

TESTING THE LIMITS OF ARCHERY EQUIPMENT

Plus:

The Bowhunting Round Table
Mid-Priced Bow Sights
2012 Crossbow Lines-Part II
Tuning Traditional Bows
Scent Control Clothing & Liquids
What Customers Want to Know
Selling Camo for Women & Youth
Marketing Through Social Media

ARROWTRADE™

July 2012

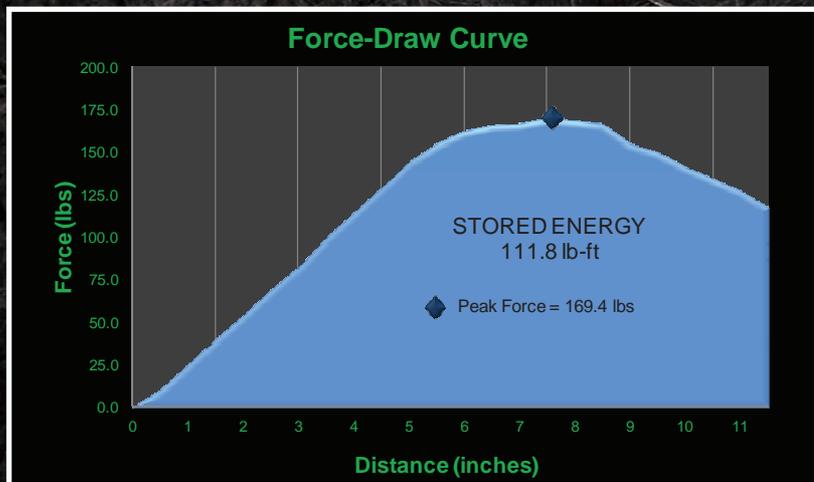
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COVER FOCUS Testing the Limits of Equipment

Our cover design draws attention to the fact that *ArrowTrade* has become the leading source of unbiased tests for archery equipment. In this issue alone, 24 pages are devoted to evaluating seven premium bows, one popular target and the mid-priced crossbow used to generate this force-draw curve.



ARROWTRADE
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Business Editor John Kasun not only is an avid crossbow hunter, he's a popular seminar speaker on this segment of hunting equipment. *ArrowTrade* asked him to cover the highlights of seven of today's best-known brands.





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Scent control products are a big part of the hunting market, and Mike Raykovicz does a thorough job of researching both garments and sprays. At right is the Head Hunter Jacket from scent pioneer Scent-Lok, in the Vertigo design the Michigan firm developed.



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From The Publisher

Broadening Our Base of Readership

I used this July issue's cover design by my daughter, Anne Dehn, to draw attention to something *ArrowTrade* has been doing better than any other publication, website or blog. I'm talking about publishing scientific, objective tests of archery equipment. While we do that testing for our industry audience, it naturally would be very interesting to the archer and bowhunter, if they had access to it.

ArrowTrade goes to the bowhunting industry audience free of charge, as a controlled circulation magazine that is supported solely by advertising revenue. Consumer publications that depend in part on subscription revenue have to be careful about how much content they make available through the internet: They don't want to give so much content away that it reduces the incentive for people to subscribe.

We don't have that concern here at *ArrowTrade*, so we are now launching an ambitious effort to develop a world-wide web audience for our equipment content. You might have seen a series of ads in this publication urging dealers to "do your customers a favor" and tell them about arrowtrademag.com, our digital companion issue.

Now we're broadening that campaign, by advertising in other publications, letting people know that *ArrowTrade* is the best source for in-depth archery equipment coverage. Our ads are already appearing in the *U.S. & International Archer* magazine, published by my friend Arlyne Rhode. You'll also see them appearing in the glossy *Bow International* published in the United Kingdom, a magazine with a heavy following of English-speaking target archers throughout Europe. Bilingual French speakers will now see *ArrowTrade* promoted in *tir a l'Arc*, a magazine that caters to competitors, recreational shooters and those with an interest in the historical side of archery. On the African continent, we're reaching out to archers through the pages of *Africa's Bowhunter*.

We are not changing our editorial focus here at *ArrowTrade* Magazine. The publication will continue to be produced for the bowhunting industry, with most of the content directed to the archery retailer. However, the test work we're doing and the other clothing and equipment features represent both a considerable investment on our part and a gold mine of information for the consumer. It just makes sense to take advantage of the internet to bring that information to a wider audience.

Thanks to the sophisticated website developed for us by David Farlow and his team at EZ Flip Magazines, anyone with a high speed connection has access not only to the current issue but to years worth of back issues. And we haven't forgotten the rural residents in America or abroad who may not have a satellite dish on the roof or a broadband cable in the street: If they can go online through a telephone modem, they can access almost our entire content at arrowtrademagazine.com through simple PDF downloads.

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Clean-Shot Archery's New Inserts



Clean-Shot Archery has developed a new type of arrow insert. The Lock-n-Load Inserts shun the messy and time consuming tradition of gluing inserts into arrow or crossbow bolt shafts. Lock-n-Load Inserts are glueless, reusable, and most importantly, they are easy to install and index.

"Our Spot-On® Laser Calibration Point has to be indexed and 'locked' in place to allow the laser beam to be adjusted up or down to compensate for the drop of the arrow or bolt," explained Clean-Shot Founder and CEO Larry Bay. The standard glue-in inserts didn't allow the archer to fine tune the position of their broadheads to their shafts, so we invented the Spot-On Lock-n-Load Insert technology to address this issue."

Bay said indexing your blades to your vanes improves overall arrow accuracy and provides predictable "consistent" arrow flight between all of the arrows in your quiver.

The Lock-n-Load Inserts work like a molly bolt. The archer simply places the insert in the shaft, and with a few turns of an allen wrench the internal set screw expands precision-milled flanges to grip the inside of the shaft.

For archery shops that build arrows, Bay said these inserts will save time and resources. "They install in minutes and the customer can leave the shop with arrows ready to shoot. If you make a mistake and need to cut the arrow again, no problem, simply unscrew the insert and remove; then re-cut the arrow and repeat the installation."

Lock-n-Load Inserts are available for retail sales in a six or 12 pack and also available in bulk for shop owners in the most popular sizes.

For more information about Spot-On products, visit the website at www.clean-shot.com or call (800) 242-9023.



Crossbow Quiver Mount

Bohning has taken a totally new approach to the problem of mounting quivers to crossbows. Up until now most crossbow quivers have mounted near the stirrup, adding weight to an already front-heavy unit. The traditional method of having the quiver mounted at a right angle means the arrows are projecting out both ends on today's more compact crossbows.

As part of Bohning's new UltraMag Crossbow Accessory line, the Lake City, Michigan firm developed a Topmount Crossbow Quiver Mounting System. It dovetail attaches to the scope mounting rail, positioning the quiver along the shooting rail. There's less bulk, better balance, and easier access. Plus the arrows are better protected: You can set the crossbow down with quiver attached and not have the weight resting on the arrows.

For pricing information, contact Bohning at (231) 229-4247.

Backpacker Sling

Heavy Hauler Outdoor Gear has developed a way to make your customer's "haul" a lot easier. This year it introduced the Backpacker Crossbow and Gun sling.

"The biggest obstacle facing many crossbow hunters is how to carry a bow and how to carry it with ease," a company spokesman said. "No longer does one need to concern themselves with it slipping off your shoulder while hunting and navigating difficult terrain. With the neoprene and nylon webbing dual shoulder design in Realtree camo, you can now walk 100 percent hands free, allowing you to hunt in comfort, carry extra gear, or better drag your trophy out of the woods. It also works tremendously well on any rifle or shotgun."

You can find out more at www.HeavyHaulerOutdoorGear.com or can place an order through Kinsey's.

Dave Holt DVD Released

Bowhunting in Africa with Dave Holt and Friends, a High Country Publishers DVD, is available now.

Don't expect ads or frills in this DVD, just plenty of shots on African game from small to large, most at water holes. Over 55 shots are replayed in slow motion. Hunters can enjoy the action while learning about animal reactions and shot placement on game they may be hoping to hunt.

Holt is an experienced bowhunter who has a thorough knowledge of bows and how they work. He has also been a coach and a competitor. He made his first trip to Africa in the 1970s and now spends six months there each year. Holt films his own hunts and he makes videos for others. He also is a consultant for African outfitters who wish to start or improve a bowhunting operation.

Bowhunting in Africa With Dave Holt and Friends is priced at \$19.95 plus \$3.00 shipping and handling. Dealer inquiries are invited. Please leave a message or send an e-mail if you would like additional information. Contact Andy O'Donnell at (720) 322-4559 or e-mail: flyboy2890@msn.com. You can also inquire through High Country Publishers at (303) 988-3021.

To contact Dave Holt, use dhafrica@juno.com.





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AeroRest from Firenock

The innovative AeroRest that Firenock had on display at the ATA Show began shipping in quantity to retailers in early May. The AeroRest is a full capture rest that is the first to employ industrial grade ceramic balls to guide the arrow. The low friction between arrow and ball translates into low noise. The elegant design and use of titanium fasteners keeps the weight down to just 1.5 ounces.

The rest comes set up for shaft sizes down to .35 inches. Spacers are included with the package to handle shafts down to .25 inches. An optional titanium spacer pack will let you shoot arrows down to the .177 outside diameter of the Carbon Express Nano.

The rest easily adapts for right-handed or left-handed use. Arrow position is also adjustable: You can set the rest up to shoot the cock feather down, up, left or right.

Reach Firenock in Illinois for more information by calling (815) 780-1695.



Spy on Your Hunting Spot

The Spypoint Live is a self-contained digital game camera that sends photos via the cellular network. All you need is a Spypoint Live camera and a data plan from AT&T or T-Mobile which allows you to get your photos from your own personal account on www.myspypoint.com. "Stop disturbing your hunting area, and quit wasting your time and money traveling to check your photos," a Spypoint spokesman said. The Spypoint Live camera also works great for remote security applications.

The new Live has a 3.5 inch built-in viewing screen, as shown at lower left. It will take crystal clear 5.0 megapixel color images by day and black and white images by night via 48 powerful infrared LEDs. Five zone detection sensors are fully adjustable from 5 to 50 feet. Date, time, temperature, and moon phase are stamped on each photo. You can store footage on removable SD/SDHC cards up to 32 GB. (Not included) or output through USB or to a TV. The Live runs on 8 AA batteries or a rechargeable Lithium battery pack (not included). The camera includes 12V/solar panel power jack, mounting strap, USB cable, and video cables. Reach Spypoint's U.S. sales office toll free at (888) SPY POINT or reach the Canadian manufacturing headquarters at (514) 868-1811.



Gatorskins Enters the Bowhunting Market

A newer fabric being used by some military units and already popular among motorcyclists is now being marketed to the bowhunter. Gatorskins is headed by Michael T. Burke, who said the garments are American-made and are currently being sold to U.S. Navy SEAL teams and Coast Guard units. The fabric is warmer than wool and lighter than paper, he said. It is windproof and water-repellent. While it stretches easily, Burke said it is best to buy a size that fits loosely. "The looser you wear them, the warmer you stay. Gatorskins are antimicrobial and will not retain smells, after proper washing, even after several days of wear."

"Gatorskins are made from a new fabric that was developed for motorcycle riders," Burke explained. "It does a magnificent job of keeping the rider warm and comfortable in many cooler and adverse situations. After selling thousands of sets of Gatorskins to motorcyclists, we found that many other individuals who spend considerable time outside were buying our product. Recently, our focus has changed to include hunters."

Burke said Pape's Archery will be distributing the garments, or retailers can contact the firm directly at (717) 755-7105.

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ArrowTrade Special Report

Round Table Gives the Media

I missed the 2011 Bowhunting Round Table due to illness but was back to my usual form this May, covering the three-day event at PASA Park near Barry, Illinois for this special report that runs through page 29.

This unique event was launched in 2006 by the Media Direct ad agency now headed by the husband-wife team of Mark Sidelinger and Kim Cahalan. It utilizes a round robin format to put the top print magazines and a smattering of TV and internet operations face to face with manufacturers. The park-like grounds provide ample space for the writers, editors and publishers to try out products and set up photos. Since they're also sharing three meals a day, there is ample time for us to forge strong contacts with our opposite numbers on the manufacturing side.

Thirty one product lines were scheduled for the 2012 event. Most manufacturers came in for a single day, but when they had multiple lines to present, some had reserved space for a second day. That was the case for

Mike Swan and Todd Leidall of **Robinson Outdoors**. Swan now heads up marketing for the Minnesota firm, while Leidall is the senior vice president and general manager. Wednesday, May 16 they took us through the Tree Spider line and then Thursday were back on deck to present the latest scent control liquids and clothing. Swan said the Tree Spider harnesses were joined this year by a 2.2 pound Micro version designed to be light in weight and easy on the pocket book at a cost of \$99. Like the Tree Spider Speed Harness and Speed Vest, they're designed with Speed Clips that let them clip into most ScentBlocker



Mark Hicks (left) is a full time outdoor writer who has been writing for Field & Stream for more than 30 years. Attending his first Bowhunting Round Table, he's shown here talking with Kim Cahalan and Mark Sidelinger of Media Direct.



Mike Swan of Robinson Outdoors shows how simple it is to snap on and snug up the Tree Spider Micro Harness. At right, Corry Lino of Papa Advertising (in white) works with Swan on Robinson's marketing campaigns. Here he is demonstrating how any of the Tree Spider harnesses can snap inside the company's ScentBlocker jackets with the included Speed Clips.

jackets from the same firm. President Scott Shultz doesn't like to bother with safety harnesses, and figures lots of other hunters feel just like him. When you slip on a jacket set up with any of the three Tree Spider harnesses, you bend and attach machined aluminum leg buckles. The leg and shoulder straps are integrated so a tug on the shoulder straps adjusts the leg straps at the same time. Vertical Climbing Loops work with a climbing belt to help the hunters climb stands and hang tree-stands in a safer fashion. The Bungee Tether is being offered in three lengths to accommodate hunters who prefer to sit, stand or hunt facing the tree.

Leidall said Robinson plans to integrate the Tree Spider system into bibs next, giving the hunter another quick and simple way to don his or her safety gear. The line also includes the Livewire Descent System, which connects between the harness tether and the tree and will lower a hunter safely to the ground even if they lose consciousness before or as a result of slipping off their treestand.

Bowhunting Round Table

By Tim Dehn

a Closer Look at Latest Gear



Easton's Nate Pilcher (right) talks about the latest arrows and the Arsenal quiver with North American Whitetail Publisher Tom Weaver (left) and John Geiger, the special projects and gear editor at Game & Fish Magazine. The quiver easily converts from one piece to two piece and the grippers hold any size arrow down to the slim Injections. For more information, call (801) 539-1440.

Easton's Nate Pilcher credits Easton's experience in developing medal-winning arrows for Olympic archers for the science behind the Injexion hunting shafts. Like the target arrows that must slip through the wind at 70 to 90 meters, the new hunting shafts use a small diameter. That also increases their penetration on animals. A more conventional carbon shaft like the Easton Flatline is .294 inches in diameter, while the Injexion is .236.

Easton builds two Injexion models. The version most like the Olympic target shafts is the Injexion A/C, which uses carbon over a super-straight aluminum alloy core. Most hunters are opting for the less costly all-carbon version, where they can buy six fletched arrows for about \$90.

