Consultants will work side-by-side with you to help you achieve your goals and to ensure your future self-sufficiency in maintaining your IIPP.

When making initial contact with your local enforcement/consulting agency to determine what consultation services they offer, you will want to

refrain from offering too much information which might identify you or your company, at least until you get a feel for how you will be treated by them.

In California the services of the Cal/OSHA Consultation Service are not only free, but they are also confidential; two features you certainly want to inquire about, especially the latter.

As to confidentiality, the Cal/OSHA consultants do not communicate to the enforcement division anything about assistance they provide to you, nor about the state of your safety program or workplace. What's more, the consultants do not issue citations or levy penalties.

The entire focus of the consultation service for any OSHA-type agency should always be to help the employer. They should be separate and distinct from the enforcement side of your local agency, as some are.

Check with your local agency to see if they offer the same confidential service. Hopefully they do since their primary concern is to help you make your workplace safer.

Once you have your written IIPP in place, it is tremendously important to keep your employees involved in promoting workplace safety, to ensure that both you and supervisory personnel lead this effort by example, and to appropriately reward and enforce the various aspects of your safety plan.

There are too many cases which serve to remind us of this wherein no enforcement agency got involved but where employees were awarded sizable judgements against employers who themselves, or through their managers, became lax in maintaining the standards of the IIPP, and where the courts upheld awards in such cases.

A case which really stands out occurred in a five employee accounting office. Employees came to work one morning and discovered a bottle

#### **Employee Entrance**

Steps to the back (employee) entrance should be cleared of snow or ice by the first person to start work each day. Shovels, brooms and ice-melt crystals are stored in the rear closet. This is also our delivery door so it is essential it be kept in a safe condition throughout the work day. Let the manager know if any needed tools or supplies are not available or if you need extended time away from the sales floor to remove an accumulation of ice.

of dish washing soap overturned and leaked on the floor. The manager told all of the employees present to stay clear of the hazard and then called the janitor to have it cleaned up. The janitor could not clean it all in one trip, and while he was out getting fresh water an

employee arrived for work laden with files and walked right into the now invisible spill, slipped, fell and suffered significant injuries.

At the civil trial the firm's IIPP came into play and the jury rendered a sizeable award because the manager failed to physically block off the hazard which, according to a properly thought out IIPP, should have been done. An appellate court upheld the award. Again, please pay attention to your IIPP after implementation. Don't let this happen to you.

Okay, let's wrap this up, shall we?

Each year about 2.8 million employees suffer some sort of work-related injury or illness, with more than five thousand work-related deaths occurring. The most effective way to alleviate these statistics is to train employees to perform their jobs in a safe manner.

There are very good reasons to develop and implement your IIPP, the most important being that it could save one of your invaluable employees from serious injury or worse and, also, reducing workplace injuries saves you money!

The resources listed should not only serve to get you started, but may very well see you through to fruition. Take the first step - it'll be worth it.



*To determine which of your states' agencies administers your occupational safety laws you should look in the Government section of your phone book under "Labor" or "Occupational Safety and Health." Another excellent source of information is the National Safety Council who has a broad range of information services available. Call or visit your local chapter to obtain materials pertaining to your business. If a local chapter is not available you can contact them through: National Safety Council, 1121 Spring Lake Dr. Itasca, IL 60143-3201 1-800-621-7619*

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# Equipment Focus

Standing high in a hemlock tree last hunting season I had little to do except think and wait. As time passed I began looking at my equipment. My state of the art bow, arrows, rest, release, stabilizer and quiver all played a part in harvesting a deer later that season but it dawned on me the most critical component of all was the broadhead at the tip of my arrow.

Over 40 years ago I harvested my first deer and several thereafter using the Bear Razorhead. This broadhead was the industry standard for years until other manufacturers developed heads that were even more lethal and accurate. In subsequent seasons I took deer using the Savora broadhead by Archer's Ammo and then after their introduction, switched to using NAP's venerable Thunderhead. I particularly liked the Thunderhead because it never failed and produced excellent blood trails. It literally zipped through deer with lethal results.

As the development of new archery equipment snowballed, other manufacturers brought out other styles of hunting heads that were extremely sharp, flew straight and killed game cleanly. Today, hunters have a choice of many excellent broadheads and it seems more are developed every year.

With today's super fast bows some hunters abandoned standard fixed-blade broadheads and switched to using their mechanical cousins. These hunters feel a fixed blade head tends to shoot less accurately out of a high speed bow and requires a lot of precise bow tuning. On the other hand it

can be argued a mechanical broadhead can fail to deploy especially if it's shot out of an older, slower bow and some shooters feel a mechanical broadhead is simply not as durable as a fixed blade head.

To combat the bad rap on the inconsistent flight characteristics of a fixed blade broadhead at high speeds, manufacturers have made changes to designs. One trend is for shorter ferrules and blades and many now have blades an inch or less in length. Although the ferrules and blades are shorter, they present a large cutting diameter, usually an inch or more, making them deadly, durable and accurate.

Today, there are dozens of fixed blade models from which your customers can choose but few have the time, money or inclination to test more than one or two of them. As a result, we decided to contact a number of manufacturers to see which fixed blade heads have endured the test of time and what new heads, if any, they will be offering in 2012. By passing this information on to our readers, dealers can keep abreast of the newest developments in fixed blade broadhead design and by doing so they will be in a position to help their customers select a head most suitable for their hunting needs.

## Clean-Shot Archery

Clean-Shot Archery was founded in Renton, Washington by Larry Bay, an avid archer and a manufacturing engineer with a strong background in product and business development. The concept for Spot-On Laser broadheads started several years ago when Larry's

peep sight filled with water during an extended push through wet brush on a Pacific Northwest hunting trip. As a result of that failed trip, Bay looked for an alternative to conventional sighting systems and the concepts behind Clean-Shot Archery were developed.

Clean-Shot Archery claims to have moved the archery industry into the technology age when it introduced the revolutionary Spot-On Laser broadheads at the 2011 ATA show. This hunting head features an internal laser beam integrated into a patented broadhead that automatically activates at full draw using a simple bow mounted magnet. This beam is then projected on the target so that the shooter can see precisely where he is aiming.

Each Spot-On Laser broadhead offers a full 24 inches of elevation adjustment at 30 yards as well as a left or right adjustment allowing the shooter to "sight in" each arrow out to 70 yards. This means parallax error, which is inherent when using a peep sight, is practically eliminated. Bay suggests this head is an excellent training tool for novice archers that improves shot confidence and overall accuracy. These heads feature a Hollow Point Tip that cuts on contact and removes a core of tissue he says creates a massive wound channel and excellent blood trail.

Clean-Shot Archery also offers shooters the Spot-On Hollow Point broadhead, identical to the Spot-On Laser broadhead except it doesn't have the laser integrated into the head. The company says the Hollow Point broadhead provides excellent flight characteristics and accuracy making the transition between the Laser and Hollow Point broadheads seamless. All Spot-On broadheads feature a patented Hollow Point Tip that cuts on contact and removes a .25 caliber hole with every shot. According to the company, once this core sample is removed, the blade, with its 1-1/4 inch cutting diameter, slices tissue with less friction making an unobstructed hole and leaving a blood trail leading straight to the downed game.



*The Spot-On Laser Broadhead automatically activates an adjustable laser beam at full draw.*



*The 100 grain F-15 by Carbon Express has become an excellent seller for the company. It has a sleek, aerodynamic profile.*

# Fixed Blade Broadheads

By Mike Raykovicz

For 2012 Clean Shot has introduced the Spot-On Laser Archery Target Point. These target tips compliment the Spot On Laser hunting points as a training tool for young and novice archers.

For more information on these innovative products contact the company at (800) 242-9023.

## Carbon Express

Carbon Express, long known for high quality carbon arrows, added the F-15 Dual Blade broadhead to its line in 2010. This futuristic and innovative broadhead took years to design because the company painstakingly researched and analyzed the characteristics of broadheads and arrows in flight. As a result, Carbon Express developed a significant and detailed understanding of broadhead performance from time of release to total target damage and from these tests, it developed the F-15 series of broadheads. The F-15 has unique dual side-by-side cutting blades making its shape stand out from others on the market. The razor sharp blades provide six cutting edges to create a wound channel the company says is 250 percent larger than a single blade broadhead. As a result, hunters can expect significantly greater blood loss, better blood trails and quick, humane kills. The solid one piece F-15 is manufactured from 440 stainless steel using a Pressure Injected Mold (PIM) making it extremely durable. The 100 grain F-15 features a 1-1/8 inch cutting diameter and .030 inch thick blades.