Aluminum inserts didn't have the needed strength at that small diameter, so the Utah firm developed new extra long stainless steel inserts it calls the Deep Six system. New Archery Products and Muzzy are building compatible broadheads, Pilcher said. Easton is also offering the Deep Six inserts sized for

the Axis and Axis Full Metal Jacket arrows, since some retailers don't like the extra time it takes to build those small diameter arrows using the HIT insert system. The Deep Six inserts are quicker to use, Pilcher said, but for now you are more limited in what broadheads fit them.

New from the Beman arrow brand owned by the same corporation is the Beman Hunter Pro. The usual approach for building a camo hunting shaft has been to take an exist-

ing arrow and apply a wrap to it, which naturally adds to the weight. With the Beman Hunter Pro, the factory starts with a lighter carbon shaft so once the wrap is applied, the arrow is as light as an undecorated shaft. The camo

being applied is an attractive blend of Realtree AP and a carbon fiber effect.

Pilcher took over the marketing for the arrow brands after Rich Packer went full-time with the Easton Mountain Products division. The company has supplied tent poles to other manufacturers for over 30 years and was responsible for developing the shock cord technology that many employ. Six years ago Easton developed carbon tent poles that use an aluminum/carbon snap fit connector tethered together with a monofilament. The combination of the patent-pending AirLock connectors with the Carbon ION, EVO or FX poles are about 40 percent lighter than aluminum poles. In addition, the monofilament tether is longer lasting than the fabric covered rubber connectors that hold aluminum poles together under tension. Just like with arrows, Easton can engineer the carbon poles made in Salt Lake City, Utah for the specific stresses they need to withstand. While a few other manufacturers are using the poles in lightweight tents, Easton decided to design its own lightweight tents for hunters



Rich Packer had several of the Easton Mountain Products tents on display during the Bowhunting Round Table.

and backpackers.

"Our Kilo series is our ultra light tent; their space to weight ratios are the lightest on the market," Packer told *ArrowTrade*. The Kilo 1P (indicating one person) is just 1 pound, 14 ounces. The Kilo 2P weighs 2 pounds, 3 ounces while the 3P weighs 3 pounds. These are three season tents, not designed to carry a snow load. "These are niche ultra-light products," Packer admitted, "but they may be a good choice for a hunter who may already have a spotting scope and a bow to carry. If they can shave a couple pounds from their pack with this tent, it can be a big deal. The one-man tent has pole sections

just 15 inches long, so it is very easy to pack into a backpack." Retail price on these tents are about \$150 for the 1P, \$300 for the 2P and \$400 for the 3P.

More poles and a heavier ripstop fabric distinguish the 2P and 3P Hat-Trick tents from Easton Mountain Products. Packer tells dealers these are "three season plus" tents, designed for use below the treeline and able to withstand a moderate snow load. Unlike the Kilo ultralights, these have interior pockets and a gear loft for storage. In the two-person version, the Hat-Trick weighs 4 pounds, 6 ounces.

For severe winter weather and high-altitude use, Easton builds the Expedition tent in a two-person configuration weighing 7 pounds, 3 ounces if you opt for the carbon frame. Nano Tent Stakes are included with each model, and are also available to retailers in four-packs or in a 50 pack box that serves as a point of sale display. Weighing just 7.4 grams in the shortest of three lengths, they're super-strong tempered aluminum. By next season Packer said Easton Mountain Sports should be offering carbon stakes that are even lighter.

Popular already in Europe but slow to catch on in the U.S. hunting circles, are trekking poles. Formed from tough 7075 series aluminum, they offer Vi-Brake anti-vibration grips and Rock-Lock locking mechanisms that adjust for tension without tools. In wet weather or severe cold you may need to tighten the locking mechanism, Packer

explained, and with the Rock-Lock you don't need a screwdriver and there are no screws that can back out and get lost. "A pair of these poles can take 15 to 20 percent of your body weight off your legs. That can be very important when you're carrying out an animal or when you're carrying a heavy pack up a slope."

Easton and Beman arrow retailers will need to apply to carry the Easton Mountain Products line, Packer said. He invited them to do so by calling (801) 539-1400 or by sending an e-mail to mtinfo@eastontp.com.

Brady Arviev and Chris Kozlik were demonstrating the latest arrow rests and broadheads from **New Archery Products**, using a PASA Park range normally reserved for .22 caliber rimfires. The popular Apache line of drop away arrow rests now includes

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Above you can see how the poles are designed to support both the tent body and the rain fly that rides on top of them. Below, a fly of a different type is riding on the strong monofilament tether that is part of the AirLock connection.



an Apache Carbon model. By replacing the large steel guard with a carbon guard, the company shaved off about 1/3 the weight. The loading slot is now angled to the side, eliminating a problem some users had in tapping their arrows against their sights. "It's quieter to load and that's a big deal for our customers," Arview said as vice president of sales and marketing.

NAP has updated the Armorest so a single SKU now fits all bows. You can't really call this a drop away: Snap open may be a better description. The rest is very quick to mount and Engineer Kozlik recommended dealers not try to tinker with the action. They can leave the set screw on the cable connector lightly snug, pull the bow back once, let it down and tighten the set screw.

Both NAP representatives said there's a challenge in explaining how the new Killzone broadhead differs from other rear-deploying models. People are used to a head that pops open easily when you flick it with a finger. The two blade, 2 inch wide Killzone was designed to not open prematurely

in the quiver or in flight, and you need to press both horns on once to activate it. Pressing against them both with fingers is a good way to get a severe cut, so Arview recommends dealers push it into a soft foam target. The American-made blades are so sharp customers may question whether they're opening on foam, he said. If you push the foam to the side you'll see it has been sliced. On pass through shots into targets or game animals, there will be witness marks left on the ferrule proving the blades did open.

With all the work the Illinois firm did to design premature opening out, it's had to prove there's no restriction on blade opening. "Last week we shot video showing the broadhead opens even when shot from a (low poundage) draw length test bow," Kozlik said.

Reach NAP by calling (800) 323-1279.

With Jeremy Eldredge helping to operate a dealer school at Hoyt's new headquarters, Outtech Sales Representative Shawn Ryan went through the most popular models he's been selling to dealers in Illinois, Iowa and



Brady Arview used a Rinehart target to safely demonstrate how the NAP Killzone opens on soft tissue. Both blades deploy at once, reducing the chance the arrow will flag to the side and waste energy on angled shots.

Nebraska. "Hoyt tries to build a bow for everyone," said the veteran of 17 years with the Hoyt line. "We have a youth bow, a women's bow, a speed bow, a great hunting bow and a bow you can compete with in Vegas or in Europe."

Ryan said Hoyt is in its third year of building carbon riser models and as premium aluminum bows climb in price, the differential between the two has dropped to a couple hundred dollars. The Carbon Element and the



The NAP Armorest holds the arrow securely then flips wide open at the shot (see below) to clear the fletching. One model now fits all compound bows.



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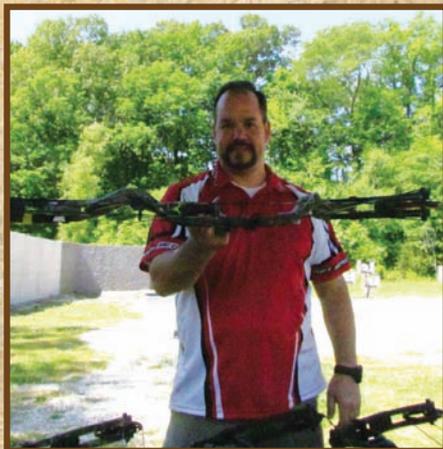
longer Carbon Matrix Plus are using a new RKT or Rocket Cam. "It's smoother to draw than last year's Fuel Cam and it's also smoother on the let down," the rep promised. "When I show it to customers, I have them let up a few times to see the difference."

These carbon bows and the Vector 32 aluminum riser model are sporting a new in-line roller guard that has larger ball bearings. The change in the roller guard has helped the smoothness of the draw and has been a factor in increasing speed, Ryan said for this bow priced to retail at \$849. The Vector 32, the longer Vector 35 and the speed orientated Vector Turbo all offer a choice of four grip options this year.

Hoyt uses elaborate cast magnesium risers to carry many quality features into the mid-price range. Ryan said sales of the Rampage and Rampage XT models are further enhanced by a \$50 rebate offer to consumers that is operating until October 1.

For more information about the 2012 Hoyt line, call (801) 263-2990.

Director of Marketing Dave Robb and Engineering Manager Mike Shaffer were on the shooting range with the latest **TenPoint** and **Wicked Ridge** models. Starting at the top, the Ohio manufacturer has a new model employing a light carbon fiber wrapped barrel. The Carbon Elite XLT weighs just 6 pounds, 14 ounces without accessories and since it has the XLT (Xtreme Limb Technology) front end it is only 13.5 inches wide cocked, 17.5 inches wide uncocked. With its soft case, six arrows, BowJax-built silencing kit, hat and



Shawn Ryan held a Hoyt bow on his fingertip to demonstrate how well they balance right out of the box.

quiver that cross-bow has a MAP price of \$1,599 to \$1,699, depending on the cocking mechanism you choose.

As part of a new program to educate cross-bow shooters about how different weight arrows affect accuracy, noise and speed, TenPoint lists three speeds for the Carbon Elite XLT: 302 FPS with a 545 grain Full Metal Jacket Arrow, 334 fps with the 425 grain Pro Elite and 352 FPS with the 370 grain Pro Lite Arrow. Those arrows are all much longer than the crossbow is wide, which is why Shaffer designed a new Ambidextrous Side-Mount Quiver Bracket that holds the company's four arrow quiver along the stock instead of crosswise under the limbs.

In the Wicked Ridge line, the same mount holds a new lightweight, noise reducing quiver. While not assembled at the Mogadore, Ohio factor that quiver is molded in America, Shaffer said, to fit the company's total USA-made philosophy. Shaffer and Robb were letting people shoot the new Wicked Ridge Raider, the first in that line to employ a version of the company's Compact Limb Technology front end. You'll find more information about both brands in John Kasun's crossbow feature this issue, or you can call the firm at (330) 628-9245.

At the **Morrell Targets** station, Bernie Morrell was so pumped up from attending the record-setting NASP National Tournament in Louisville, Kentucky the previous week he couldn't stop talking about it. The 7,846 middle school and high school students who attended made it the largest archery tournament in recorded history.

Morrell Targets is a big backer of the program, bringing a semi-load of its targets to the event each year. Mathews is the founding sponsor and the branded target Morrell built for it last year did so well that Morrell now offers versions



New faces on the Outdoor Range targets from Morrell Manufacturing should extend their life by spreading out the shots. Bernie Morrell said he shoots the small black dots at 20 yards and works his way up to the center bull's-eye at 60 yards.

for other leading bow manufacturers. Those Elite series targets are priced at \$69.99 MSRP, the Morrell representative said. The company is now offering adjustable metal stands for these targets that let you vary the height. Wheel sets make it easy to move the targets around and they can be adapted to hold 3-D targets in front of the Morrell target. That means a customer can continue shooting a worn 3-D target without worrying about arrows getting lost or damaged.

Morrell has developed a new, longer-lasting face for its Outdoor Range Targets along with a new XXL Outdoor Range target. The new face has a series of different aim points suitable for everything from 20 to 60 yard shots. The giant target was developed at the request of a state game agency for its outdoor range. The target firm also had its engineers design a stand to hold it and a roof to prolong its already considerable life.

For more information, call the Arkansas firm at (800) 582-7438.

Graham Browne brought the top-end **LaPorte Archery Phoenix** target thrower to the Round Table and it got plenty of use during the day and during the social hour that preceded the evening meal. Laporte sells that model that throws 65 aerial targets for \$5,595 but has more basic units that start at \$2,900. The company has switched to using foam targets decorated with a blue center, finding that dark spot draws the eye and dramatically increases the percentage of hits.

It's also developed two styles of soft target tips: You can now use this target thrower inside any high-ceilinged



Graham Browne loads the Phoenix target thrower from LaPorte Archery.



You can still buy flu flu fletched arrows with field points for use with the LaPorte aerial targets, but the company recommends one of these two safe tips. The ball-like tip is for outdoor use and slows the arrow enough that conventional fletching is fine. The flattened foam tip won't mark or rebound off indoor walls. As shown above, both tips are easily replaceable on their cup-like bases.



structure without the need to hang an arrow-proof tarp behind it.

Graham can be reached at his base in France by e-mailing him at graham_browne@hotmail.com.

Ameristep developed its new Switch blind to allow customers to switch between camo patterns, but it may hold strong appeal to any hunter who has been frustrated trying to fold up a hub-style blind. The Switch uses a folding metal frame, similar to a patio awning, except the legs adjust in length so you can level the blind on uneven

ground or vary the height between 60 and 88 inches. The Michigan firm is offering the covering in Realtree APG, Max 1 or Max 4 and expects the Switch will retail for about \$350.

Melissa Ranney showed us the Brotherhood blind from Ameristep that has multiple window openings. Long vertical windows make this a good blind for using on an elevated platform or on a ridge, as customers will be able to shoot down at an angle.

The Brotherhood blind is designed to retail for about \$250. For \$14.99, you

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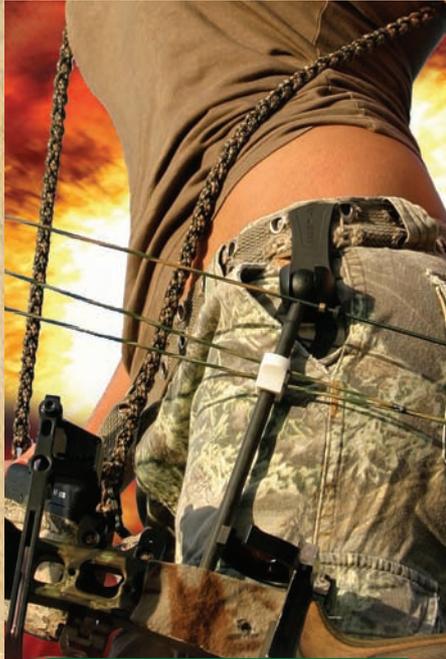
can sell a new Easyback lumbar support that could make long hours in the Switch or Brotherhood more comfortable. It uses mesh over a curved wire frame and has a strap you can use for carrying it or attaching to the chair or tree you are perched against.

For a copy of Ameristep's 20th anniversary catalog, call (810) 686-4035.

Doug Mann of GSM said the long-awaited Stealth Cam Drone would begin shipping to retailers the following week, capping a three and a half



Melissa Ranney stands by the Ameristep Brotherhood blind. The Switch behind her uses a one-piece folding metal frame so it is easy to change the camo covering to fit the season or the terrain. A portion of that frame is shown at right.



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year development process. The Drone captures high res images and turns them into compact ones that can be uploaded to your smart phone or home computer. The user can decide which images to call up in high resolution, saving bandwidth. You can even crop the images before calling up the high resolution file, bringing through the Verizon data plan just the portion of the image you want to see. All the normal camera functions can be operated from your home computer and many can be handled through a smart phone or tablet connection. GSM sells



Doug Mann said the Drone packaging from GSM's Stealth Cam brand was not tailored to the hunter because the firm is hoping to also sell this unit through home improvement stores to people looking for a security camera.

the data plans on-line, pricing them from \$19.99 per month up to \$250. The Drone itself will retail for \$599.

Technology for game cameras is changing so rapidly Mann said several other models now sport improvements. The Unit Ops camera that was introduced at the ATA Show now has a updated processor for faster trigger speeds. Three preset programs have also been added for the hunter who doesn't need to customize the features.

The popular Epic 1080 action camera launched at the end of last year has a nifty carbon finish treatment and has been waterproofed with a coating that protects it inside and out. You can now use it in a pouring rain or in a wave-splashed kayak without putting it in a waterproof case. In the Cyclops line, the Flare light has been boosted to put out 250 lumens from the 190 lumens the 2011 model put out at its brightest setting. The Alpha Muffs in the Walker Game Ear line has also been upgraded,

Mann said, with four microphones to give the user the effect of better 360 degree hearing. Reach the California sales office at (760) 450-1006.

Aaron Dusek of **Truglo** gave us a close look at the upgraded TSX Pro Series sights. In the line for several years, this series now has been upgraded to have stainless steel tubes protecting the fiber optic. There is a standard, one that offers tool-free adjustments and a third priced at \$99 in camo that combines that feature with micro adjust. The adjustment knobs are a new style that won't loosen, he said, and the allen head is exposed in them for customers who want to snug them down tighter.

The same type of knob is used in the Apex Gear brand on the new AccuStrike Pro sight. The \$69.95 "pro" version offers a longer body, he explained, for the customer who wants his aim points out further and can hold steady enough to use them that way.

Dusek also showed us how to switch pin colors on the Game Changer Sight, which feeds light from larger colored fibers to the smaller clear fibers that form the aim points. "Now you can customize the pin colors to what the customer wants. This system allows us to keep a very consistent pin size. Usually you have to flare the fiber at the end to hold it in place. Our .019 inch clear fiber is not flared; it's that exact size."

Retailers can get more information



Truglo developed a new type of tool free adjustment knob that is both easier to hand-tighten and leaves the allen head bolt exposed for those who want to apply more leverage.

about the Truglo and Apex sights, quivers and stabilizers by calling the Texas firm at (972) 774-0300.

Ron Bice, communications director at **Wildlife Research Center**, helped us understand the distinction between the well-known Scent Killer spray and the new Scent Killer Gold spray. Both have been tested and shown to be more than 99 percent effective at eliminating human odor. However the Scent Killer Gold spray met that threshold 10 days after it was allowed to dry. Hunters can now spray down their clothes well in advance of a hunt, let them dry thoroughly, then pack them away in scent-free containers until needed. "It's a lot easier to get total coverage when you're not wearing the garment," Bice commented, "and this way you're not hunting in wet clothes." The advantage comes at a modest increase in cost: A 24 ounce bottle of original Scent Killer retails for 12.99, while the gold version is \$15.99.

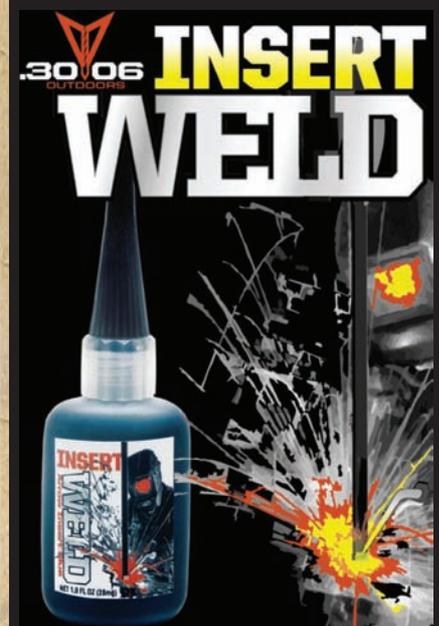
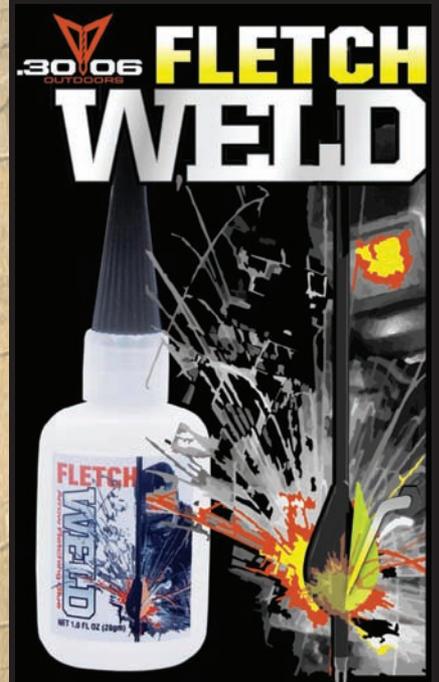
Bice called Scent Killer Gold an "ultra premium" line with advantages in every product. For instance the Gold Body Wash & Shampoo has added moisturizers and aloe, so prolonged use during a hunting season won't be harsh to skin and hair. The gold clothing wash is concentrated, to provide twice the number of loads per ounce.

These products and the new Golden Scrape scent offer a money-back guarantee to consumers. Find out more by calling the Minnesota firm at (800) 873-5873.



Ron Bice talks about the Scent Killer sprays from Wildlife Research Center. Both are packed with high output sprayers that make application quicker and easier.

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Jason Fernandez said Icon spotting scopes come with big 80mm objective lenses in straight or angled body styles. The 20-60x models retails for \$3,995 while the 25-50x goes for \$4,395.

Jason Fernandez had a lot to cover in his 30 minute presentation. The **Brunton** Product Manager shared information about the Wyoming firm's portable power units, compasses, headlamps and optics. As we related in the January cover story, all Brunton compasses are again being made in the U.S.A. Models sold to hunters range from \$5 globe compasses to \$100 professional mirrored models.

Glacier headlamps come in five versions. Top of the line is the Glacier 320 whose power pack can be worn on a headband, arm or belt. The "320" refers to a 150 lumen beam that will reach out 320 feet and run 12 hours



The LightsOut camera from Wildgame Innovations uses invisible black flash technology and has a unique design that lets you fold it around saplings and fence posts. It comes in Elite 5MP and Elite 8MP versions, the latter retailing for around \$200.

on high. On low, a 10 foot beam from this same headlamp will burn for 120 hours.

The Glacier 115 is a self-contained unit with three rechargeable AAA batteries included. They'll send out a 50 lumen 115 foot beam for 35 hours and can be recharged in the field from one of the company's many portable power packs or portable solar panels. Or your customer can opt to use standard, non-replaceable batteries.

I photographed Fernandez holding an Icon spotting scope, developed in a multi-year effort to give Brunton optics that could rival the quality of the best European scopes and binoculars. The company is so confident that it met its goals it has a liberal "trade up"



offer in place for customers who want to turn in an equivalent Leica, Zeiss or Swarovski model. Retailers interested in becoming a Brunton Full Line Partner can contact the Wyoming firm at (307) 857-4777.

Rage Broadheads CEO Rich Krause was at the Bowhunting Round Table with good news for Rage broadhead fans. The company has developed a Shock Lock collar that does a better job of holding blades shut in the quiver and during high speed launches. The company says the Shock Lock provides 270 percent better holding power, yet it's made of a material that easily snaps apart when the blades do reach their target. The Shock Lock is now standard in some packages and can also be purchased in replacement packs.

Rage has added a new Rage Turkey head ideal for those birds

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Rage Broadheads CEO Rich Krause talks about additions to and improvements in the broadhead line. At right, new Rage Shock Collars keep broadheads from opening prematurely when bumped in the quiver or under extreme launches.



and small game, Krause said. The wider cut makes it more lethal but customers should be cautioned not to use it on big game, as the blades are too thin and flexible for that application.

Most people like the cut-on-contact tips Rage has always employed, Krause continued, but for chisel tip fans the firm is introducing chisel tip models in the most popular sizes.

The big 2.3 inch wide Rage Extreme has been redesigned for 2012, with a reduced angle to the blades that boosts the penetration.

Rage wants to build a broadhead for every need, the CEO said, and to help you and your customers keep models straight it is now color-coding the ferrules. For instance the new Rage Turkey carries a green ferrule, the chisel tip versions are red, and the big Extreme is yellow. Reach the Wisconsin manufacturer by calling (715) 392-2860.

Brian Marshall is part of the marketing team at **Synergy Outdoors**, and introduced writers to the folding Lights Out game camera in the Wildgame Innovations brand. The fold-in battery compartments look cool as they hold 12 AAs, but more than that they allow you to hang the camera from a T-post or sapling. Controls are right out in the



Randy Birdsong demonstrates the Thunder Gobble. In front of him is the packaging for the Thunder Chicken decoy endorsed by Michael Waddell.

open on this weather-proof unit: There is no case to open to program it or turn it on.

For the **Evolved Harvest** brand, Marshall detailed the Throw & Grow X-treme Radish food plot mix. The Daikon radish in the mix can grow 12 to 24 inches long, he said, with deer feeding both on the tubers and their leafy tops.

Customers without access to land to plant have plenty of attractants to turn to in the **Evolved Habitats** brand. For instance, the Rack Rock Crush is an

apple-flavored mix of feed and crushed Rack Rock. Rack Rock is a mineral-laden salt that's mined overseas and sold in chunks or, as in this case, crushed and blended. More information on both lines is available at evolved.com.

Just down the porch, colleague Randy Birdsong was ready to demonstrate the Thunder Gobble turkey call from the **Flextone** line. It's named to tie in with the Thunder Chicken, a strutting jake decoy that's easy to carry because only the front 1/4 of the bird is there. A fabric fan is included but



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hunters opt to use an actual fan for more realism, he said. In answer to our questions, Birdsong said the truncated body doesn't seem to spook gobblers once they work themselves to the side of the decoy. "They seem to key in on the fan and the white head."

For information about the turkey products and a new line of elk calls endorsed by Ralph "Abe" Meline, see the flexstonegamecalls.com website.

Illinois based **Outdoor Life Products** introduced a new approach to ladder stands at the Bowhunting Round Table. The brand was launched by Daniel Gallagher after he recovered from a serious back injury incurred while trying to put up a 16-1/2 foot ladder stand. His colleague at the site was Steve Hughes, a disabled veteran



Steve Hughes raises a heavy ladder stand into place with the aid of a collapsible ladder. At right you can see the bracket and pins the ladder slides into on the platform.

Major Person had four of the most popular Barnett crossbows on a shooting range at PASA Park for the media to try. His favorite is the Ghost 350 in his hands. It features the Carbonlite riser like the Ghost 400 and Buck Commander, but is lighter and a little bit more compact. It's also easier to buy, retailing for around \$600 and shooting a 350 fps arrow. The Ghost 400 is named for its top speed, and offers a metal flight track and AVI silenced limbs as part of its thousand dollar price tag. The compact Jackal on the bench to the right retails for around \$300 with its accessory package, and is the only Barnett model that's not fully American-made. You can learn more about the Florida-based brand at barnettcrossbows.com



whose injury would make erecting a conventional ladder stand difficult.

I watched Hughes slide a ladder platform up a tree, using a telescoping aluminum ladder like the style now being sold to many homeowners. You're lifting the weight vertically and allowing the snap-lock ladder sections to catch and hold it at each stage. After your hunt you can remove the ladder, safeguarding your stand and allowing you to use a single ladder section for multiple hunting sites. When you return to replace the ladder, angled plates and two deep pins guide and hold it into place until you can climb up and insert locking pins.

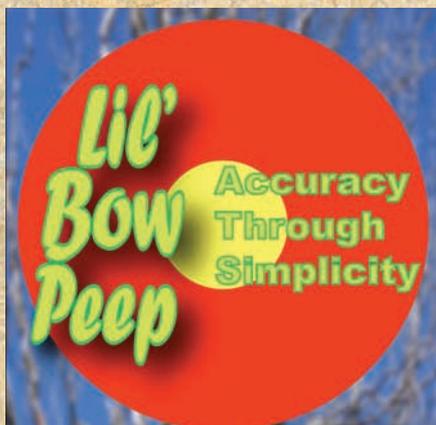
The 12-1/2 foot ladder puts the



seat of the different size platforms at 16 feet. By 2013 Gallagher hopes to have 15-1/2 and 18-1/2 ladders for hunters who want to hang their stands higher. Retail pricing for the ladder and the American-made platform ranges from \$420 to \$599, depending on the model you chose from the five available. As an accessory, you can purchase wheels to roll the stand and ladder into the woods and to use the "ladder buggy" to haul out game. Gallagher said he'd prefer to work with independent retailers who have the time to explain this new concept in ladder stands to their customers. You can reach him at (815) 469-3929.

Terry Rohm of **Tink's** said the Tink's Power Scrape has been reformulated into a gel-like consistency so it would have more eye appeal for the hunters using it the first time. It's a synthetic formula legal for deer seasons even in the Canadian provinces that have prohibited natural urine scents.

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Mist scents from Tink's are urine based and designed for the growing ranks of predator hunters. Their mist applicators can carry the scent far downwind. Tink's has also introduced Predator Sticks, which burn like incense and give off a curiosity type smell.

The B-Tech odor eliminator covered in detail within the scent control feature by Mike Raykovicz is available in two package types, Rohm said. There is a conventional spray bottle and a "bag on valve" aluminum can where the propellant is separate from the product. The latter produces a fine mist that's very effective in penetrating clothing.

For more about the Tink's brand, call the Georgia firm at (800) 624-5988.

The Burt Coyote company is staying abreast of changes in the arrow market so any hunter or target shooter can use a **Lumenok**. Nocks developed for the Victory Armor Piercing (VAP) shaft last year work in Easton's new Injexion shafts or the Nano from Carbon Express, provided you use a simple installation kit that glues a cork bumper in front of the replaceable battery. Lumenoks use a simple mechanical contact so they are just about fool proof, but the company also has developed a hard plastic tips sheet for dealers that answers common questions about the popular lighted nocks. "We send these to every dealer in our database, plus we send boxes of them to distributors so they can send them out when retailers order our product," Curt Price said.

Price said no matter how carefully you trim an arrow the act of removing it from the saw typically rubs the cut end against the blade and throws it several thousands of an inch off square. Nocks are more flexible than the hard carbon shaft, so they'll deform on the launch and affect accuracy. The company's inexpensive F.A.S.T. tool lets you square both ends of a shaft in about 30 seconds, something he demonstrated for us with a dial indicator gauge.

Burt Coyote squares all the Lumenok arrows and crossbow bolts it sells in finished form. They're attractively boxed and very accurate, he said, as shaft manufacturer Victory has marked the high side of the spine so each can be fletched in the same orientation. If



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you choose the crossbow bolts, you'll find they come with 90 grain brass inserts to improve the FOC balance. "This way you can use as light as a 100 grain broadhead," Price remarked.

A fun new product for the firm is the Lumalooop. The idea for it came from luminescent rope used by cave divers. The loop glows enough that it's easier to attach arrow and release in low light. Lumenok has been selling it two to a package with one end already flared. Price said dealers have asked to buy it in quantity so the firm will also be selling spools of the material.

Reach the Lumenok manufacturer in Illinois by calling (309) 358-1602.

Down the porch at the **Scent-Lok** station Merchandising Manager Mike Wiseman and Social Media Manager Alex Gyllstrom had the newest clothing designs, all powered by Carbon Alloy. That's the scent adsorption pioneer's name for a new blend of activated carbon, enhanced activated carbon and Zeolite. While carbon still is the workhorse in these garments, locking up odors until they can be driven off by dryer heat, Gyllstrom said the mineral Zeolite is effective in attaching to some

small odor molecules like the hydrogen sulfide present in human breath odor.'