Another Carbon Express fixed blade offering is the Assault LP 3 Blade. This head has a low profile design promising hunters precision flight characteristics. Three heavy duty blades with a 1-1/8 cutting diameter are combined with a bone breaking cut on contact steel point to ensure deep penetration on game. The Assault LP Three Blade is available in a 100 grain weight and sold in a three pack.

Hunters preferring the increased penetration offered by a Trocar tip will like the 100 grain Sabre XT Pro because

in addition to the Trocar tip, it offers three blades with a thickness of .030 of an inch and a 1-1/8 inch cutting diameter.

The Triloc Pro is yet another broadhead in the Carbon Express line offering shooters bone crunching strength while guaranteeing there will be no blade loss due to its three point locking blade system. The 100 grain Triloc Pro has a 1-1/8 of an inch cutting diameter and comes in a three pack.

Four blade hunting heads are still popular with some shooters so the Quad Pro offers them a solid four blade broadhead with a forward positioned bleeder design the company says delivers pin point accuracy and lethal results. With .045 of an inch thick blades and a 1 inch cutting diameter, the Quad Pro promises shooters deep penetration on game.

The Carbon Express XT 4 Blade cut-on-contact broadhead has a cutting diameter of 1-1/8 inches and a strong, one-piece main blade construction with a curved cutting blade surface for greater penetration. To increase lethality, the back of the main blade is sharpened as well. With a main blade thickness of .058 of an inch and bleeder blades measuring .045 of an inch, the XT 4 Blade will stand up to just about any game animal.

The Carbon Express Nativ 100 offers shooters a solid two blade hunting head the company says will fly true when shot from either a high speed compound or lower poundage traditional bow. With the Native 100, tradition meets technology. This 100 grain head has a 1-1/8 inch cutting diameter

and an aircraft grade aluminum ferrule for superior lightweight strength.

Carbon Express offers three Troika models each with a bone breaking steel Trocar tip. The Troika 75, 100, and 125 grain models all have a 1-1/8 cutting diameter and a blade thickness of .020 of an inch. The Troika 75 grain broadhead is great for youth or low poundage bows and has all the features of the heavier models.

The Troika ST3 broadhead features an offset, cut on contact lead blade the company says provides outstanding penetration on game. The 100 grain Troika ST3 has a 1-1/8 cutting diameter and a blade thickness of .031 of an inch and a patented three point blade locking design to ensure the blades will not come loose.

Rounding out the current Carbon Express line of broadheads is the Mayhem EXT, a three blade head with a low profile design. It is made completely of steel for extra strength. The Mayhem EXT has a blade thickness of .017 of an inch and a 1 inch cutting diameter.

Carbon Express says crossbow hunters seeking the latest advances and innovation in broadheads will find the new for 2012, 100 grain XT Dual Blade broadhead combines engineering with design making it a devastating weapon for big game. The XT Dual Blade is designed exclusively for use with "crossbolts" and features an razor-sharp six blade construction that produces a significantly greater wound



**The Carbon Express Quad Pro offers shooters a solid four blade design and a 1 inch cutting diameter at 100 grains.**



**The Troika Lite 75 has the same heavy duty blade design as the Troika 100 and 125 grain models as well as the same 1-1/8 inch cutting diameter. It is a great choice for youth or low poundage bows.**

channels than traditional broadheads. The curved cutting blade surface is built for maximum penetration while the backs of the main blades are sharpened for even greater damage.

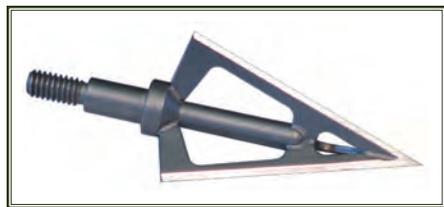
Rob Eastman, president of Carbon Express said, "With all of our Carbon Express products, we're constantly pushing to innovate new designs and engineering technologies that will improve overall performance for the hunter and this new broadhead is no exception. With the XT Dual Blade we've taken broadhead design for crossbolts to a new level. We're confident that this unique six blade design will deliver the performance serious crossbow hunters are looking for." For additional information contact Carbon Express at (800) 241-4833.

### Magnus Inc.

Magnus broadheads have been a trusted tool for archers for more than 25 years. Today, Magnus offers more than 50 different broadheads in ten different styles with most being available with two or four blade options.

According to Magnus Marketing Manager John Betker, the Snuffer SS stainless steel broadhead has been re-engineered and is precision machined for perfect arrow flight. In addition, Betker said each head is then spin tested to insure pinpoint accuracy. The Snuffer SS features a strong, one piece head and a cut on contact tip which, when combined with its low blade angle, produces an efficient and effective three blade hunting head. The Snuffer SS is available in 85, 100 and 125 grain weights and comes in a pack of three.

For those preferring a razor sharp straight blade broadhead, the Stinger is one of the most popular heads in the Magnus line. The Stinger is made of knife grade stainless steel with a ferrule



*The Snuffer SS by Magnus features a cut on contact tip and sharp stainless steel blades that are easy to resharpen. It is available in 85, 100 and 125 grains.*

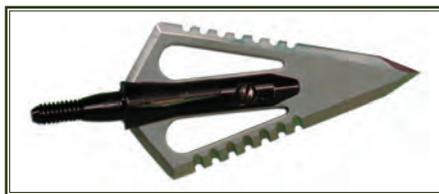
crafted from aircraft quality aluminum. A patented diamond tip allows it to pierce the thickest hide and provides bone splitting penetration.

The Magnus Stinger Buzzcut features twin chiseled serrated blades to produce more effective cutting action once inside the body cavity of a game animal. Magnus says this cutting action produces more effective blood trails and a shorter tracking job for the hunter. Knife grade stainless steel gives the Buzzcut its razor sharp edge while precision machining and spin testing promise perfect arrow flight. The Stinger Buzzcut is available in either a two or four blade configuration. Two blade models are available in 100 and 125 grain weights while the four blade edition is available in 85, 100, 125 or 150 grain weights.

Turkey hunting with a bow and arrow is becoming more popular every year and Magnus now offers the popular Bullhead hunting head designed specifically for turkey hunting. This unique broadhead has a large cutting surface making it highly effective when taking head and neck shots at these big birds. The 100 grain three blade Bullhead has a 2-3/4 inch cutting diameter and typically provides either a clean ethical kill or clean miss. The Bullhead also comes in a 125 grain version with a huge 3-3/4 inch cutting diameter.

For 2012, Magnus is offering two new broadheads designed specifically for crossbows. The Killer Bee and Killer Bee Buzzcut are solid blade broadheads that will effectively work when shot not just from a crossbow but from any bow including traditional bows or compounds.

The Stinger Killer Bee borrows from the success of the original Stinger and offers a non-vented knife-grade stainless steel main blade with a patented diamond tip for bone-splitting



*The Stinger Buzzcut by Magnus features razor sharp blades with a chiseled serration for increased cutting action. It comes in either a two or four blade configuration.*

penetration. The ferrule is made from aircraft quality aluminum and the head is spin-tested after construction for perfect alignment. The Stinger Killer Bee is offered in two blade or four blade, and 100 or 125 grain.

Like the Stinger Killer Bee, the Stinger BuzzCut Killer Bee also incorporates a non-vented stainless steel main blade, but with a chiseled serration, delivering a deadly sting for greater blood trails and less time tracking game.

Betker explained Magnus introduced this new line to the already successful Stinger and Stinger BuzzCut family because of the overwhelming national acceptance of crossbow hunting. He explained the company felt it needed to engineer a broadhead that could withstand the punishment and the kinetic energy associated with crossbows. The blades of the Stinger Killer Bee and BuzzCut are solid and tough enough to endure bone-splitting penetration at speeds upwards of 365 fps and, like every other head Magnus offers, they are spin tested by hand to insure perfect arrow flight. "If there are planing or tuning issues it won't be the fault of our broadheads," Betker assured us.

For additional information on any of these hunting heads contact the company at (800) 720-5341.

### Ramcat

Brett Fulton, president of Fulton Precision Archery, said his company introduced the 100 grain Ramcat fixed blade broadhead two years ago and



*Designed specifically for head and neck shots on turkeys, the Magnus Bullhead comes in 100 or 125 grain models.*

last year they came out with a 125 grain version. Both models offer a one piece, stainless steel ferrule with a Hydroshock Self Centering Chisel tip. When we spoke to Fulton his enthusiasm for the Ramcat was obvious. Fulton explained both weights of the Ramcat head offers shooters superb accuracy because of their design. He noted deep lobes in the tip create an airfoil that drafts wind over the blades and prevents wind planing. Once in the animal, the lobes create a hydrofoil forcing body mass outward and eliminating friction on the arrow shaft. Fulton says this design results in incredibly deep penetration.

The replaceable blades on both Ramcat models are .032 of an inch thick for added strength and are sharpened front and rear to create a back cut. If the head does not pass completely through the animal it will cut its way back out. Fulton said both the Ramcat 100 and 125 grain heads offer shooters field point accuracy while being deadly quiet in flight.

For 2012 both Ramcat models have been redesigned slightly and both now feature left hand screws to allow the blades to be tightened into the loaded position more easily. The Allen sockets on the blade screws have been increased from the original .050 to 1/16 inch for easy tightening and to reduce the chance of rounding out the screw. To accommodate all inserts, the shank of the Ramcat is now 1-1/2



**Fulton Precision Archery has modified its popular Ramcat broadhead so the blades can be tightened more easily. The blades of the Ramcat are sharpened front and rear and will create a back cut if the head does not pass completely through the animal. The 100 grain head has a 1-3/8 inch cutting diameter while the 125 grain model cuts a huge 1-1/2 inch hole.**

threads longer and an o-ring has been added to the shank to allow the head to be indexed on the arrow to clear the shelf and the riser. A new blade sharpening process makes this head even more lethal and new practice blades are available for both the 100 and 125 grain models. For more information on these broadheads contact the company at (412) 519-5352.

### Grim Reaper

The Hades by Grim Reaper is a fixed blade broadhead the company says is packed with features making it the ultimate killing machine. With a machined aircraft grade aluminum ferrule and V-notched trocar steel tip, the Hades promises maximum penetration on game. Three stainless steel blades are sharpened on the front and back edges to provide maximum cutting and are held in place by Grim Reaper's four-point locking system. The Hades is available in 85, 100 and 125 grain weights and all feature a 1-3/16 inch cutting diameter. Contact the company toll free at (877) 474-6732 for additional information.

### Quality Archery Designs

Quality Archery Designs (QAD), known for high quality drop away arrow rests entered the broadhead market last year when it introduced the Exodus, a fixed blade broadhead with a tempered steel head and sturdy, razor sharp .035 of an inch thick blades. QAD Marketing Director, Kevin Fry told *ArrowTrade* since its introduction, sales of the new broadhead have exceeded expectations. "The broadhead market is tough and there are a



**The Exodus by Quality Archery Designs features a super short ferrule with blades swept back over the arrow shaft giving it the same overall length as a field point. It is available in a non barbed or, where legal, a barbed design.**

lot of good heads out there but dealers have shown a great deal of interest because of the quality of our rests and other accessories. Because of the good relationship we have with our dealers, they have the confidence to try our products and as a result, the Exodus has been very well accepted by their customers as well," Fry stated.

QAD said shooters can expect the new Exodus to provide field point accuracy, remarkable penetration and a large cutting diameter. According to Fry, this new fixed blade broadhead



**Grim Reaper now offers the Mathews line of broadheads which includes the Hades fixed blade hunting head with Airfoil technology. This head is similar to the standard Hades model but has a gold colored ferrule and Mathews packaging.**

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Unlike other compact heads the QAD design does not give up penetration or cutting diameter. By offering a unique blade over shaft design, QAD was able to maintain a moderate blade angle for remarkable penetration and a wide 1-1/4 inch cutting diameter. The Exodus is offered in 85 or 100 grain weights and comes in either a barbed or non-barbed configuration. QAD can be reached by calling the firm at (434) 846-5839.

### Rocket Broadheads

Jason Pickerill, Trophy Ridge/Bear marketing manager, told *ArrowTrade* the Ultimate Steel broadhead by Rocket is designed to take on the largest game animals including Grizzly, Moose, Elk and even many African big game species. Pickerill said the Ultimate Steel head is extremely compact and will remain stable during the high speed forces imparted by today's fastest bows. The Bacon Skinner Blades of this broadhead are specially designed to reduce drag and wind planning while delivering speed and accuracy. The Ultimate Steel lives up to its name by being constructed entirely of steel with a titanium nitride coating for protection from the elements and the ferrule is topped with an improved chisel tip for bone-crushing blade protection. The Ultimate Steel broadhead comes



**Rocket's Ultimate Steel fixed blade broadhead is more than a match for the largest game including, moose, bear and many large African game animals. The Ultimate Steel comes in 75, 100 or 125 grain weights and features a perforated blade design to reduce drag and wind planning while providing exceptional accuracy even when shot at high speed.**

in 75, 100 and 125 grain weights and practice blades are available. Contact Rocket Broadheads at 800-694-9494. (*Editor's Note:* See more about this broadhead in the March, 2012 issue's scientific test conducted by Jon Teater.)

### Innerloc

Because carbon arrow shafts cannot be heated they can be difficult to tune when a broadhead is attached. To combat this problem, Innerloc has developed what the company calls Blade Alignment Technology (BAT) to simplify tuning hunting shafts. This technology simplifies broadhead tuning problems because the broadhead itself is adjustable. According to Connie Sullivan, Innerloc operations manager, the blades on Innerloc broadheads can be easily adjusted the same way for every shot and from arrow to arrow. This results in smaller groups when shooting broadheads.

All Innerloc broadheads are very sharp and feature what the company refers to as "Endur-Edge." A special manufacturing and tempering process performed on the highest quality stainless steel material produces an ultra durable blade edge that stays sharp while passing through the target. Sullivan claimed the Endur-Edge blades stay clean after passing through hair and hide and cause immense blood trails and quick kills.



**Sullivan Industries has added the Falcon as its latest broadhead offering. This head has an ultra compact design and features Blade Alignment Technology (BAT) that solves the problems associated with tuning broadheads to carbon arrows. The center locking system matches bevels at the front of the ferrule with those on the inside edge of the tip to create a clamping action when the tip is tightened. This forces the tip, blades and ferrule so tightly together they perform as a single unit. They are available in 65, 85, and 100 grain weights.**

The Falcon and Carbon Tuner are the latest additions to the Innerloc line. Sullivan said the Falcon is fast, fierce and fatal and features a rear loading blade locking design called the CLS II that makes it the ultimate in a compact broadhead. The cut on contact tip and .027 inch thick blades provide a 1 inch cutting diameter and it has Blade Alignment Technology.

The Carbon Tuner has all the features of earlier Innerloc broadheads with the addition of Blade Alignment Technology. With BAT, hunters can easily tune their carbon arrows to shoot more accurately than they were able to before. The Carbon Tuner features a .027 of an inch blade thickness and has a 1-1/16 inch cutting diameter. Custom blood trail anodizing on the ferrule dresses up the head and gives it a special look. The three blade Carbon Tuners come in 75, 100 and 125 grain weights. A 100 grain Pink Carbon Tuner is also available and a portion of profits from the sale of this broadhead go to the Pink Arrow Project which channels funds to support women who are battling cancer.

The Innerloc Stainless Extreme 100 and 125 grain broadheads feature a 100 percent stainless tip, blades and ferrule to provide superior penetration. These heads are small, fast, accurate, and deadly. The aluminum ferrule has been replaced with heavier stainless steel so it carries more energy in a smaller package. Contact Sullivan Industries for more information on Innerloc broadheads by calling (706) 782-5863.