"We can now target specific body odors," Gyllstrom said. "The benefits we're seeing are Carbon Alloy garments will absorb a wider range of odors and provide a longer time between activation." For warm-weather use, the Michigan firm has Mirage clothing that is about 30 percent lighter than the Savanna garments retailers were familiar with. "Plus this fabric is less likely to snag in briars or collect burrs," he said. Jacket and pants are expected to sell for \$149 in their Realtree or Mossy Oak patterns.

The Scent-Lok Rampage garments are warmer as they're sewn from fleece with a quiet, windproof liner. President Greg Sesselmann designed in kangaroo style side ports you can access while wearing a safety harness. There are three pockets inside plus thumb loops to help take weight off your arms.

See articles by Pat Meitin and Mike Raykovicz in this issue for more information about the 2012 Scent-Lok line, including new Wild Heart garments for women. Reach the Michigan manufacturer at (800) 315-5799.

Aaron McCaleb of Source Outdoor Group was at the Bowhunting Round Table on behalf of clients like **The Mineral Mizer Bag** and **Day 6 Outdoors**.

Georgia based The Mineral Mizer Bag sells tough bags of minerals that are hung from trees and then wetted down. They drip and attract deer in a more economical fashion than pouring minerals on the ground, where one heavy rain can disperse them. The filled bag sells for less than \$20, he said, and refills are available though the hunter may find his original purchase lasts all season. Dealer inquiries are welcome through the company's web site or by calling (229) 567-0751.

The Plot Watcher cameras from Day 6 Outdoors are different from the many game cameras that now claim to offer a "time lapse" feature, McCaleb said. Plot Watchers are so efficient they can capture thousands of images through the day, then the programming weaves them into a seamless movie. McCaleb demonstrated how you can scroll through a whole day's images in a few minutes, pausing to view any noteworthy animals and noting where they're entering and exiting the field. There's also a motion search feature where you can set the sensitivity: Your computer will then scan through the images and locate those where animals are present.

A single set of four batteries will power the original Plot Watcher (\$149) for about a month, McCaleb said, while the \$249 Plot Watcher Pro will go about four months on eight batteries and offers you more settings. Wide angle



Alex Gyllstrom wears the near Rampage Jacket, resting his arms by using the thumb loops hidden in the side ports. Shoulder patches shed rain and help keep slings and backpack straps from sliding off. The high collar is tipped with a soft material to keep it quiet and reduce chaffing if the hunter hasn't shaved recently. The MSRP is \$189.99.



Aaron McCaleb of Source Outdoor Group demonstrates the high definition video the Plot Watcher cameras seamlessly stitch together from a day's worth of images. In this fashion, 7,500 separate scenes from one of McCaleb's food plots can be reviewed in just two or three minutes.

and doubler lenses are available to tailor the view to the area your customer wants to cover.

Reach the Georgia manufacturer at (706) 256-2578.

Bohning's Rick Mowery brought a selection of quivers, fletching jigs and vanes to PASA Park, including a new Pulse vane designed for Olympic style archers.

Bohning changed the way hunting fletch is perceived several years ago when it introduced the high, short and stiff Blazer vane. It proved those vanes were more than adequate for steering broadheads, particularly when fletched on a helical alignment using one of the company's Tower fletching jigs. "Bohning Blazers worked great, but with the Tower fletching jig providing a 3 percent helical, it gave them a jet assist," Mowery said.

Now the Michigan firm builds the original Blazer in 20 color and pattern choices. It also developed a 1.5 inch Mini-Blazer favored by 3-D shooters, a 1 inch Micro-Blazer aimed at compound target shooters, and a low profile Blazer X2 for long range target

shooting with compounds.

For the past two years, Bohning has been working on a radically different fletch for recurve target shooters, something that can mimic the forgiveness and low drag of mylar fletching, while being more durable. The Pulse vanes Bohning introduced in time for the 2012 Summer Olympics are long, low and soft to the touch. Bohning calculates they are 14 percent less likely to contact the rest. When they do touch the rest, the glass bead filled composite is more forgiving, Bohning's tests show. The result should be a more accurate arrow when it hits the target at from 70 to 90 meters.

Mowery also introduced us writers to the Bow Hitch and Bark Shark. The latter is a receiver style bow hook: Once you mount it behind your stabilizer you can attach the female end to a wall, workbench or treestand to hold your bow. The Bark Shark attaches to a tree with a cord, holding your quiver at the ready once it's off your bow. You're not screwing anything into the tree and the quiver is much steadier than if you'd simply hung it on a hook.



Rick Mowery with one of the Bohning Tower Fletching jigs. The company sells different models as well as a Complete Tower Fletching Jig with three different sets of color-coded arms. Assembly is quick with just four screws.

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Phillip Vanderpool of **Hunter's Specialities** is an accomplished caller who had his small audience mesmerized with his skill on turkey, elk and predator calls. The big Iowa firm has a new line of Smokin' Gun turkey calls that include box calls, slate calls and mouth calls. The same is true with a Raspy Old Hen series. The company discovered when a hunter liked a

call with a particular model name, say the Smokin' Gun box call, he'd come in and ask for other call types under the same name. Rather than fight it, HS took advantage of it. "So now we have a mouth call, a box call and a slate call with the Smokin' Gun label," Vanderpool explained. "All the box calls are now maintenance free (no chalking) and waterproof."

Vanderpool demonstrated the Qwik Bugle, a product that bowhunters

in particular may appreciate because it gets a lanyard off their neck and the bugle away from their bowstring. The Qwik Bugle attaches to your belt loop and stretches as you bring it to your mouth, then returns to your side. It's easy with this model to direct the sound to the side or behind you, which may encourage the bull you want to come within range.

HS also has a new line of Johnny Stewart predator calls, mouth blown and attractively formed of laminated wood. For more information on this wide product line, call the Cedar Rapids, Iowa firm at (319) 395-0321.

ArrowTrade contributors have written extensively about the new Cypher sight series from **Trophy Ridge**, but I'll admit I was still surprised by



For the majority of archers who practice at closer ranges, the fun of shooting a deer target set at 100 yards proved almost magnetic. BowTech's Sam Coalson thought of it because his own uncle taught him to shoot at the bottom of soda cans from 80 yards away. He kept

his formal presentation short and gave us plenty of time to shoot the hot new Insanity CPX, the company's flagship model, and the companion Insanity CPXL that offers a longer axle-to-axle, higher brace height and more stability. The CPX is rated at 355 fps and the CPXL at 340, but head designer Craig Yehle has developed a power system that lacks the challenging draw you'd expect at those performance levels. "A lot of fast bows are harsh, with two major humps to get over as you reach peak weight and then again as you drop in the valley," Coalson commented. "Our engineer, Craig Yehle, is the smartest guy I know. He's developed bows that give you extra speed and momentum without that harsh draw cycle."

The long range practice proved so fun the male writers were also shooting the BowTech Heartbreaker bow designed for women and the powerful little Diamond Atomic (see above) designed for youngsters. The Heartbreaker is "RAK" equipped, making it a great surprise gift for a wife or daughter. "This isn't a 'package' bow where you get a selection of inexpensive accessories to mount," Coalson said. "We only use some of the best components on the market, and they come mounted. The peep sight is tied in, the sight pins are factory set. RAK stands for 'Ready, Aim, Kill' and you can pull the Heartbreaker out of the box and be ready to hunt."

With a 15 to 40 pound draw weight range, the little Atomic could send slender carbon shafts the full distance. "It's been a major success for us," Coalson said. "As small as it is, it's a full-out bow that you get to legal hunting weight. You can start a youngster with this bow at age 4 or 5, and have them use it all the way up to when they're 10 or 12. Then we'd like to see them move into a Razor Edge. That could potentially be the last bow they need to buy, because it goes from 30 to 60 pounds in a range of draw lengths."

For more on the Diamond & BowTech brands, call the Oregon firm at (888) 689-1289.



Phillip Vanderpool demonstrates the Hunter's Specialities Qwik Bugle, an elk call that drops to your side when not in use. Below are two of the Smokin' Gun turkey calls.



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Marketing Manager Jason Pickerill goes over the highlights of the Bear Anarchy. At right, Bear Product Manager Steve Dalph shows the Diamondwood Take Down with the "B" riser to an admiring Marc Anthony.

how light and stiff the frames are. Bear is using a ballistic copolymer material already popular in the tactical firearms arena. The molded material is as strong as aluminum but 25 percent lighter, Marketing Manager Jason Pickerill said. The same material is now being used in some Whisker Biscuit rests and Trophy Ridge quivers.

Pickerill confessed he thought the idea of a lighted quiver was a bit far-fetched until he hunted with the Beacon on his bow. As you carry your bow in hand at your side its three green LED's project forward to light your path, eliminating the need to carry a

flashlight or wear a headlamp. A fourth LED inside the hood provides gentle illumination so you can see your arrows as you load them. Jake Schuyler of the Hudalla Associates sales rep group suggested the idea of the product and deserves a lot of credit for sticking with it until it was adopted three years later, Pickerill said, because consumers seem to love it.

Going into it's 80th year, **Bear Archery** is roaring ahead. Pickerill said the fourth quarter, 2011 sales figures were the highest in Bear's history. Leading the charge on the compound side is the Bear Anarchy. At 35 inches, it's longer than most other premium bows yet at just 3.8 pounds, it's still

fairly light in mass weight. Consumers told Bear they wanted a longer axle to axle bow that would provide more stability. "It's a hunting bow that shoots like a target bow," Pickerill maintained.

As we detailed in the September 2011 cover story, Bear Archery is winning back its laurels as the preeminent producer of traditional hunting bows. When it was time to shoot the models brought to PASA park, most writers were picking up "stick bows" lovingly handcrafted at Bear's Gainesville, Florida facility. Training additional bowyers takes time and the demand for the traditional models means there is a backlog of several hundred recurves and longbows, Product Manager Steve Dalph told *ArrowTrade*.

For more information on any of the brands from Bear Archery, call the Indiana headquarters at (812) 467-1200.

Bushnell, which recently brought Primos under its corporate umbrella, had Assistant Product Manager Steve Smith on site to highlight the latest optics. The Fusion that Smith is holding in the photo has the same quality optics as the high end Legend binoculars, but also incorporates a laser rangefinder. In either the 10x42 (\$999) or 12x50 size, you can range out to 1,600 yards with the angle compensation feature that gives shooters their true yardage.

Bowhunters who already have a rangefinder and want a more compact pair of glasses may like the new Legend Ultra-HD. This high end glass in a compact 10x25 format will fold to fit a shirt pocket. For more low light viewing capability in an optic that is still pocket-size, stock the Legend Ultra 10x42 monocular. It's compact but boasts a bright 4.2mm exit pupil. A Desert Sand colored version has military reticles built in so varmint and



Steve Smith holds the Bushnell Fusion, which combines a high end binocular and laser rangefinder in a waterproof package that sells for \$999 in the 10x42 size.



The barrels of the Bushnell Legend Ultra HD, a 10x25 binocular, fold in to make it truly pocket sized.

target shooters can judge windage and elevation through bullet strikes.

Reach Bushnell headquarters in Kansas at (800) 423-3537.



Just for Does is a line of unscented shampoo, body wash and conditioner for women now distributed by Muzzy. Fred Eichler worked with Outdoor Edge to design this knife Muzzy also carries.

Muzzy's Mark Land held our attention at the final station of the 2012 Bowhunting Round Table, talking first about the company's business partners. Muzzy is distributing the Fred Eichler Pro-Guide knife by Outdoor Edge, priced affordably at \$99.95. The drop point fixed blade skinner has a 3-1/4 inch mirror polished German stainless steel blade. The beautiful hand tooled sheath is designed to be worn crosswise at the belt.

Eichler worked with Muzzy to develop a new version of the Phantom broadhead. His design uses a main blade that is 3/8 inch longer and has a four-sided Tanto tip. Muzzy found that tip style survived its steel barrel testing regime much better than the needle-style tips on other Phantoms. The blade is hardened to between 48 and 52 Rockwell, making it difficult to hand sharpen. Land recommended marking the blade

edge with a marker so you know you're filing or grinding off material at the correct 30 degree angle. "The Fred Eichler Signature Series Phantom is longer, leaner and it penetrates very well," Land commented.

Under the Muzzy brand, the Georgia firm has introduced Crosskill broadheads aimed at crossbow shooters. The Crosskill 125 is identical to the MX 125 dealers have been already selling, but putting "crossbow" on the package seems to reassure crossbow owners, Land said. "We did come out with a 150 grain Crosskill because we know carbon crossbow bolts fly better with more point weight."

For the compound bow shooter, Muzzy's DX-3 has its threads and ferrule sized to fit the stainless steel inserts on the slender Easton Injexion shafts. "We'll likely add a four blade version for next year," Land said.

Reach Muzzy in Georgia at (770) 387-9300.

Editor's Note: Firms interested in space available at the 2013 event can call the Media Direct agency at (309) 944-5341. ←



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Parker Continues Sales Team Hiring

Parker Bows has named Ken Lavendusky as its new Regional Sales Manager for Washington, Wyoming, Montana, Idaho, and Oregon. The Mint Spring, Virginia firm has also added Mike King as its new Regional Sales Manager for California, Nevada, Utah, Colorado, New Mexico and Arizona.

"We are very excited to be fielding a world-class, factory-direct sales team to represent the Parker brand and our product lines," noted Rob Mason, president of Parker. "Without question, Parker will have the most skilled, highly trained and dedicated salesmen in the industry."

Lavendusky and King will be in charge of managing and strengthening Parker's dealer network in their regions, as well as working with distributors and the major retail stores.

Most recently, Lavendusky worked for the Commercial and Contract Division of Staples Inc., as a District Sales Manager covering Eastern Washington, North Eastern Oregon,

Idaho and Montana. While there he grew sales by double digits and his district was consistently amongst the top 15 percent.

King brings to Parker an extensive background in archery and a 10 year career in sales. Most recently, he worked for Wells Fargo Bank where he exceeded profit goals, ranking 1st out of 36 branches in his division. Earlier in his career, King enjoyed a successful stint as the Archery Department Manager for Sportsman's Warehouse. He earned a Bachelor of Arts in Business Management from Utah State University.

According to Bob Errett, Parker's founder and CEO, "We are continuing to build on the remarkable success that Parker has enjoyed over the past 17 years, and fielding a top-notch sales team will allow us to better serve our customers. The addition of Ken and Mike to Parker's new sales team will allow us to fill an important geographic territory in the Northwest and

Southwest."

Lavendusky has been an avid hunter and fisherman for over 25 years. His entire family spends most of their free time in the outdoors; rafting, hiking, fishing, hunting and camping. Lavendusky and his wife Janae, along with sons Andrew and Trey and their daughter Jayden live in Lewiston, Idaho.

King has been an avid hunter for over 25 years. He is passionate about bowhunting elk and mule deer. He also is heavily involved with cattle ranching at his family farm. When he is not working or hunting, King enjoys spending time with his wife, Andrea, and three children at their home in Holden, Utah.

Reach Ken Lavendusky at
KenL@ParkerBows.com
Cell: (540) 292-6720

For Mike King, use
MikeK@ParkerBows.com
Cell: (540) 292-6792

Robinson Fills Two Key Positions

Robinson Outdoor Products, LLC, has made two key hires, Kip Vangsgard; director of product development and new business, and Jacob Stark; national sales manager

In making the announcement, Senior Vice President Todd Leidall said, "Both of these hires bring strong and successful executive backgrounds to benefit Robinson Outdoor Products as we diversify both the types of products we bring to market and the retail locations we are doing business in. We feel their experience and skill sets easily dovetail into our larger business strategies. Our history of creating innovative hunting products is attracting great people and I'm delighted to welcome our latest team members."