**The Innerloc Pink, 100 grain Carbon Tuner is a three blade broadhead and part of the Pink Arrow Project with a portion of the proceeds from its sale donated to fighting breast cancer. The Pink Carbon Tuner features a 1- 1/16 inch cutting diameter and replaceable blades.**

## Tru-Fire

The Tru-Fire T1 broadhead offers shooters thick .032 of an inch stainless steel blades and a cut on contact tip the company says will crunch bone. Steve Tentler, president of Tru-Fire told *ArrowTrade* the ferrule of the T1 is made from a solid piece of steel and precision machined. "This results in a more durable and accurate broadhead. The T1, with its aggressive tip, has a two position blade locking system which keeps each blade from moving up and out of the ferrule or to either side. The ferrule is a solid steel one piece precision machined work of art that will give shooters excellent arrow flight due to the extreme manufacturing tolerances that are demanded," Tentler explained. He added the ferrule is then heat treated and coated to handle anything that walks in front of it.

Tentler commented that the aggressive tip design of the T1 creates an un-sealable hole in the target and causes massive hemorrhage, good blood trails and quicker recoveries. Dealers should note the T1 broadhead is entirely American made and comes in an attractive clam shell package that looks like a broadhead making it a real eye catcher. For more information on the T1 or any other Tru-Fire products contact the Wisconsin company at (920) 923-6866.



**By using a patent pending Spring Retention System (SRS), the T1 by Tru-Fire promises loose blades are a thing of the past. Pressure from a spring mounted in the machined solid steel ferrule forces the blades toward the tip and locks them in place. The blades are made from 440 stainless steel and are .032 of an inch thick. The T1 has an overall cutting diameter of 1-1/8 inches and is offered in 100 and 125 grain weights.**

## Sanford Innovations

The BloodShot from Sanford Innovations is engineered from solid steel and has .040 of an inch thick razor sharp blades. President Chris Sanford explained that what makes the BloodShot broadhead so destructive is its Quadra-Blade design with four equal blade points and windows. He said this innovative blade configuration creates pinpoint aerodynamics with unmatched flight and balance for all bows, especially today's high performance models. The BloodShot has a patent pending Blade-Overlock Technology (BAT) which locks in the blades so solidly the company guarantees they will never come loose. Sanford Innovations can be reached by calling (406) 669-4000.

## Mid-Atlantic Archery Products

One look at a Crimson Talon broadhead will tell you these heads aren't just different from other broadheads, they're radically different. Scott Mackie, president of Mid-Atlantic



**The 100 grain BloodShot fixed blade broadhead by Sanford Innovations has steel construction and replaceable blades. The four main blades add up to a 2-1/4 inch combined cutting diameter.**

Archery Products told *ArrowTrade* that Crimson Talon broadheads screw through game much like a dry wall screw. Mackie says this produces a spiral wound channel that won't close or clot under any circumstances and leaves an unmistakable blood trail. The patented Spin-Tite Airfoil technology stabilizes the arrow shaft from the front while helping to eliminate wind planing.

The Crimson Talon XT is a six blade broadhead stabilized by three ridged airfoils. The blades measure .024 of an inch and are replaceable. This head is available in either 100 or 125 grain weights.

The Crimson Talon Hyper-Speed XT is designed specifically for today's super fast bows and crossbows. The Hyper-Speed XT features eleven ridged airfoils that stabilize the arrow at high speed while the patented Spiral Kut Tip makes this head screw through the target producing a spiral wound channel. This head is only available in a 100 grain weight and comes in a three pack.

For those looking for a



**Introduced in 2011, the versatile V4 by Crimson Talon allows shooters to choose between a 100 or 125 grain hunting head by simply adding or removing the weight ring on the ferrule. The V4 is designed for deep penetration with a cut on contact point and heavy .035 inch main blades.**

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cut-on-contact broadhead, the Crimson Croc may be the one they want. Four Teflon coated main blades slice easily through almost any animal while two rigid airfoils spin stabilize the arrow from the front. The replaceable main blades are a hefty .040 of an inch thick while the two bleeder blades measure .020 of an inch. The Crimson Croc is available in either a 100 or 125 grain weight and come three to a package.

The V4 is the latest offering from Mid-Atlantic Archery Products and features two rigid airfoils that spin stabilize the arrow from the front rather than the rear. The V4 offers shooters a large 1-1/8 inch cutting diameter while a 25 grain weight ring allows for easy and quick broadhead weight change. For customer and dealer support contact the company at (410) 658-9660.

### Muzzy

According to Muzzy Sales Manager Chris James, the compact MX-3 broadhead which Muzzy introduced in 2011 has been quickly embraced by hunters because of its rock solid design and bone busting strength. The MX-3 comes in either a 75 or 125 grain model with each being made of different ferrule material. The 75 grain MX-3 features an attractive gold aluminum ferrule while the heavier 125 grain model is designed with a steel ferrule. Both use the same blades and offer the same Muzzy Trocar Tip with the accuracy and dependability on which many dedicated users have come to rely. Both new MX-3 versions have blades measuring .025 of an inch thick

with a 1-3/16 inch cutting diameter to provide better blood trails. James told *ArrowTrade* that hunters shouldn't be fooled by the compact stature of either of these heads because they each pack all of Muzzy's legendary "Bad to the Bone" power in an ultra compact design. He noted the standard MX-3 is still available in a 100 grain weight with a 1-1/4 inch cutting diameter.

For multi-blade enthusiasts Muzzy offers hunters the four blade MX-4 in a 100 grain weight and a 1-1/8 inch cutting diameter. The standard Muzzy four blade model is also available in either a 90 or 100 grain weight. The standard Muzzy three blade head is available in a 100 or 125 grain version with both offering a large, 1-3/16 inch cutting diameter. For larger game the standard Muzzy is offered in either a 130 grain or 145 grain four blade model or, for all-round versatility, a 115 grain version is available. Those preferring an ultra-light hunting head will want to consider the 75 grain Muzzy three blade with a 1 inch cut.

Muzzy Phantom heads are proven performers on the heaviest of big-game species, including bear and moose. They feature a tough .040 of an inch thick primary blade that cuts instantly on impact, drives deep into thick skin

and muscle, and can be sharpened while the patented, replaceable .028 of an inch thick secondary blade helps guarantee better blood trails.

Phantom broadheads feature a single-piece ferrule to ensure they will hold up under any condition. They come in a variety of grain weights and blade combinations which makes them very versatile. The Phantom MX 85 is an 85 grain two blade model while the 100 grain Phantom MX is offered in a four blade model. Both MX Phantoms have pressed in bleeder blades so that they can't be converted into a two blade head.

Phantoms are also offered in 100, 125 and 220 grain models that can be converted into a two blade head if the hunter desires. Each offers a large 1-1/8 inch cutting diameter and secondary blades that measure .028 of an inch in thickness.

For 2012, Muzzy has added several new broadheads to the already popular line. According to Fred Settles, chief operating officer at Muzzy, the new CrossKill hunting head designed specifically for crossbow users is an accurate, dependable and deadly broadhead with a 1-3/16 inch cutting diameter. He said the ultra-compact, stainless-steel ferrule gives this three blade broadhead field-point accuracy with fixed-blade reliability even at speeds over 400 fps. The CrossKill is available in 125 grain and 150 grain weights.

Fred Eichler has worked closely with Muzzy engineers to maximize the performance and penetration of the new for 2012 Fred Eichler Signature

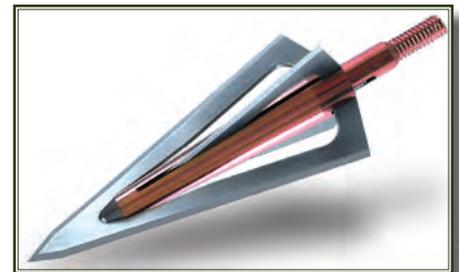


Hunters have asked for a super compact three blade broadhead and Muzzy responded with the new MX-3 in either a 75 or 125 grain weight. Both models use the same blades but it's the ferrules that make the weight difference. This gold ferrule is the lighter aluminum.



At left, Muzzy's new DX-3 broadhead features a 1-1/4 inch cutting diameter and blade thickness of .025 of an inch. The DX-3 is designed to work with Easton's new Deep Six System utilizing X and G series micro diameter shafts.

For 2012, Muzzy has introduced the new CrossKill broadhead for use specifically with crossbows. The CrossKill (above right) has a very short, compact stainless steel ferrule for extreme strength even when shot at over 400 fps. It is available in either 125 grain or 150 grain weights.



Muzzy took the Phantom design, lengthened the blades, swept the blade angle back and gave it a tanto-style tip. These modifications resulted in the new for 2012, Fred Eichler Signature Series Phantom, a deadly-accurate 150 grain four blade broadhead or a 125 grain two blade broadhead both with a 1-1/8 inch cutting diameter. These broadheads can be used by either compound or traditional fans.

Series Phantom broadhead. This head is designed for compound shooters and traditional shooters who want increased penetration as well as enhanced performance from a cut on contact broadhead. The razor sharp blades of this new offering can be easily resharpened and have a 1-1/8 inch cutting diameter. The Fred Eichler Series broadhead comes in a 125 grain two blade head or a four blade 150 grain head.

The Muzzy head most likely to create a stir this year is the new DX-3 designed to work with Easton's new Deep Six System. The DX-3 works in combination with the new Deep Six inserts and Easton's ultra micro diameter Injexion, Axis and Full Metal Jacket arrows. The 100 grain, three blade DX-3 features a tapered ferrule partnered with a modified shank and slimmer thread to make it compatible with the Deep Six System. Deep Six inserts provide 25 percent more thread engagement to keep points secure inside inserts. The DX-3, when coupled with Easton's Deep Six System, produces less wind drag than other larger broadhead and arrow combinations and this results in increased accuracy and deeper penetration. Contact Muzzy Products toll free at (866) 387-9307.

### Alaska Bowhunting Supply

A few years ago, Ed Schliff, president of Alaska Bowhunting Supply (ABS) collaborated with noted bowhunter Dr. Ed Ashby about making what Ashby considered the definitive broadhead for big and dangerous game animals. After years of testing and reporting, Ashby developed a list of mandatory



**The Ashby Shadow by Alaska Bowhunting Supply is currently available as a 315 grain one piece hunting head with the bevel either on the right or left. The company is currently working on a smaller but equally lethal 150 grain version.**

design aspects that needed to be incorporated into developing what he felt was the ultimate broadhead. Schliff took that list and for 18 months engineered, tested, and redesigned a prototype head until he got it right. The result Schliff calls the "Ashby"; a one-piece broadhead measuring 1-1/8 x 2-5/8 inches and forged from a solid piece of 440C cutlery grade stainless steel. Schliff says there are no weak points in this head which makes it suited for the largest African game. The Ashby features a bone breaking tanto tip and all edges, including the trailing edges, are honed razor sharp at the factory. The



**Customers going after really big game such as Cape Buffalo, will be well advised to consider the Nanook (left) from Alaska Bowhunting Supply. This convex broadhead has blades .072 of an inch thick with a 25 degree single bevel and a tanto tip. Nanook broadheads come three to a pack and weigh 315 grains each.**

**The Samurai (right) is yet another quality offering from Alaska Bowhunting Supply and like the Massai is a two piece hunting head with an aircraft grade aluminum ferrule and 440C stainless steel blades. They are razor sharp right from the package.**

Ashby is available as a 315 grain head only. Shooters can get the head with either a right or left hand blade bevel.

The second big game broadhead offered by ABS is the Nanook, who according to Inuit folklore, is the most dangerous predator in the North. Like the Ashby, the Nanook is forged from a single piece of 440C cutlery grade stainless steel with a Rockwell hardness of 58. The Nanook features a convex edge design for top performance on the largest of Alaskan or African game. This head is offered with a 25 degree single bevel and a tanto tip. Each head weighs 315 grains and is available in a three pack.

The third offering in the ABS big game series is the Maasai, a two piece broadhead based on the popular convex single bevel Nanook. The Maasai gives shooters the option of five weights in order to meet any bow hunting situation. These heads are razor sharp



right from the package and are suitable for any big game animal on the face of the earth. These single bevel edge hunting heads are available in three packs and come in 200, 175, 150,

**The Silver Flame and Silver Flame XL from Alaska Bowhunting Supply are crafted from 440 C stainless steel but are double beveled like most hunting knives. The original Silver Flame is 1-1/8 of an inch wide while this Silver Flame XL is 2 inches.**



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125 and 100 grain weights. The blades are crafted from 440C stainless steel and sub zero quenched for a Rockwell hardness of 58. The ferrule is crafted from aircraft grade aluminum while stainless steel screws hold the blade securely in place. The screw-in design of this head fits all standard threaded inserts.

Alaska Bowhunting Supply named its new straight-edged two-piece broadhead Samurai because legend says the sword of the Samurai never failed. Like the other ABS broadheads, the Samurai has a bone shattering tanto tip along with razor sharp single bevel blade edges. Like the other heads in this big game line, the Samurai features 440C stainless steel blades with a Rockwell hardness of 58. The straight edge design of the blades has a 25 degree single bevel and a tanto tip. The Samurai is available in 200, 175, 150, 125 and 100 grains weights and comes razor sharp ready to hunt.

For those shooters preferring a double bevel broadhead design, the Silver Flame by ABS may be the answer. Silver Flame broadheads, sometimes called German Kinetics broadheads, claim to be the toughest, sharpest, most lethal double bevel broadheads in existence. With sub zero quenched 440C stainless steel blades, the Silver Flame offers shooters massive .071 of an inch thick blades with a cut on contact convex edge design. The Silver Flame is available in 210, 180, 150, 125 and 100 grain weights while the Silver

Flame XL is available in 125, 150, and 180 grain weights. Both have a screw in design to fit threaded inserts. For additional information on any of these heads contact the Alaska Bowhunter Supply toll free order hot line at (888) 697-9828 or for customer sales and service call the firm at (206) 453-3821.

### New Archery Products (NAP)

When Andy Simo, an aeronautical engineer by training, decided to open his own archery manufacturing business in 1971 he set out to design and manufacture archery products that were completely new to the archery industry and not to just tweak what was already available. Today, NAP offers many innovative archery products upon which shooters have come to rely including a wide range of fixed blade hunting heads that account for an untold number of game animals taken by hunters.

The Thunderhead is the company's best selling broadhead and recognized as one of the finest fixed blade broadheads ever created. The Thunderhead continues to sell well because production costs are kept low and the company is able to hold the line on price making the Thunderheads appealing for many hunters. Most other broadheads on the market come three to a package and sell for \$30. Thunderheads sell for the same price but come six to the package making hunters realize they are getting a high quality

broadhead at an affordable price. The Thunderhead's Micro Grooved Slimline ferrule greatly increases flight accuracy and penetration power while a special Diamize sharpening process creates one of the sharpest blades in the industry. Hunters shooting bows with light or heavy draw weights have a choice of hunting heads because the Thunderhead comes in weights of 85, 100 and 125 grains. The 85 grain model has a 1-1/8 inch cutting diameter while the 100 and 125 grain models have a cutting diameter of 1-3/16 inches.

It's difficult to imagine how NAP could have improved on the Thunderhead but they seem to have pulled it off in offering the Thunderhead XP with its Micro Grooved Slimline ferrule which increases flight accuracy and penetration. The most significant feature of this broadhead is the new cut on contact point that increases penetration even from high angle shots. The Thunderhead XP comes in either a 100 grain model with a 1-1/8 inch cutting diameter or a 125 grain model with a 1-3/16 inch cutting diameter.

The Thunderhead Edge has all the features of the original Thunderhead but offers an exclusive straight/serrated blade technology that NAP's Director of Engineering Bob Mizek says is devastating on hide and flesh. "Because of the blade design, this head passes through bone like a hot knife through butter," Mizek told us. He noted the offset blades of this broadhead produce



*For those shooters preferring a hunting head with a partially serrated blade, NAP's Thunderhead Edge may be the one they are looking for. The Edge, like this company's other hunting heads, has been extensively field tested for proven reliability.*



*The Hellrazor by New Archery Products offers one piece all steel construction and a cut on contact design. It is designed for those shooting bows with a reduced draw weight or a short draw length yet will perform well when shot from even the fastest setups.*



*The D6 Thunderhead Razor broadhead is new for 2012 and is one of four new NAP broadheads (two fixed and two mechanical) designed to work in partnership with Easton's new Carbon Injexion micro diameter arrows. This fixed, three blade, 100 grain broadhead has a cutting diameter of 1-1/8 inches and comes fully assembled.*

gaping exit holes and massive blood trails while its proven design and precision manufacturing deliver tack-driving accuracy. He also noted the patented Trophy Tip point is specifically designed for maximum bone splitting power and unbelievable durability. The 100 grain Edge with its 1-1/8 inch cutting diameter comes fully assembled and ready to shoot.