Kip Vangsgard most recently was Sr. Product Manager - Potable Water

and Hydronics at Honeywell. His long history of blending the disciplines of business management, product marketing, and engineering to move existing business forward and/or develop new business opportunities was an imperative for Robinson Outdoor Products. His previous experience in the fabric industry specific to technical fabrics will also help bolster continued innovation in product development. Vangsgard is a graduate of the University of Minnesota, Twin Cities.

Jacob "Jake" Stark comes by way of Delta Sports Products where he was national sales and marketing manager. He brings deep experience in increasing brand presence within major accounts by developing and executing creative sales and marketing programs which resulted in unprecedented growth.

Stark is a graduate of the University of Wisconsin-Madison.

Both Vangsgard and Stark are active in the hunting tradition, as are most of the Robinson Outdoor Products staff. This allows them to be actively involved with product use and developmental feedback.

Robinson Outdoor Products CEO Scott Shultz said, "Robinson's 34 year history of innovation really showcases a heightened level of commitment to improve the experience of today's hunter - and that translates to our retail partners as well. We are committed to drive traffic and sales penetration into more than 2,000 locations worldwide by providing customer confidence in both attire and safety designed to work together to provide an incredible experience."

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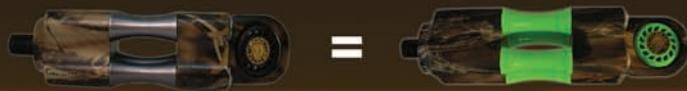
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Rinehart Names National Sales Manager

Rinehart Targets has appointed Matt McCarty to the position of national sales manager. In his new role, McCarty will be responsible for the continued sales management and growth for the family owned and operated company.

McCarty brings nearly 20 years of sales and customer service expertise to his new position. Prior to joining the team at Rinehart, McCarty served as national sales manager for Eastman Outdoors, handling all sales business from larger national accounts

to working with small, independent retailers. McCarty's successful career also includes a national sales manager position for the golf industry's King Par.

"We're thrilled to have an expert with Matt's quality and background heading up our sales department," said James McGovern, company president. "His track record of proven results makes him a perfect fit for reaching our corporate goals, and an asset to the continued growth and success of our business."

For more information on this 11-year-old firm, contact the Janesville, Wisconsin manufacturer at (608) 757-8153.



Matt McCarty

30.06 Outdoors Makes PR Appointment

Prior to the ATA show in Columbus, Ohio, Matt Minshall, president and owner of 30.06 Outdoors announced the addition of Donnie Cowell II to

handle all public relations matters for the company.

"I met Donnie many years ago while he frequented a local outdoors

establishment that I worked for," Minshall said. "Over the past 10 years I noticed his persistence and success with bowhunting record book white-tailed deer on mostly public land. He has a trophy room that most would dream of."

"Cowell is a resident of Columbus, Ohio and a graduate of Franklin Heights High School," Minshall continued. "He attended Hocking College, became a restaurant management trainee and within months was operating his own location. Since then he has moved into the IT world, taking on a leadership role for his employer. His drive, determination, and overall attitude is what led me to approach Donnie for this opportunity."

Minshall said 30-06 Outdoors will keep moving forward with the help of its existing employees and now with Cowell in the public relations role. "We can continue to provide all outdoorsmen with a great product and a positive experience."



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Bowman Now President at Bear

On May 10, 2012 it was announced that Jack Bowman has been promoted to President of Bear Archery. Over the past four years, Bowman has held the position of vice president and general manager, Bear Archery. Prior to joining Bear Archery in 2005, Bowman held senior sales management roles with Precision Shooting Equipment (PSE) and Cobra Products.

"Jack has provided genuine leadership with the vision and leadership capacity to meet the challenges ahead as we grow our businesses into the future", explained Bob Keller, President and CEO of the parent company Escalade, Inc.

Bear Archery manufactures and distributes a full line of archery products including compound bows, traditional bows, quivers, arrow rests, fiber optic sights, stabilizers, broadheads and other related accessories under the Bear Archery, Trophy Ridge and Rocket Broadheads brands.

Early in June, *ArrowTrade* took the opportunity to ask Bowman a few questions about the company and the brands he is now leading.

AT: What can you say about the team of engineers and product managers Bear has assembled in the past few years?

Bowman: First off, they are all bowhunters and archers. What they do for work is also what they enjoy when not working. As you can imagine, along with having a degree in mechanical engineering or business, the additional requirement of being a bowhunter/archer severely limits the number of applicants we receive for these positions; we are constantly looking. I believe the products speak to what they have accomplished. While "defining" the product line is a collaborative effort from the entire group, the design and execution is the responsibility of the engineers and product managers respectively.

AT: How is Bear proving that it can be a powerful force in the accessory

business with the improvements you've made in the Whisker Biscuit and Trophy Ridge lines since taking them on?

Bowman: We are doing it with innovation, dependability (trust) and quality. Trophy Ridge is a big focus for our team, an area we believe has large growth potential. Our goal is to provide new, innovative, dependable (products you can trust) quality products to our consumers and to continue to improve the products we offer. A great example of this are the sights, Whisker Biscuits and quivers we offer with our new Ballistix Copolymer System: These are the lightest, most durable accessories on the market with a soft touch coating. IP (intellectual property) is also a focus for us in this category. Our goal is to design a unique product, which has a purpose and can make the archer a better shot - you will see what I am talking about in our 2013 line.

AT: Why is it important to retailers and consumers that Bear can provide quality bows all the way from \$299 on up, when some other firms concentrate only on higher end product?

Bowman: We want to provide a quality product to everyone, including youth, young adults, ladies, men,

novice archers and advanced archers.... we have a product for everyone that will provide an enjoyable experience. We like to say we can take them from "cradle to grave."

AT: Has it been gratifying to see traditional bow fans flocking back to the Bear banner?

Bowman: It's actually been amazing. This category more than any other really makes you appreciate all the things Mr. Bear accomplished and the amount of respect he and his products earned over the years. I guess humbling would be a more appropriate way to describe the feeling. It's wonderful to see three, four and five generations in a family still bonding and having fun with the old stick-n-string. Make no mistake about it - Fred Bear is the "KING" in the traditional archery world.

AT: What are some of your goals for Bear Archery over the next few years?

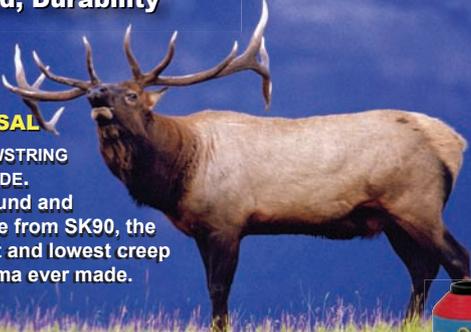
Bowman: To continue developing products that have a purpose for our customer, be it a bow, sight, arrow rest etc. We will also be looking at additional categories to enter that make sense for our brands, which could include some more acquisitions.

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Hudalla Hires More Product Specialists

Hudalla Associates, the nation-wide sales rep group based in Minnesota, has hired two qualified and talented individuals to join its Product Specialist Program. "The function of each product specialist is to work with the area Hudalla rep and our manufacturers to better manage the major retail store locations in their territories. The goal is to educate, service, merchandise and report the status at each location," a Hudalla spokesman said.



Raymond Daymude

Patrick Bayne is the South Central Product Specialist. Patrick has experience in major retail box stores. He is located in Warrenton, Missouri and will be covering the states of Arkansas, Southern Illinois, Southern Indiana, Kansas, Louisiana, Missouri, Oklahoma, and Texas.

Raymond Daymude is the Northeastern Product Specialist. Raymond has experience working in archery dealer shops and also has shot competitively. Raymond

is located in Falling Waters, West Virginia and will be covering the states of Connecticut, Delaware, Massachusetts,



Patrick Bayne

Maryland, Maine, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Virginia, Vermont, and West Virginia.

Dean Carlson and Billy Hudalla have been working as Hudalla Product Specialists for a year now and with the addition of two new product specialists the states they cover have changed slightly.

Dean Carlson is the North Central Product Specialist. Dean has archery retail shop and major retail sales experience. He is located in Prairie du Sac, Wisconsin and will be now covering the states of Northern Illinois, Northern Indiana, Iowa, Michigan, Minnesota, Nebraska, North Dakota, South Dakota, and Wisconsin.

Billy Hudalla is the Southeastern Product Specialist. He has customer service experience working as a hunting and fishing guide, is located in Alpharetta, Georgia and will be covering the states of Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee.

Flint Holdings Acquires Montana Decoy

Flint Holdings, an outdoor products manufacturer, recently acquired Montana Decoy. It planned to move all manufacturing and shipping operations from Colstrip, Montana to its plant in Plymouth, Connecticut starting May 1 of this year.

"Montana Decoy has built an incredible brand over the last decade," said Guy Weaver, CEO of Flint Holdings. "Our goal is to continue to provide innovation and bring new products to market that are relative to a hunter's success."

Weaver said the company will retain Montana Decoy Founder Jerry McPherson, as head of product development and quality assurance. McPherson's knowledge of the

industry and history with product development will bring years of experience to the company. "It's a very exciting time at Montana Decoy," said McPherson. "We have assembled an incredible group that will take this company to the next level, starting with some incredible products that we will release in 2013."

Winchester Hosts Drawing

Winchester Archery is giving away 10 Winchester brand-ed bows, both compounds and crossbows, just in time for hunting season. If you are 18 years of age or older, all you have to do is sign up at <http://WinchesterArchery.com> and click on the "10-BOW GIVEAWAY" banner on the homepage.

Starting August 1, 2012 Winchester Archery will randomly select one winner each day for 10 consecutive days. The winners will receive a randomly selected precision-engineered, made in USA Winchester brand compound bow or crossbow. Winners will be announced on the Winchester Archery website each day. "You can't win if you don't enter, so do it now!" a spokesman said.



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Equipment Focus

CROSSBOW MARKET OFFERS

It has been several years now since crossbows became a major product category within the archery industry and much of the initial resistance and concern among both bowhunters and dealers has faded away. Originally some bowhunters predicted complete destruction of the deer herd with the introduction of the crossbow for general use. Meanwhile some dealers thought that if crossbows became popular it would destroy their business.

As we now know neither of these assumptions were true. In fact dealers who added crossbows to their inventory

are not only seeing new customers and an increase in business, but are finding some of those customers are crossing over into vertical bows. One concern even the dealers who stocked crossbows originally expressed, was that once a customer purchased a crossbow add-on sales would be minimal and they would never see the customer again. This also has proven false as the range of accessories has grown year by year and improvements in the crossbows themselves have generated repeat buying.

The vast potential of the crossbow

market has brought new manufacturers into the field. Plus arrow, broadhead and accessory manufacturers have introduced crossbow specific products. Original crossbow manufacturers have reacted by upgrading their existing models and coming out with new models to

attract different segments of the customer base with many aimed at specific price points. Customers are responding by looking to either upgrade their original crossbow to a better model or add some new accessory. Overall the market remains stimulated and is proving a real boon for both dealers and the industry overall. Let's take a look at some of the crossbows available for 2012 that you might want to consider adding to your inventory to meet this steadily growing segment of the market.

Darton

"Darton continues to set its sights on performance and accuracy," explained Ted Harpham, Darton's sales manager. "Darton crossbows are shock free, user friendly, fast, accurate and safe. While hunting whitetail deer with a crossbow is still a short range sport, Darton bows are capable of delivering 1 to 2 inch groups consistently at 60 yards or more making them pin-point accurate at the normally much shorter hunting ranges. Our bows feature a large protective guard that prevents the shooter from placing his fingers



The expanded crossbow opportunities across the country are bringing new hunters to the sport as well as bringing old hunters back. Crossbows are also opening up bowhunting opportunities for youth and ladies who are unable to handle a vertical bow of a sufficient draw weight. This creates excellent opportunities for dealers who sell and service crossbows.



Darton's Serpent LTD II features an improved trigger design with less travel and a crisp feel for increased accuracy. The rifle style ambidextrous safety, common on all of Darton's crossbows, is quick and easy for the hunter to use without taking their eyes off of the target.

2012 Crossbow Lines-Part II

By John Kasun

PLENTY OF SALES GROWTH



Dartons FireForce, new for 2012, features larger axles, sealed oversized Quad Ball Bearings plus wider and stronger laminated Quad limbs which are combined with a compact front end riser and redesigned stock. In addition to the standard string suppressors the FireForce features a Barrel Dampener to further reduce noise and vibration. The FireForce is designed for the customer who demands the best.

The Terminator from Darton is new for 2012 and is a quality crossbow at an affordable price.

in the path of the string accidentally, especially during the excitement of the hunt. Our anti-dryfire system is 100 percent fail safe protecting both the shooter and the bow and all models feature quad limbs and standard string suppressors for reduced vibration and noise."

"At Darton we are very proud of the fact that all of our components are made in the USA," Harpham continued. "When it comes to stated specifications Darton bows are guaranteed to be on spec or above ensuring the customer gets full value for his dollar. Crossbows are bringing new shooters to the sport of archery and bowhunting as well as bringing old shooters back into the sport and all of this means added revenue for the archery dealer. Darton offers the dealer a quality crossbow that will suit his customers' needs and fit into his budget all while offering the bonus of being built in the USA. It's a win-win for everyone."

Darton offers four different models in its crossbow line. The Terminator, which is new for 2012 has a 165 pound draw weight and delivers 340 fps with

a 14 inch power stroke. The Terminator has a 170 pound draw weight and a 13 inch power stroke shooting at 335 fps. The Serpent LTD II has 180 pounds of draw weight and a 13 inch power stroke developing 355 fps. The FireForce, new for 2012 has 185 pounds of draw weight and an impressive 17.25 inch power stroke delivering a blistering 400 fps. The Terminator and the Serpent feature high end triggers with a 4 to 4.5 pound trigger pull. The Serpent LTD II and the FireForce triggers are factory pre-set to 3 pounds or less. Minimum advertised prices (MAP) for bows only are as follows; Terminator \$499.99, Serpent, \$659.99, Serpent LTD II \$859.99 and the FireForce \$999.99.

The bows have between 8 and 8.8 pounds of mass weight depending upon the model. While all models are available in camo the FireForce and the Serpent LTD II are also available in black for the hunter who hunts from a blind or simply prefers black, which is currently popular among many hunters. All models feature a skeletonized stock for a popular modern tactical look. For more information on Darton crossbows call (989) 728-4231.

Scorpyd

Many of the advancements in archery have come from inventors and manufacturers who were thinking outside the box. Jim Kempf is certainly one of the people who took a different approach to an old idea when he came up with the "Reverse Draw" Scorpyd Crossbow.

Jim Kempf is the inventor and owner of Reverse Draw Technology. He recently told *ArrowTrade*, "I first envisioned my now patented Reverse Draw (RDT) concept in 2003. RDT is a 'system' comprised of reversed limbs, a centralized riser, long power stroke, and patented inverted cams. It is the combination of all of these things that make for the absolute best crossbow shooting experience possible. RDT, by design, engineers in smooth shooting. When the design is combined with the finest high quality components built around the best trigger available you get a Scorpyd Crossbow."