Last year, NAP introduced the Thunderhead Razor, which like the Edge, comes ready to shoot with blades locked in place. The Razor features the same Trophy Tip point and offset blade alignment as the Edge but has straight-edge rather than serrated blades. The Razor comes in a 100 grain weight and has a 1-1/8 inch cutting diameter.

NAP's HellRazor is known for combining extreme sharpness and durability with excellent penetration and is another good seller because it can be resharpened. "This makes it an extremely popular head with hunters who want to save money and who like spending time working on their equipment. Today, many hunters want high performance at an affordable price and they get it with the HellRazor," Mizek noted. "The HellRazor gives them scalpel sharp blades and costs up to 50 percent less than many other broadheads," he added.

Mizek went on to say the HellRazor offers shooters an ultra strong one piece design with no loose blades ever. "The HellRazor is CAD designed and offers all stainless steel construction for maximum strength and optimum flight characteristics while a Photon blade bonding process laser welds the HellRazor to produce

exceptional strength and consistency," he explained. Hunters will appreciate how the non-replaceable blades can be resharpened multiple times by using any good flat, fine grit 1-1/2 by 4 inch sharpening stone. It should be noted NAP offers a dedicated practice head sold in three packs to fine tune your customer's setup. The HellRazor comes in a 100 and 125 grain model and both feature a 1-1/8 inch cutting diameter.

For 2012, NAP in collaboration with Easton Technical Products, has developed an internal fit component system that enables the use of the ultra small diameter X and G series Easton shafts. These small diameter shafts are paired with two new NAP fixed blade broadheads, the Deep Six Big Nasty and Deep Six Razor. These new broadheads have a boat-tail taper that matches the shaft diameter of Easton's new shafts resulting in less friction and deeper penetration because the small shafts follow behind the broadhead ferrule. The new shaft and broadhead combination provides hunters with a shaft and broadhead system that aligns the broadhead with the shaft more precisely than was previously possible.

According to Mizek, Deep Six is the new standard in high performance for the modern day bowhunter. "Until the development of Deep Six technology, conventional arrow insert systems were too large to allow hunting with micro diameter shafts, like those used by world-class target competitors. Micro diameter arrows provide more kinetic and focused energy downrange and are less prone to wind plane during extreme crosswinds. Now, this same performance level is available in arrows designed specifically for

hunting," Mizek told us.

To compliment Easton's new technology, NAP's D6 Big Nasty is a cut-on-contact all stainless steel three blade, 100 grain broadhead with a big 1-1/8 of an inch cutting diameter. The over-the-shaft broadhead technology promises the hunter extreme penetration on game and increased flight characteristics. Mizek said the new D6 Big Nasty design increases the strength of the broadhead as it actually utilizes the Injexion arrow shaft as the ferrule. This gives the D6 Big Nasty an extreme broadhead to arrow alignment, increasing speed and accuracy.

Both new broadheads use a proprietary new thread design that works in concert with the insert on Easton's X and G series micro-diameter shafts. Conventional points tend to rattle loose and the new Deep Six shaft and broadhead combination provides 25 percent more thread engagement to keep the point secure inside the insert. In addition, the stainless steel material used in the new insert is 65 percent stronger than conventional aluminum components.

The first thing shooters will notice is how the new Deep Six fixed blade broadheads taper to match the shaft diameter resulting in less friction and drag during flight. The new micro diameter shafts track behind the broadhead ferrules with less friction and more pass through shots.

NAP's second new broadhead offering for 2012 is the D6 Thunderhead Razor, a broadhead also engineered and designed for Easton Injexion, Axis and Full Metal Jacket arrow shafts. This fixed three blade, 100 grain broadhead comes fully assembled and ready to



**NAP's new D6 Big Nasty design increases the strength of the broadhead as it utilizes the Injexion arrow shaft as the ferrule giving it an precision broadhead to arrow alignment to increase speed and accuracy.**

shoot and has a cutting diameter of 1-1/8 of an inch. The D6 Razor features a new, longer trophy tip and over-bore technology in the design of the ferrule. This boat-tail slim ferrule design creates a channel wider than the shaft, decreasing friction for lethal penetration and more game stopping pass throughs. The D6 Thunderhead Razor features off-set straight-edge blades with NAP's renowned sharpness. The increased thread engagement of the D6 broadheads provide a more defined fit of the broadhead to insert while attaining a more precise arrow alignment. For additional information contact New Archery Products toll free at (800) 323-1279.

### Slick Trick

According to company owner Gary Cooper, Slick Trick broadheads offer shooters strength, reliability, deadly penetration and incredible accuracy. Cooper told *ArrowTrade* that accuracy is the number one requirement for any broadhead and if a head wasn't accurate, nothing else really mattered. Because there are inherent accuracy problems associated with broadheads with long ferrules, Cooper designed his broadheads with a short ferrule reasoning the shorter ferrule would have less of a run out than a longer one and thus, be straighter once on the shaft.

In addition, Cooper felt a broadhead, with shorter blades, would significantly reduce the overall surface area of the hunting head and by combining these two innovations he could

produce a broadhead inherently more accurate and more forgiving than many others. Cooper explained a broadhead with a short ferrule has a tendency to plough through bone because it is stiffer and stronger, and presents less surface friction that slows penetration in dense material.

The Standard Slick Trick broadhead has a Super Steel ferrule and comes in 85, 100 or 125 grain weight. The Standard has a four-edge bone splitting tip and two, 1 inch blades that provide a total blade cut of 2 inches. Cooper said this head is a terrific all around performer and outperforms three blade heads with a 1-1/8 inch cutting diameter.

The Slick Trick Magnum has a 1-1/8 inch cutting diameter giving it a total 2-1/4 inch cut. Cooper said this was the first super short broadhead offered in 2000 and that it flies as well as a mechanical broadhead. Cooper noted many bowhunters were amazed at the size of the holes the Magnum created on game animals and coined the term "slug holes" after seeing how large they were. The stainless steel Lutz Mercedes blades of the Magnum are German made and are .035 of an inch thick. It comes in a three pack and is available in a 100 or 125 grain weight.

The four blade Razortrick is patterned after an old Indian arrowhead and is an outstanding low energy hunting head. It is considered a great hog penetrator because its thick, .040 inch German made Lutz Mercedes blades and strong, super steel ferrule allow it to easily cut through tough hide and

flesh. The Razortrick has a 2 inch total blade cut and is available in either a 100 or 125 grain weight.

Slick Trick took the original Grizztrick broadhead, redesigned it, and came out with the Grizztrick 2 in 2011. Cooper said the new Grizztrick 2 is a big, mean broadhead that cuts a larger hole than a three blade mechanical broadhead. "The Grizz 2 has exceptional fixed strength and delivers excellent penetration. With its 1-1/4 inch cut, this head puts huge holes through animals and produces great blood trails," he told us.

The ferrule of the Grizztrick 2 has been streamlined to make it fly well from any bow setup while delivering field point accuracy. Like the other broadheads in the Slick Trick line, the Grizztrick 2 has .035 of an inch thick stainless steel German made Lutz Mercedes blades and is offered in 100 and 125 grain weights. With a longer, slimmer nose, the Grizztrick 2 is more forgiving of arrow shafts with less than ideal spine or when shot out of speed bows.

With a 1-1/4 inch cutting diameter, the four blade Grizztrick 2 actually cuts more flesh than a 1-1/2 inch diameter three blade mechanical. It should be noted the company will be advertising it as having the flight characteristics and cutting diameter of a three blade mechanical broadhead, but with the superior strength, penetration, and reliability of a fixed head.

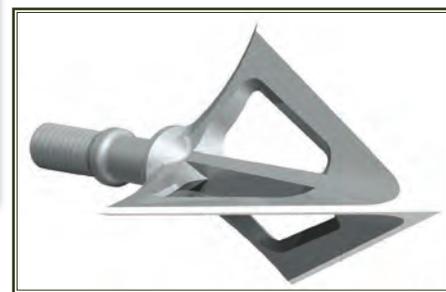
The XBow Trick is a 100 percent steel broadhead designed specifically for crossbow use. Last year it was only offered in a 175 grain weight but for 2012, it will be available as a 150 grain head as well. The XBow 150 grain has the same high quality German stainless



**The Slick Trick Razor Trick is a three blade cut on contact broadhead that offers shooters a 1-1/8 x 7/8 inch cut. The thick .040 inch main and bleeder blades are crafted from Lutz Solingen super sharp steel. This head is very popular among hog hunters because of the way it slices through thick hide.**



**With a completely new ferrule and blades, the Grizztrick 2 has been redesigned to deliver field point flight and great strength when shot out of even the fastest bows. The tip is longer and more slender to be more forgiving when shot from lesser tuned bows, and the blade geometry is stronger.**



**The Montec by G5 is a broadhead design consisting of one piece of steel with no components to assemble or replace. It comes in 85, 100 and 125 grain weights.**

steel Lutz Mercedes blades as the company's other hunting heads but uses a different, lighter ferrule. The XBow has a total cutting diameter of 2-1/4 inches and comes in a three pack.

This year, Slick Trick has introduced the new Viper Trick which offers shooters main and bleeder blades coupled with a cut on contact tip. The main blade slides into the edge of the ferrule tip while the bleeder blade fits in behind it making this design as strong as or stronger than many fixed blade heads currently on the market. The blade edges of the Viper are honed to a 20 degree bevel to provide excellent strength and sharpness. For additional information contact Slick Trick Broadheads at (870) 934-0131.

### G5

This is the eleventh year G5 has been in business and the Memphis, Michigan based company attributes this success to having a passion for the archery industry and plain hard work. The company makes a number of quality archery products including sights, quivers, rests and mechanical broadheads as well as several models of fixed blade broadheads.

The Striker and Striker Magnum are premium replaceable blade broadheads with a cut on contact all steel design. Both use super sharp Lutz blades and are spin tested for accuracy. Both heads offer the Anix Blade Locking System that provides 45 degrees of locking power on each blade. G5 says this ensures the broadhead stays intact



**With a cut on contact design and a large 1-1/2 inch cutting diameter, the 125 grain G5 Striker Magnum is recommended for bear, deer and even turkeys. Sharp, .030 of an inch thick Lutz steel blades makes devastating entrance and exit wounds. As with the Striker, the Anix locking system ensures the blades will never come loose.**

no matter what it hits. Both the Striker and Striker Magnum are made of steel and blade replacement kits are available.

G5 introduced the Montec CS in 2011 and it has quickly become a favorite with many hunters. The Montec CS is manufactured from carbon steel using G5's patented metal injection molding process and is then 100 percent spin tested to ensure accuracy. The new Montec CS is 25 percent sharper than its original stainless steel design. Hunters like it because the blades can easily be re-sharpened after repeated use.

The Montec offers shooters a fool-proof design combining one piece, all steel construction and diamond cut sharpness. It is available in 85, 100 and 125 grain weights and is spin tested for accuracy. Like the Montec CS, the Montec offers a cut on contact design and has no components to assemble or replace.

A Montec Pre Season model which is dimensionally identical to the Montec is also available. The Pre Season model provides predictable characteristics of flight and accuracy when using either broadhead. The Pre Season model has rounded edges making it safe for practice and easy on targets. For additional information contact the company at (866) 456-8836.

### Wasp Archery Products Inc.

Wasp Archery was founded in 1971 by Richard Maleski and after his death in 2009, his company was purchased by the Weaver family of Harrisburg, Pennsylvania. Guy Weaver, his wife Micki and son Matthew along with their son Zachary and his wife Sarah



**The Wasp Sharp Shooter has a 1 inch cutting diameter and heavy .040 of an inch thick main blades and .027 bleeder blades. Customers will appreciate that all blades are replaceable.**

have been able to breathe new life into a company whose very name once was synonymous with "broadhead." To turn the company around, Wasp has new branding, a new logo and all new packaging for an up to date look. Currently Wasp offers seven different fixed blade broadhead models which include two crossbow models.

The Boss features a shortened aerodynamic ferrule, reduced blade surface area and a SST tip alignment that puts the edges of the tips in line with the blades. The result is a very forgiving arrow that accurately delivers a sharp, strong, deep penetrating broadhead. The Boss is packaged in a 100 or 125 grain weight and comes in a three pack that includes two sets of replacement blades. There is a four blade 100 grain version available as well.

The company's second offering is the SharpShooter featuring a self-aligning blade locking system with a hardened stainless steel forward section that aligns the main blade to the ferrule. The SharpShooter has a 1 inch cutting diameter and .040 of an inch thick



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main blade along with .027 inch thick bleeder blades. Hunters will appreciate that all blades are replaceable. The 100 grain SharpShooter comes in a three pack.

The Wasp Hammer SST remains popular among bowhunters shooting fixed blade broadheads. Featuring the SST smart tip, Wasp says the Hammer is tough enough to punch through steel yet offers superior arrow flight. The company claims this is one of the strongest and best penetrating broadheads ever developed. The three blade Hammer SST is available in 75, 85, 90, 100, and 125 grain weights and comes in a three pack that includes two sets of replacement blades.

The Bullet is the fourth Wasp fixed blade offering and delivers a 1 inch cutting diameter and .027 of an inch thick stainless steel blades, combined with the SST tip that provides superior flight characteristics. Because of its shape, the company says the Bullet is one of the most forgiving and accurate broadheads available today. The Bullet is available in 75 or 100 grain weights and comes in a three pack that includes two sets of replacement blades.

Wasp crossbow broadheads feature aerodynamic ferrules and a durable trocar tip and come in two styles, the 100 grain Boss or the 150 grain Sledgehammer. The three blade 150 grain Sledgehammer has a 1-1/16 inch cutting diameter and is the heavier of the two due to its stainless steel ferrule. The three blade Boss with its red anodized ferrule, is lighter at 100 grains but has a slightly larger 1-1/8 of an inch cutting diameter. Both heads have blades that are .027 of an inch



*A sledge hammer is used for heavy duty work and the Wasp Sledgehammer crossbow head is no exception. Weighing a hefty 150 grains, this head gets its weight from a stainless steel ferrule that the company says ploughs through bone with ease.*

thick. Shooters will like the idea that both heads come three to a pack and the pack includes two sets of replacement blades.

New this year is the Queen, a broadhead designed especially for female archers. At 75 grains, the Wasp Queen is a good choice for women shooting bows with a draw weight less than 55 pounds. This broadhead has a 1 inch cutting diameter and is tipped with Wasp's famous Stainless Smart Tip. Three razor-sharp blades complete the package and result in what the company says is the most lethal broadhead to be put in the hands of women today. For more information on these or any other Wasp products or to place an order call them at (860) 283-0246.

### Thundervalley Archery

Thundervalley Archery remains committed to supplying the needs of the traditional archer including information for making traditional archery equipment. But they're also courting the crossbow market with their new lines of broadheads. The company purchased the manufacturing and distribution rights to all Magnus glue-on broadheads plus the Deadly Snuffer three blade broadhead because the owners felt the heads are simple and work well. With no moving parts to fail, the cut on contact design of these heads is deadly and they are relatively inexpensive.

Snuffer three blade broadheads have sharp, cut on contact points to help provide deep penetration and put big holes through game. Snuffers come as a screw in model that fits all carbon



*The Queen is Wasp's latest addition to its broadhead line. This new broadhead is not only strong, sharp and deep-penetrating, but stylish as well. The aerodynamic stainless-steel ferrule is bright pink and illustrates that it was developed specifically for women bowhunters. Wasp Queen broadheads come three to a package and include two sets of replacement blades.*

and aluminum arrows or as a glue-on version for the traditional archer.

Magnus Classic broadheads have a well deserved reputation for putting big game animals down for keeps because they're sharp right out of the package. They are available in two blade or four blade configuration in 85 to 160 grain weights. They are designed to work every time. Because the blades are fixed, they never fail to open and they cut on contact. Contact Thundervalley Archery at (337) 463-6420.