Scorpyd Crossbow offers three models, and all feature a unique folding stock. The folding stock makes it easier for the shooter to cock the bow as they can bend over more easily without the interference of the crossbow stock

Continued on page 40

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The Invader HP™ has muscled-up for 2012. It out-classes the competition on all levels with a harder hitting bow assembly featuring TenPoint's HL limbs and HP cams.

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NEW
FOR 2012

300 FPS

175 LB. DRAW WT.

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Invader HP & Warrior HL shown with optional TenPoint™ 3X Multi-Line™ Scope



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The fastest and lightest of our expanding collection of XLT models. A fusion of TenPoint's cutting-edge, featherweight, wrapped carbon fiber barrel with a 185 LB version of our radically compact XLT bow assembly, the Carbon Elite takes fit, form, and function to the level of perfection.

185 LB Draw Wt.

352 FPS / **102** FP KE
with 370-grain Pro Lite Arrow

334 FPS / **106** FP KE
with 425-grain Pro Elite Arrow

302 FPS / **110** FP KE
with 545-grain Full Metal Jacket Arrow



NEW
for 2012

NEW
for 2012



180 LB Draw Wt.

345 FPS / **98** FP KE
with 370-grain Pro Lite Arrow

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

296 FPS / **106** FP KE
with 545-grain Full Metal Jacket Arrow

NEW
for 2012



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

TURBO XLT II™



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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www.tenpointcrossbows.com



TENPOINT
CROSSBOW TECHNOLOGIES



The SLP is Scorpypd's fastest crossbow model delivering 425 fps with a comfortable and easy to draw 165 pounds. Also available are 150 and 125 pound models.



Scorpypd's Telson delivers 1 pound of kinetic energy for each pound of draw weight. This allows the hunter to develop more than adequate energy required for hunting while drawing a bow at a weight that is comfortable and easy to cock.

protruding into their stomach or chest during the cocking procedure. This is especially important when attempting to cock a crossbow in a treestand.

"Scorpypd offers the customer exactly what they want," continued Kempf. "We offer three basic models, which include the Telson (\$1049.00 MSRP), the SLP (\$1249.00 MSRP) and the new Ventilator (\$1349.00 MSRP). We offer all three models in three draw weights, so we ask, 'How fast do you want to go, and how much draw weight do you want to pull?' Some shooters want the world's fastest crossbow, and that is our SLP (Solid Limb Platform) 165. With 165 pound draw weight it shoots 425 fps delivering 160 pounds of Kinetic energy. The SLP 165 is super accurate but is hard on 3-D targets. The SLP has a 20.5 inch power stroke, and is also available with a 125 pound draw weight delivering up to 370 fps and with

150 pound limbs shooting up to 400 fps. It comes standard with Barnsdale laminated limbs and does not have an anti-dryfire device for those customers who do not desire this feature."

"For customers desiring the quietest crossbow we offer the Telson series," Kempf explained. "The Telson is the first crossbow to generate 1 pound of kinetic energy for each pound of draw weight. It is available with an easy to handle 90 pounds of draw weight shooting up to 330 fps. With 110 pounds of draw weight the speed increases to 360 fps and at 130 pounds of draw weight it tops out at 385 fps. The Telson comes standard with Gordon glass split limbs, and the patent pending anti-dryfire equipped trigger assembly. Trigger pull is less than 3 pounds, and is super smooth."

"New for 2012 is Scorpypd's Ventilator," Kempf added. "The

our top-of-the-line bow, and is offered with an optional Trijicon ACOG range-finding crossbow scope for the ultimate hunting combination. Anti-dry fire equipped, the Ventilator offers a 100 pound draw weight shooting at up to 345 fps, with a 125 pound draw weight it generates up to 370 fps and the 150 pound draw weight produces up to 400 fps. The Ventilator comes standard with Barnsdale laminated limbs, new vented forearm, and all titanium fasteners for maximum strength and corrosion resistance."

Reverse Draw Technology places more of the weight of the crossbow between the shooter's hands as opposed to on the end of the bow as is common with a conventional crossbow. This physical arrangement makes the bow feel lighter and more comfortable to the shooter, a very strong selling point.

The SLP is available in black while the Telson and Ventilator are available in black or Realtree Hardwoods Gray. For additional information on the Scorpypd line call (319) 331-4700.



New from Scorpypd for 2012 is the Ventilator. A compact crossbow weighing in at 7.9 pounds, the Ventilator delivers between 345 and 400 fps depending upon the draw weight selected. The Ventilator is Scorpypd's top-of-the-line bow and is offered with an optional Trijicon ACOG range-finding crossbow scope for the ultimate hunting combination.

Ventilator was developed in response to the numerous requests we have received for a more compact and lighter crossbow. The Ventilator weighs in at just 7.9 pounds. However it is "no lightweight" when it comes to performance. The Ventilator is

Excalibur

Excalibur is a firm believer in the old adage, "If it ain't broke, don't fix it." Although Excalibur incorporates the latest technology and materials in its crossbows and manufacturing procedures, its basic recurve limb design has remained the heart of its crossbow design since its inception. I remember when I was first introduced to the Excalibur line by the inventor and



Excalibur's Eclipse XT is brand new for 2012. It comes in a carbon fiber finish ideal for hunting from blinds and is popular among hunters who desire the "Tactical Look". The Eclipse XT shown here is complete with Excalibur's XT kit of accessories.

The Ibx SMF is Excalibur's price point bow for 2012 aimed at the \$500 range. This bow is an excellent entry level bow or a bow for the hunter on a tight budget.

founder of Excalibur, Bill Troubridge. "The more parts you have, the greater the chances of something going wrong," Troubridge told me. "Keeping your hunting equipment simple decreases your chances for problems and increases your chances of success. Besides, if my recurve crossbow will shoot completely through a deer does it really matter how far down

through the woods the arrow goes?" Troubridge's comments on that day many years ago made a lot of sense to me then and over time it has made a lot of sense to many others as well. Excalibur has claimed its fair market share and is quite popular among hunters who appreciate not only its simplicity and performance but its physical light weight as well. Depending upon

the model selected, Excalibur crossbows weigh in at between 5.9 and 6.3 pounds without accessories.

"The average crossbow hunter is rapidly approaching 50 years of age and many are abandoning treestands and turning to ground blinds," said Rob Dykeman, director of sales and marketing for Excalibur. "Excalibur targeted that segment of the market with



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The Equinox is Excalibur's powerhouse cranking out 350 fps at 225 pounds of draw weight. Excalibur is seeing hunters who have been in the sport for several years upgrading to the Equinox as they seek more power and the latest technology.

its Eclipse XT, which is new for 2012. The Eclipse features a black carbon finish from head to toe making it ideal for ground blind hunting. The black carbon finish is also popular among crossover rifle hunters. There has been a recent movement among gun hunters towards rifles with black finishes and when those hunters are looking for a crossbow they are drawn to the black finish."

The Eclipse XT has a draw weight of 200 pounds and with a power stroke of 15.5 inches it delivers a 350 grain arrow at 330 fps. It features a thumb-hole stock, S5 sound and vibration control system, a Dissipater Bar that provides added dampening and matching cheekpiece. The MAP price of the Eclipse XT complete with Lite Stuff Package, which includes a scope, four

arrow quiver, four Fire-Bolt arrows with field points and a rope cocking aid is \$869.99.

Also new for 2012 is Excalibur's IbeX SMF, which gives the dealer a price point bow with an MAP of \$539.99 complete with Excalibur's Lite Stuff accessory package. With a draw weight of 175 pounds and a 14.5

inch power stroke the IbeX propels a 350 grain arrow at a speed of 305 fps.

Excalibur is seeing increased interest in the top-of-the-line Equinox. "I think this surge of interest in a high end bow clearly shows that crossbow hunters are upgrading their equipment," explained Dykeman. "The Equinox is our powerhouse bow with a 225 pound draw weight and a 16.5 inch power stroke generating speeds up to 350 fps with a 350 grain arrow. It also features a Dissipater Bar and S5 shock sound suppression system and an ambidextrous cheekpiece. It has a MAP price of \$899.99 and includes a Lite Stuff accessory pack. Customers interested in this bow are normally people with several years of crossbow hunting experience under their belt who are looking to step up to the next level of equipment and performance. To

me this means that the dealers who have an inventory of equipment that allows the customer to move up to the next level will

be rewarded with increased sales and steady growth." To learn more about Excalibur's complete line of bows and accessories phone (519) 743-6890.

Bowtech Stryker

As Stryker Crossbows (a division of BowTech) rolled out its StrykeZone 350 and StrykeZone 380, Director of Marketing Sam Coalson said, "These bows will instantly place shooters 'in the zone'. The StrykeZone 350 provides a speed of 350 fps yet allows for an easy draw due to its easy-to-handle 135 pound draw weight. The 350 comes equipped with Octane string and cables for maximum quality and precision-engineered cams with a compact 19-3/16 inch axle-to-axle measurement and a 15.5 inch power stroke."

"Stryker also offers the blazing fast StrykeZone 380 with a 160 pound draw weight," continued Coalson. "Driving bolts at 380 fps, it's the fastest member of the all-new high-performance StrykeZone collection. The StrykeZone 380 utilizes an impressive blend of cutting-edge technologies to produce a reliable, lightweight crossbow. Our unique piston design allows the trigger pull to be independent of the bow's holding weight; combined with a double sear this ensures an ultra-light trigger pull. The double jaw string capture protects the trigger mechanism from the elements promising a clean release in any weather. The StrykeZone delivers impressive power with an easy draw and the KillSwitch trigger has less than 3 pounds of trigger pull and a fraction of an inch of travel. The StrykeZone 380 also comes with Octane string and cables for maximum quality and precision-engineered cams with a 19-3/16 inch axle-to-axle measurement and a 15.5 inch power stroke."



Stryker Crossbows, a division of BowTech, offers the Stryke Zone 350 and StrykeZone 380 shooting at 350 and 380 fps respectively with comfortable easy-to-handle draw weights of 135 and 160 pounds. The 350 is shown here in Mossy Oak while the 380 is shown at right in Optifade Forest. Both crossbows are available in either camo pattern.



One feature that makes Stryker Crossbows among the safest on the market is the Auto-Flip magnetic safety that clicks into the safe position every time the bow is cocked and is engineered to click back into safe mode if the crossbow is dropped or the bolt is removed. Another safety feature is the Cease-Fire safety plug, a double barred insert that slides into place locking the string capture jaws and immobilizing the trigger until you remove it and are ready to shoot. That adds a great deal of confidence when transporting a cocked crossbow on an ATV or while using a haul rope to lift one into a tree-stand.

The StrykeZone 350 has an MSRP of \$649.00 with the accessory package and \$549.00 without the package. (The package includes three 385 grain matched Stryker bolts, a five-arrow quick detach quiver, multi-reticle scope and cocking aid.) The StrykeZone 380 has an MSRP of \$749.00 and is only available with an accessory package that includes five 385 grain matched Stryker bolts, a five-arrow quick detach quiver, multi-reticle scope, detachable shoulder sling, cocking aid and string stops.

Both the StrykeZone 350 and 380 are available in Mossy Oak Treestand or Optifade Forest. For more information call (541) 284-4711.



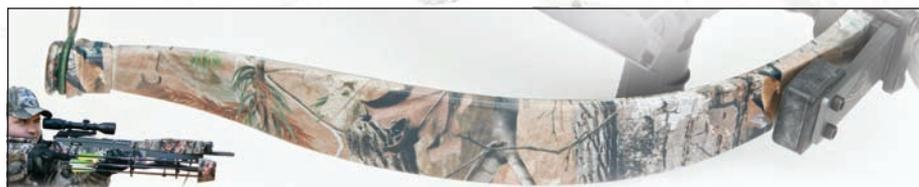
The Kodabow is compact, lightweight and extremely maneuverable under even the most extreme hunting conditions.

Kodabow

The brainchild of Chuck Matasic, the Kodabow appeared on the crossbow scene in 2010. "I had an extensive background in the sporting goods industry and saw the growth potential in crossbow sales," said Matasic. "I wanted to apply high end gun technology to the trigger assembly as well as the overall styling of the bow, paying special attention to the tight tolerances and the quality of the components. Because I would have complete control over the manufacture and assembly, I

also wanted to make sure the bow was 100 percent American-made. This combined effort resulted in the Kodabow, which is not only fast, accurate and dependable, but is also packable for travel and can be easily maintained by the user."

The Kodabow uses a dual limb recurve for simplicity of design and to reduce the physical weight of the bow. It features an anti-dryfire system with an indicator that provides visual confirmation that a bolt is loaded, properly seated and ready to shoot. An



RECURVE-LIMBED CROSSBOWS ARE MORE RELIABLE, MORE ACCURATE, MORE POWERFUL, LIGHTER WEIGHT, EXTREMELY FAST AND VIRTUALLY MAINTENANCE FREE!

The mechanical advantage (let-off) of compound wheel technology makes sense for vertical bows where the archer enjoys lower holding weight. **But**, for crossbows, where holding weight is not a factor, wheels become a mechanical disadvantage.

The "mechanical advantage" of recurve limbs.

Let-off, the mechanical advantage afforded by compound technology, is important to "vertical" bows where the archer must physically hold the bowstring while shooting. With crossbows, because there is no such holding, this mechanical advantage becomes a mechanical disadvantage. The "wheels" represent only more parts to break or things to go wrong without offering any substantive function. In fact, it's just the opposite, the time-tested and proven recurve limbs on an **Excalibur** Crossbow offer numerous advantages over wheeled counterparts.

RELIABILITY—Those who shoot crossbows for a living choose Excalibur and recurve limbs for their reliability and durability.

If you want to know how a product performs over the long haul, ask those who use it in the most grueling situations. In the case of crossbows, ask killer whale researcher Bob Pitman, who uses a crossbow day after day to tag killer whales...

"We work off small boats in Antarctica and use crossbows to attach satellite tags to killer whales for scientific research. We need a crossbow that we can rely on; one that can take a pounding in the launch and stand up to the salt spray and freezing cold, every day, for weeks on end. We have tried several different brands over the years, but only Excalibur has been up to the task."

Bob Pitman — Protected Resources Division,
National Marine Fisheries Service



ACCURACY— Three times more wins than all other brands combined.



LIGHTWEIGHT DESIGN— Fewer parts and streamlined design mean less weight to carry through the woods.

DURABILITY— There are over 250,000 fiberglass strands in an Excalibur recurve limb!

POWER— Excalibur Recurve-Limbed Crossbows have the power to take the biggest game!



SPEED— Faster than the majority of compound crossbows — without sacrificing accuracy!

LOW MAINTENANCE— Change out a string in just 18 seconds — without a bow press!

Excalibur Equinox shown



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The full length AR-15 style picatinny rail on the Kodabow allows the user to mount a foregrip, bipod or other devices as desired. The vertical foregrip has a seven position adjustment and the stock allows for 3.75 inches of adjustment from the butt plate to the trigger allowing the shooter to adjust the stock for the perfect fit.

ambidextrous automatic safety engages upon cocking. The string can be easily changed in the field and a manual de-cocker is built into the bow for safe and easy unloading after the hunt without the need to discharge the crossbow. For remote travel and packing, or for off season storage when personal space is

limited, the entire Kodabow crossbow can be disassembled and will fit into a very small box approximately 15 x 12 x 3 inches, which is the size of one of the US Postal Service Priority Mailing boxes. Kodabow claims that using the de-stringing aid and the tool kit that ships with every Kodabow, reassembly at the hunting site takes approximately 10 minutes.

adjustable AR-15 stock the length of the trigger pull can be easily set from 10.5 to 14.25 inches. This allows the shooter to customize the bow to their body size as well as clothing required depending upon the weather. The trigger has minimal travel with a factory spec of 3.5 pounds of trigger pull. MSRP for the Kodabow ranges from \$819.00 without optics to \$899.00 with optics. For more information on Kodabow phone (610)-620-4352



The rifle styling of the Kodabow makes it attractive and comfortable for gun hunters crossing over to bowhunting.