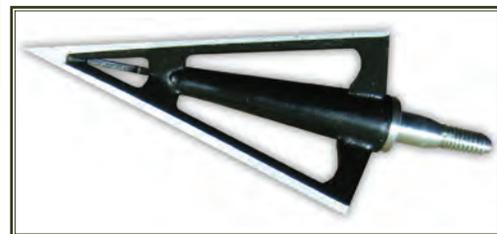
### Trophy Taker

Trophy Taker, located in Plains, Montana, designs and distributes archery products for the serious hunter. Their customers include dealers and distributors across the United States and around the globe. Achieving success in the field requires a fast, accurate broadhead that cuts a big wound channel yet remains quiet in flight. The company says their Terminal T-Lock Broadheads fly like field points, cut large holes, penetrate deeper and come with a guarantee of no lost blades.

The Terminal T-Lock broadhead



*Introduced in 1984, the Magnus Classic cut-on-contact broadhead is tough to beat. These versatile glue-on and screw-in broadheads can be used by compound or traditional bowhunters for any big game hunting. The Magnus comes in a four blade head in either a 125 or 140 grain weight or as a two blade head in either 100 or 125 grain weights.*



*The Snuffer broadhead by Thundervalley Archery comes in 125, 150, 175 and 185 grain weights to make it one of the most versatile heads in the Thundervalley line.*

features a single piece cut on contact ferrule and non vented blades for bone breaking strength. This durability is due to the T-Lock blade to ferrule connection which guarantees the blades will never be lost after hitting a game animal. This broadhead is made entirely of heat treated stainless steel for high impact strength while the single blade design cuts larger entry and exit holes.

The unique shape of Trophy Taker's Shuttle T-Lock broadhead makes it stand out from many of the other heads on the market but its performance and large wound channel is what catches the attention of hunters. The company claims the thick blades of this head can crush bone while its contoured non vented stealthy blade design is super quiet in flight and promises not to spook game. For more information on Trophy Taker products contact the firm at (406) 826-0600.

### Summary

When I started bowhunting back in the late 1950's, as far as I knew the only broadhead available was the Bear Razorhead. Buy an arrow and it came with a glued on Razorhead. Who knew? Today the number of broadheads on the market has increased dramatically and dozens of different broadhead styles are now available for every method of hunting whether with a long bow, compound or cross bow.

If complexity is the enemy of reliability that explains why many hunters prefer using a quality fixed blade hunting head. Unlike a mechanical broadhead, a fixed-blade broadhead doesn't have to use part of the arrow's energy in the act of opening the blades, which in my mind ensures a better chance of



**The Trophy Taker Terminal T-Lock uses a single-piece, cut-on-contact stainless steel ferrule and non-vented blades. Thick .041 of an inch stainless blades slide into the ferrule on T-Lock bases.**

a complete pass though.

The broadhead at the end of the arrow is what brings game home and it must be sharp, create a big hole, penetrate deeply and above all fly true. Fortunately there is no shortage of broadheads that do just that. Modern fixed blade broadheads are crafted with the utmost precision using the finest material available for the purpose so they are somewhat costly. However in addition to flying well and being ultra sharp, they are tough and reusable.

Many dealers find most of their customers are loyal to one type of broadhead and don't want to change. But you can still offer a variety of heads and suggest that customers may want to share broadhead sampling expenses with a friend so they can then better determine which head is best for them. Each style of broadhead has its pros and cons and there is nothing wrong with a dealer helping a customer decide what type of broadhead works best with their particular set up.

Before deciding which broadheads to carry dealers can consider quality, durability and flight characteristics of the hunting head as well as its lethality on game and the kind of margins they generate. They must also consider the demand for certain heads by their customers and the amount of advertising support they can expect from the manufacturer. Hunters may not always listen to a dealer's advice but they can be given the information they need to make their next broadhead purchase an informed one. ←



**With an unusual blend of aerodynamics and cutting width the Trophy Taker Shuttle T-Lock broadhead features a tapered, non vented curved blade design. A sharp chisel-style tip initiates penetration, and the .041 of an inch thick blades finish the job. The T-Lock Shuttle is available in a 100 grain head with a 1-1/8 inch cutting diameter or as a heavier 125 grain head with a 1-3/16 inch cutting diameter.**




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# Lighter Side

by John Kasun

## Stop the world, I want to get off

I noticed at the recent ATA Show that everyone was constantly looking down. It took me a few minutes to catch on but they were checking their Blackberrys, Blueberrys, I-Phones, Droids, Ghost or whatever. When we were talking they were tapping the screen as information flipped back and forth. Everyone seemed anxious to tell me about their new phone which had 10 gazillion mega-hertz and was a 57 mega-pixel camera. One gentleman even told me he could check his trail camera from his office and if anyone touched his treestand an alarm sounded. Not only was I overwhelmed but my head hurt from all the technical talk. You must realize that my cell phone is so old it still has a crank so you could say I am slightly out of touch.

When it comes to technology I am one of those guys that care more about what I can do with it and not as much with what makes it work. I still remember the day I went shopping for my first computer. A smiling salesman approached and asked if he could help me? I said, "I need a computer to write my articles so I don't have to use an ink eraser or carbon paper ever again. (Just in case you don't know what carbon paper is I suggest you turn to another section of the magazine and not waste your time reading the rest of this column as you probably won't understand my frustration with technology.) The salesman immediately started to talk to me about megahertz, bytes, CRT monitors and dual disk floppy drives. He got so excited when he talked about this technical stuff it was obvious to me that he had never had sex. After what seemed like a 30 minute non-stop rehearsed sales pitch he finally paused for a breath. Seizing the opportunity I quickly said, "Look I don't care if there are little Chinese guys inside that thing running back and forth handing off notes written on rice paper all I want to do is be able to type."

That was the start of the technical side of my life and in many ways it hasn't got a whole lot better. It seems I am spending all of my time unplugging, rebooting or reformatting something. Recently I purchased a wireless router. If you don't know what a wireless router is thank your lucky stars and if you want my advice don't find out. A wireless router is like a kidney stone, it is more fun if someone else has it.

For those of you that are a glutton for punishment I will explain. A wireless router is a device you hook to your computer that allows you to connect to another computer or printer without using a wire commonly know as a USB cord (if you don't know don't ask because I can't explain it). For



some reason that I no longer understand I decided to eliminate that simple wire and buy a wireless router. When I asked about hooking it up the salesman at the computer store said, "There is nothing to it. As a matter of fact we call them 'Plug and Play.'" For you that are technically challenged "Plug and Play" means just plug it in and it works. Wrong! I quickly learned when I got home that somehow "Plug and Play" turned into "Plug and Pray". Nothing worked and after spending three hours and four phone calls to the computer store I was told my only hope was to call Technical Support. For those of you that are not familiar with the term Technical Support drop immediately

to your knees and thank God.

Technical Support is really Hell on Earth and it is physically located in India. Against my better judgment I made the call to Technical Support and was introduced to a lovely, polite Indian girl name Linda. I doubt they really have any Linda's in India and suspect that name was just for the benefit of people like me calling from America. I spent so much time on the phone with Linda that I was sure I was going to have to ask her to marry me to protect her honor. However in spite of the time spent and the countless times I rebooted, unplugged and deleted nothing worked. With my blood pressure soaring I decided to cut the torture short and simply return the router to the computer store and scratch the whole idea.

My wife, sensing I was upset from my bloodshot eyes and the drool dripping from my mouth decided to go with me as she sensed I was in no condition to drive without adult supervision. Now I made the second mistake of the day as we took her new car with a built-in voice control computer system. As we pulled from the driveway I searched for the knob to turn the radio off. Not finding it quickly I simply asked, "How do you turn the radio off?" "No problem," she said wanting to show off her new toy. "Just say "Radio off". "Radio off", I said. A female voice sounding a lot like Linda from India said, "Fan on high." "Radio off," I repeated. "Volume up," was the reply. With the fan whirling and the radio volume blasting I tried one more time as I loudly said. "Radio off." "Make a U-turn if possible," came the reply from the computer located somewhere within the dashboard. "You must not be saying it right," my wife shouted over the blasting radio, whirling fan and blinking turn signal.

Suddenly an eerie calm came over me as I thought, "I wonder if they still make ink erasers and carbon paper?" Stop the world, I want to get off.



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