Five different sets of limbs are available for the Kodabow, all of which have the same geometry but come in five different weight ranges as follows; Alpha Strike Lite - 125 pounds; Alpha Strike - 155 pounds; Koda-Express - 185 pounds; Bravo Zulu - 200 pounds and the Big Rhino - 225 pounds. The power stroke is constant at 14 inches regardless of limbs selected and the speeds generated vary from 250 to 350 fps depending upon limb weight and based on a 350 grain arrow.

Tenpoint
TenPoint is a well established name among crossbow manufacturers and it offers a complete line of crossbows and accessories. Its wide selection of crossbows is guaranteed to satisfy even the most particular customer. New for 2012 is the Carbon Elite XLT, which is a fusion of TenPoint's carbon barrel with a 185 pound version of its radically compact XLT bow assembly. The XLT's axle-to-axle width is 17.5 inches wide un-cocked and 13.5 inches cocked making it highly maneuverable. Tipping the scale at a mere 6



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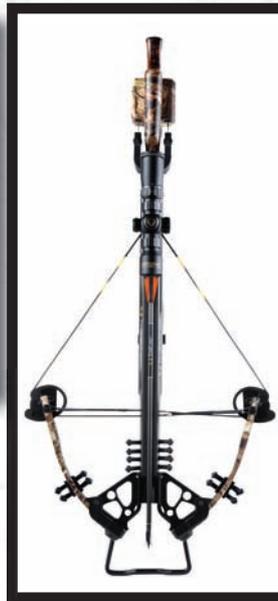
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Kodabow uses genuine AR "battle rifle parts" for the rear stock, pistol grip and foregrip. The foregrip is available in a seven position vertical grip or a large palm swell style potato grip that feels more like a traditional rifle. A 1 inch diameter tactical flashlight can also be integrated into the grip assembly. With the full length picatinny rail a shooter can trick up a Kodabow by adding a bipod and any other AR style rail accessory. With the



TenPoint's Titan Xtreme is 5 inches narrower this year. The 180 pound limbs generate speeds of 333 fps when using TenPoint's Pro Lite arrows.



TenPoint's Carbon Elite XLT is new for 2012. Combining all of TenPoint's latest technology it features a feather-weight wrapped carbon fiber barrel and a radically compact front end bow assembly for ease of maneuverability. The thumbhole stock is comfortable and helps the shooter get on target quickly. The 185 pound limbs produce speeds of 352 fps with TenPoint's new Pro Lite carbon arrows.

pounds and 14 ounces the Carbon Elite XLT is the lightest compound crossbow in TenPoints line up. Shooting the firm's new Pro Lite carbon arrows, the Carbon Elite XLT delivers 352 fps with 102 pounds of Kinetic energy. The lighter, more maneuverable Carbon Elite XLT will be a very attractive addition to a dealer's crossbow inventory for 2012 due to the combination of its accuracy, desirable features and performance. MAP for the Carbon Elite XLT is \$1599.00 with the ACUdraw 50 and \$1699.00 with the ACUdraw.

Updated for 2012 is TenPoint's Turbo XLT II, which is lighter and faster than its popular predecessor. The Turbo XLT II pairs TenPoint's lighter and longer Fusion Lite stock with a more rugged XLT bow assembly. Outfitted with double laminated 11 inch IsoTaper Limbs and new MRX cams the Turbo XLT II has a longer 12.5 inch power stroke, which delivers 345 fps using TenPoint's new Pro Lite arrow. MAP is \$899.00 with the ACUdraw 50 and \$999.00 with the ACUdraw.

The Titan Xtreme features a longer, lighter Fusion Lite stock and a newly crafted narrower bow assembly fitted with 180 pound HL limbs and new XR wheels. This more powerful and maneuverable Titan launches TenPoint's Pro Lite arrow at 333 fps. The MAP is \$599.00 without any built in cocking aid, \$699.00 for an optional ACUdraw 50 and \$799.00 for the optional ACUdraw.

Noteworthy in TenPoint's 2012

catalog is a special section concerning TenPoint's Comprehensive Arrow Ballistics Program. Located on page 24 is an extensive comparison of information on Lightweight, Standard-Weight and Heavyweight arrows as well as an easy to understand explanation of Forward Of Center (FOC) arrow balance. This data is an excellent resource

of providing a simple, reliable crossbow that was affordable for many outdoors people. In a short time the brand has become quite popular and many dealers have found it fits nicely into their inventory structure filling the needs of specific customers.

For 2012 Wicked Ridge offers its all-new Raider CLS. Built upon a solid

that the dealer can use to educate and assist their customers when it comes to selecting the correct arrow for an intended use.

All of TenPoint's bows are available with a rope cocker or its patented Acudraw or Acudraw 50, which provide quick and easy cocking devices that retract into a housing on the stock for convenient storage and quick access when needed. For more information on TenPoint's line of crossbows and accessories call (330) 628-9245.

Wicked Ridge

In 2010 TenPoint Crossbow Technologies launched Wicked Ridge Crossbows with the intent

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The Raider CLS from Wicked Ridge is all new for 2012. It is shown here with an accessory package and optional SteddyEddie. While Wicked Ridge models used some imported components when they were first introduced to the market, like the TenPoint models they are now fully American-made.

design platform the Raider CLS boasts a new riser and limb assembly featuring a new version of TenPoint's exclusive and popular Compact Limb System (CLS) technology. Highly maneuverable with a 17.5 inch axle to axle span cocked, the Raider CLS features 12 inch 180 pound IsoTaper limbs and a built-in ACU-52 integrated self-retracting rope-cocking system. The Raider CLS shoots at 330 fps and develops 101.6

foot-pounds of kinetic energy. MSRP on the Raider CLS package is \$799.

The Invader HP has been upgraded with an all-new bow assembly featuring 180 pound HL limbs. Fitted with a semi-skeletal stock the Invader HP generates 315 fps and develops 92.6 foot-pounds of kinetic energy. The MSRP is \$499 for the standard package and \$549 for the premium package.



The Invader HP from Wicked Ridge is faster and stronger for 2012. Featuring an all-new bow assembly and semi-skeletal stock the Invader HP clocks in at 315 fps with 92.6 pounds of kinetic energy from the 180 pound limbs.

Summary

Over the past several years crossbows have evolved to the point that a wide variety of styles and designs in various price ranges are available. While new users still make up a large part of the market, many of the earlier crossbow buyers are looking to upgrade to either better equipment or the latest technology. In either case, they are willing to spend more money. A portion of the new sales market share goes to catalogs or big box stores but almost all of the upgraded sales go to archery pro shops and other full service retailers as the customer becomes more knowledgeable and they seek a higher level of expertise and service. The dealer who keeps up with the latest changes in technology and design will find themselves in the perfect position to take advantage of both sales to new crossbow users and those who are ready to upgrade.

In addition to the crossbows themselves, an accessory market has also developed that allows the dealer an opportunity to generate a substantial profit in add-on sales. Watch for *ArrowTrade's* feature on crossbow accessories in the September issue.



Rounding out the line-up for 2012 is the Warrior HL. Fitted with HL limbs and CNC-machined wheels the 175 pound new bow assembly generates 300 fps and 84 foot-pounds of kinetic energy. MSRP is \$399 for the standard package and \$449 for the premium package. Like the TenPoint models these are all American-made. To learn more about the Wicked Ridge line phone (330) 628-9245.



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Camo Clothing Focus

Keeping Customers Scent-Free &

Every hunter going afield should know the importance of hunting with the wind in his favor. Wind and air currents carry human odor long distances and can easily spoil a long planned hunt. Shooting a big game animal at long distance with a rifle can be challenging but bowhunting presents an even greater challenge since a hunter needs to get within 20 or 30 yards of an animal, and that can be difficult. After hours on watch the last thing a hunter wants to happen is to have the trophy of a lifetime catch a whiff of him and run off never to be seen again.

The human body is covered with millions of odor emitting sebaceous and sudoriferous glands which allow perspiration and gaseous material to be eliminated by the skin. When a person perspires, the body cools down and a constant temperature is maintained. Perspiration is generally an odorless body secretion but, because the skin is covered with bacteria, they thrive on the moist skin causing body odor and therein lies the problem.

An odor is caused by one or more volatilized chemical compounds generally occurring at a very



The new mid-weight Rocky L2 jacket is designed for cooler or inclement environments and has a quilted, insulated core containing 60 grams of Primaloft insulation and uninsulated thumb sleeves for maximum mobility. Two waist zippered pockets provide storage space for items such as a cell phone or GPS unit.

low concentration that humans or other animals perceive by the sense of smell. Odors can be both pleasant and unpleasant and can even evoke long forgotten memories in humans. Game animals depend on their sense of smell to find food, each other and to avoid danger. Not surprisingly, a big game animal's sense of smell is its most important means of survival.

To address the problem of eliminating human odor when hunting,



The L1 jacket by Rocky is lightweight and perfect for warm weather hunting conditions. It features cool, 100 percent polyester mesh fabric with SIQ technology to control scent. It is available in Realtree All Purpose or Mossy Oak Break-Up Infinity camouflage patterns.



The L1 pant with SIQ Technology features Rocky Athletic Mobility and compliments the L1 lightweight jacket. A mock tee and base layer thermals manage moisture while providing anti microbial scent control protection.



Rocky's L2 pant offers 60 grams of Primaloft insulation and a 100 percent polyester ripstop shell and lining. The L2 jacket and pant are available in either Realtree AP or Mossy Oak Infinity camouflage patterns.

retailers can carry clothing, sprays and laundry products that incorporate a variety of high tech methods designed to trap or eliminate human odor. Activated carbon has been long known for its ability to adsorb odors and has been used in scent suppressing hunting clothing for years. Good quality scent suppressing hunting apparel can definitely improve the odds for a successful hunt and fortunately today leading companies are offering hunters even greater improvements in their hunting attire. Let's take a look at what clothing and other products are available that might make your customers more successful in the field next fall.



When conditions are harsh and a hunter needs to check a GPS or other electronics, he will appreciate how Rocky's new glove offering with SIQ technology allows quick access to the device without exposing skin to icy cold weather. Special fabric in the thumb and forefinger interacts with the device's touch screen for convenient use.

Odor-Fighting Clothing & Liquids

By Mike Raykovicz

Hunting Ready is Easier Than Ever

Rocky Brands

The name Rocky is almost synonymous with hunting boots but this year the company has introduced Rocky Athletic Mobility, a new line of athletic inspired, scent suppressing hunting apparel. According to Rocky Marketing Manager Steve Graham, the new apparel is designed for the cutting edge consumer looking for the same technology and features found in athletic apparel. Agility and flexibility are the key features for the new clothing line and it will be offered in three levels based on weather or anticipated hunter activity.

Graham said Level One (L1) is designed for mild weather or layering and includes a performance mock tee, pants and base layer thermals. Level Two (L2) is constructed with 100 percent polyester ripstop fabric and includes 60 grams of PrimaLoft One, a high tech microfiber insulation that absorbs three times less water thus making it 24 percent warmer when wet compared to competitive insulations. The L2 line includes a vest, quarter zip pullover, jacket, pant, beanie, logo hat, glove and hoodie.

Level Three (L3) garments are designed to serve as an outer shell when hunters anticipate facing harsh weather conditions. L3 garments are water repellent and consist of 100 percent polyester two layer performance fabric on the outside and a micro fleece lining on the inside. The fabric has four way stretch and is designed to incorporate Rocky Athletic Mobility fit and technology.

As part of its innovative Rocky Athletic Mobility collection, Rocky is releasing a touch screen compatible glove. Graham said today's outdoorsmen have their touch screen devices in the field with them but often can't easily use them without taking off their gloves. "These gloves make it easy to use a touch screen device while keeping the hands comfortable and warm,"

he told us for this article.

Built for a new generation of outdoor enthusiasts, the gloves are constructed with a synthetic leather palm and power grip. The index finger and thumb are covered in a touch screen compatible material making it easy to use mobile devices like phones or GPS systems. The neoprene knuckle and cuff and adjustable Velcro back give the glove extra sensitivity and comfort.

All L1, L2 and L3 clothing items contain what the company calls Scent IQ Technology (SIQ) to control human odor. Rocky's Scent IQ is a chemical finish that is impregnated into the actual clothing fibers so the clothing does not need any regenerating like carbon-containing garments need. Rocky claims hunters can forget the dryer, special laundry detergent and sprays because SIQ treated garments promise to reduce human odor by destroying it at the microbial level.

These new performance fabrics are used to provide supreme moisture management by pulling sweat away from the skin to keep a hunter dry during a long hike to a hunting location or while spending long hours in a stand. The athletic fit of Scent IQ apparel further improves its scent

The new Vigilante six pocket pant from Scent-Lok features waist adjusters to provide a snug fit and a draw cord closure in the leg to lock in scent. The pant is available in the Realtree MAX-1, Realtree AP or Mossy Oak Break-Up Infinity patterns.



blocking functionality by allowing a full range of motion which is critical when drawing a bow or shouldering a gun.

Call the Nelsonville, Ohio company for more information at (800) 848-9452.

Scent-Lok

The Scent-Lok clothing line using activated-carbon technology debuted in 1992 and today the company is an industry leader in producing advanced and effective odor-control clothing. From its inception, Scent-Lok has continuously improved the garments and accessories, while researching the best methods for achieving maximum scent control.

In 2012, Scent-Lok upped the ante in scent control by introducing its most advanced form of scent control clothing to date. Scientists worldwide recognize activated carbon is the best adsorbent for volatile odors and the company's



Scent-Lok's popular Savanna line gets a new addition for 2012 with the introduction of the Vigilante jacket and pant. Both feature Carbon Alloy technology for maximum scent control and are crafted from lightweight two way stretch fabric. With a zippered chest pocket and side pockets outfitted with zipper pulls, the jacket has plenty of storage for essential small items.



The new Mirage jacket with Carbon Alloy technology is the lightest, yet one of the toughest, offerings from Scent-Lok. A convenient chest pocket provides ample storage capacity for small items while contoured cuffs provide added comfort. The jacket and pant are available in either Realtree AP or Mossy Break-Up Infinity.

ABOVE: The Full Season Velocity jacket by Scent-Lok has a DWR treated outer fabric that sheds water while the incorporated inner fleece lining provides warmth on chilly fall mornings. Three zippered pockets provide room for small accessories.

ABOVE RIGHT: The Velocity Bowhunter six pocket pant has roomy leg cargo pockets and is available in Realtree AP, Vertigo Grey or Mossy Oak Break-Up Infinity patterns.

RIGHT: The insulated Cotton Classic jacket with Carbon Alloy technology features rip stop cotton fabric for added durability and deep hand warmer pockets for chilly fall hunts. It is available in Realtree AP or this Vertigo Grey camouflage pattern.



new Carbon Alloy Technology sets a new standard by adding other components to improve the adsorption ability of the carbon.

According to Alex Gyllstrom, the company's social media manager, Carbon Alloy Technology increases both the quantity and spectrum of adsorption and has an ability to target specific odors better than activated charcoal alone. Gyllstrom remarked

that this year the company has introduced several new clothing systems containing this new technology.

The Vigilante is a new addition to the company's popular Savanna line and should appeal to those looking for

a lightweight affordable garment with superior scent control. The Vigilante jacket and pant feature an athletic cut for mobility and Carbon Alloy Technology for maximum scent control. The jacket offers a paneled shoulder and chest area for a better fit while the six pocket pant provides plenty of room for gear. Hunters will like that the adjustable waist on the pant will accommodate a variety of layering options when the weather gets colder.

The Full Season Velocity jacket and pant continues to be a top choice for hunters looking for quiet performance when in a stand. The fleece lining is perfect for those chilly mornings and hunters will like how the treated outer fabric of both garments sheds light moisture.

Hunters preferring natural fibers may find the Cotton Classic jacket and pant provide just what they are looking for. Combining style with many handy features such as deep hand warmer pockets and snug knit cuffs for warmth, this duo is equipped with Carbon Alloy Technology for 2012.

Lightweight yet tough, the new Mirage jacket and pant are just the thing for warm weather hunts. Extra panels and seams help shape both garments and provide a comfortable fit that doesn't restrict hunters when they climb, shoot or hike through rugged

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Scent-Lok has added the new Full Season Recon jacket and pant to its line of scent suppressing clothing for 2012. The jacket features an opening in the back for a safety harness to pass through while the shoulder area provides a soft-shell weather barrier to repel moisture. The Recon pant has articulated knees that make climbing trees easier and a kidney warming waist design for added comfort on cold mornings. The pant and matching jacket are available in Realtree AP or Scent-Lok's own Vertigo Gray.



terrain. Customers will like the detailed styling with features such as gear webbing, zip pockets and a contoured cuff and collar to reduce chafing. The moisture wicking matte finish on the fabric repels burrs, yet is soft and quiet for those close encounters with game animals. The pant has an adjustable waistband and angled cargo pockets to improve access to gear while seated.

Scent-Lok's new Full Season Recon jacket and pant features a Sherpa fleece lining for maximum warmth and Carbon Alloy Technology for minimum odor. To prevent string slap, the jacket has zip sleeve openings that are contoured to provide a great fit and to keep the forearm trim. A fleece tipped collar reduces neck abrasion while articulated elbows allow freedom of movement. The matching pant has a kidney warming waist design and extra tall leg zippers that allow the pant to be slipped off over heavy hunting boots.

Some hunters spend countless hours in the field and the Head Hunter jacket and pant promises to satisfy even these hard-core enthusiasts. With Carbon Alloy technology and a soft-shell fabric for moisture resistance, these Head Hunter garments will keep them in the stand when the weather turns foul. The jacket offers four front pockets with weather resistant zippers along with two inside pockets designed

to keep cell phones and GPS units handy and dry. The six pocket design of the pant offers a hunter ample storage for an all day hunt. Hunters will also like the 21 inch leg zippers with two sliders that make dressing in the field



All fleece is not created equal because some standard fleece hunting garments can lose their warmth when the wind blows hard. The Rampage jacket uses an ultra quiet inner shell fused within the fabric to make it more effective in blocking wind. Zip sleeve openings at the wrist reduce bulk while synthetic pigskin shoulders repel moisture and light rain. A no slide finish keeps backpacks or gun and slings from slipping from the shoulder.

as easy as possible.

The Rampage is yet another new offering from Scent-Lok and it promises to be a great improvement over standard fleece hunting apparel. Fleece hunting clothing is quiet but can lose warmth under windy field conditions. This is where the Rampage jacket and pant really prove their worth because an ultra quiet inner shell is fused within the fabric. This way the Rampage blocks the wind and keeps the hunter warm and quiet. Hunters will like the deep built-in hand warmer side ports that provide enough space for both hands and chemical hand warmers. Six total pockets are provided to store needed accessories.

Hunters wearing the Timberfleece jacket and pant don't have to run for cover if weather conditions suddenly turn nasty. Both feature Carbon Alloy technology incorporated into a soft, wind resistant performance fleece fabric that keeps the hunter protected and quiet while providing total scent control. The jacket offers two side zippered pockets to store essential gear and a full front zipper and extra high collar for maximum scent protection. The pant has a five pocket design and an



The Hot Shot jacket and pant are new Scent-Lok offerings for 2012 and both come in either Realtree AP or this Vertigo Grey camouflage. With quilted, mid loft insulation, the Hot Shot combo promises to keep a hunter warm when nature sends things to the deep freeze. An extra large angled zippered pocket keeps gear secure while fleece underarm panels reduce noise.



Many women are taking up bowhunting and Scent-Lok has taken notice by offering the new ladies Wild Heart clothing series. The jacket features several zippered storage pockets and a distinctive pink Scent-Lok logo on the chest and sleeve. It is available in sizes SM-XL and comes in the Realtree AP camo shown.

elastic waistband with five belt loops to provide a custom fit. Leg zippers are standard and allow for easy dressing in the field.

odors. A light fleece inner lining adds comfort and warmth while smooth, silky inner sleeves permit easy on and off changes. The jacket also features

Another new Scent-Lok offering for 2012 is the Hot Shot jacket designed for cold weather hunting conditions. The Hot Shot jacket provides a quilted, mid-loft, lightweight insulation that will keep hunters warm when temperatures plummet. Wind and rain are kept at bay, blocked by a high performance stretch membrane fused within the outer shell while Carbon Alloy technology controls

a safety harness access opening, and extra large zip pockets.

Hunters looking for quiet performance and versatility in their hunting clothing will like Scent-Lok's new Velocity series. Featuring Carbon Alloy technology and a DWR treated outer fabric fused with an inner fleece lining, the Velocity jacket provides a light dose of warmth without bulk. A comfortable fleece tipped collar reduces whisker chafing while three zippered pockets provide secure storage. The pant features a six pocket design that includes two waist pockets, two rear pockets and two deep and roomy leg cargo pockets. A seven pocket bib is also available and features zippered legs for easy field dressing.

Scent-Lok hasn't forgotten the ladies this year either because the Wild Heart jacket and pant are designed exclusively for them. The product development team at Scent-Lok designed these garments from the ground up specifically with women in mind. They're cut to complement a woman's shape and then combined with

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unrivaled odor adsorbing technology. The jacket features a bison sweatshirt hood with a camo inner liner for comfort and warmth along with a tapered collar to prevent neck abrasion. It also has a tricot outer shell with a fleece lining for warmth and tapered arms with a zip sleeve opening to make dressing easy. Angled, zippered deep well pockets provide plenty of storage in the pant while wrap around leg zippers make it easy for a woman to dress in the field or at home. There is even a separate pocket to store a cell phone.

Scent-Lok has also added two new shirts containing Carbon Alloy technology to its line. The Ambush contains both activated carbon and an anti-microbial treatment that delivers a potent one, two punch to block human odor. The Ambush wicks moisture away from the skin and reduces abrasion to provide comfort along with effective scent control.

The Attack is a quarter zipper shirt that works great when it is worn alone or when temperatures are moderate. It can also be used as a second layer when colder weather approaches. The Attack is light enough for minimal bulk yet warm enough to beat the chills. To find out more about any of these products contact the Michigan company at

With its full front zipper and quick draw cinch fit system, Scent Blocker's Super Freak jacket is perfect for warm weather hunting conditions. The new Cold Fusion infused carbon scent barrier sandwiched

between the inner and outer layers of the jacket, keeps a hunter's scent effectively contained. The jacket has specifically designed closure features at key exit points that allow the carbon to act as a filter in preventing the escape of odor.

The Super Freak pant has a diamond crotch gusset for maximum mobility and contoured knees to allow a hunter to climb up or down a tree unimpeded. A zipper fly with double rubber snap closures is incorporated in the garment while 20 inch leg zippers make putting them on or taking them off an easy procedure. Both the Super Freak jacket and pant come in Realtree AP Dark Chocolate and Mossy Oak Infinity Dark Chocolate camouflage patterns.

(800) 315-5799.

Robinson Outdoors

For 2012, Robinson Outdoors says it has developed products that promise to be game changers for their dealers' customers. These products combine advancements in the science of hunting coupled with exceptionally detailed first class features.

ScentBlocker clothing paired with Scent Shield sprays form a complete

system of scent control and this year the company is offering its entire line of ScentBlocker clothing with new, infused carbon technology it calls Cold Fusion. This technology embeds micro powdered carbon into every fiber of



Getting into or out of the Triple Threat pant is easy because of the incorporated 14 inch leg zippers. Five large pockets are provided for ample gear storage while an elastic side waist band with belt loops insure the pant will fit as clothing layers are added.



ScentBlocker has dialed up the warmth and quietness factors of fleece clothing by offering the new Protec jacket for 2012. The jacket has an extra high warmth to weight ratio and features the new Cold Fusion scent suppressing technology. Elastic cuffs and a full front zipper allow a hunter to dress quickly while in the field. It is available in Realtree AP or Mossy Oak Break-Up Infinity camouflage patterns.

When wind, rain and scent need to be controlled, hunters will turn to ScentBlocker's new Triple Threat jacket and pant. The jacket has three pockets for storing gear and a visor hood with crown and side adjustments. The Micro-tricot material is soft and treated with breathable RainBlocker technology.

fabric, on a microscopic level. The result is what the company says is an improved scent barrier and a quiet, more comfortable garment. In fact, the new line of Cold Fusion clothing has the highest level of activated carbon surface ScentBlocker has ever offered.

For warm weather hunting conditions the new Super Freak jacket and pant are sure to get attention from hunters. These top of the line garments offer multi-layer construction and are extremely lightweight, quiet and breathable. The Cold Fusion infused carbon scent barrier between the inner and outer layers keeps scent effectively contained while the burr resistant fabric allows a hunter to silently slip through the thickest cover. The jacket has a full front zipper and a handy rear grommet license loop on the back. Two chest pockets and two lower front pockets keep essential gear handy.

The Super Freak pant provides hunters with an adjustable waist, high back, with belt loops and belt tunnels. Hunters will like the hard plastic loops below the waistband for gear and the Diamond Crotch Gusset that provides maximum mobility. Two side pockets and two zippered bellows hip pockets with a side zipper access are combined with two zippered rear pockets to securely store gear and insure against loss. Hunters will also appreciate how the hydrophobic surface treatment makes water bead up and roll off both garments.

Wind, rain and scent are kept at bay with ScentBlocker's new Triple Threat jacket and pant featuring Cold Fusion technology. Both garments are waterproof, windproof and breathable and both feature micro tricot material that is soft, warm and quiet. Hunters who go out regardless of the weather will appreciate how the incorporated hood design, pocket placement, and sealed taped seams are combined with high tech closures to keep moisture on the outside.

The jacket features a full front zipper with a storm flap and a crowned visor hood with side adjustments. It also has an innovative safety tether slit in the back to make hooking the harness up to a safety line simple and quick. A pocket with a snap closure is

located on the chest while two more are conveniently located on the lower part of the jacket.

The Triple Threat pant offers hunters a side elastic waist with belt loops and a zipper fly with double closures. Two front waist zippered pockets and one rear zippered pocket are combined with two snap closure cargo pockets to provide plenty of storage capacity.

The recently introduced ScentBlocker Protec jacket and pant provide hunters with warm fleece

comfort combined with the Cold Fusion activated carbon. The jacket and pant offer hunters a multi-layered, extra high warmth to weight ratio. It uses a non-pilling fabric combined with the superior scent control of Scent Fusion technology. The full front zippered jacket features elastic cuffs, two lower zippered pockets and one zippered vertical chest pocket. It also has an innovative safety harness slit in the back for easy attachment to a safety line.

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ScentBlocker's newly introduced Recon jacket uses a specially engineered ripstop fabric system that is lightweight, strong, tough and silent. It offers S3 advanced antimicrobial fabric technology that helps keep scent to a minimum.



The Recon pant features an innovative pullout elastic strap closure for tucking into boots and to keep dirt and ticks on the outside while keeping scent inside.



With a sleeve pocket and snap closure the Recon shirt offers S3 antimicrobial technology to help keep a hunter scent free. Articulated, reinforced elbows are also featured for ease of movement and increased durability.

The six pocket Protec pant has two jeans-style inset pockets, two cargo bel-lows pockets and two rear snap pockets that provide plenty of room for calls, a GPS unit, small tracking lights or anything else a hunter needs while in the woods. Twenty inch leg zippers make dressing in the field a quick, simple process.

When outerwear is stealthy, tough, lightweight and breathable it quickly becomes a favorite among hunters. The new Recon jacket and pant with S3 antimicrobial fabric technology does all these things and more. S3 technology reduces the growth of odor causing bacteria and minimizes scent. Multiple pockets on both garments are strategically placed and angled to provide fast access when in the field. The shirt, pants and jacket are designed for efficient movement when climbing, crawling or positioning a bow or firearm. The Recon jacket is compatible with the Tree Spider descent system and has an innovative safety harness slit incorporated into the back of the jacket.

Women are the fastest growing customer segment in the bowhunting market and to meet the need of female hunters, ScentBlocker has introduced The Tempest, a line of scent suppressing clothing that is designed to fit a wide range of female body types. The Tempest line provides Pro Fleece warmth without bulk and DWR water resistance combined with Cold Fusion

technology to make this an outfit of choice for women serious about hunting. The left sleeve of the Tempest jacket has a zippered pocket and two more pockets are located lower on the jacket. Two rear kidney warmer pockets are included to provide additional warmth while a safety harness slit on the back allows for quick attachment of a harness tether to a safety line.

The Tempest Bib has adjustable shoulder straps, while the torso has elasticized panels to provide a more optimum fit and scent control. The bib also features two waist zippered pockets, two snap cargo pockets and two rear zippered pockets that keep essential gear at the ready. Women will also appreciate how the contoured front knee panels allow for additional flexibility when climbing a tree or when sitting on stand.

A Tempest watch cap with a contoured ear design and ponytail slit is also available as are the new Tempest gloves which have an innovative silicon grip on the palms and a soft fleece exterior and interior for warmth without bulk.

Women don't need to stay home or in camp when the weather turns nasty because the Sola Triple Threat jacket and bib offer exceptional comfort, weather protection and scent control blended into one outfit. With RainBlocker weatherproof and breathable protection a woman can stay as long as she wants waiting for the shot she expects. The Sola Triple Threat offers soft, warm, tricot fabric. They have an effective hood, pocket and

closure design that are all planned, cut and constructed to give a woman free movement while she is waiting for a shot opportunity.

Adding to its 2012 line, ScentBlocker is offering the new Recon shirt, jacket and pant that are specially engineered from a ripstop fabric system that is lightweight, strong, tough and silent. The company says this combination creates an entirely new kind of outerwear that is soft, rugged, lightweight, cool, breathable, and extremely comfortable to wear. Multiple pockets are strategically located and angled for fast access to necessary gear. The shirt, pant and jacket are designed for efficient movement when climbing, crawling or shooting.

The Recon jacket offers two upper chest pockets along with two sleeve and lower pockets and is Tree Spider compatible, meaning it has the clips needed to attach one of the safety harnesses inside the jacket. A full zippered front makes putting the jacket on or taking it off a quick, simple matter.

The Recon shirt has a convenient sleeve pocket with a secure snap closure. Articulated and reinforced elbows provide for ease of movement and additional durability.

Hunters will like the reinforced seat and knee area of the pant along with the innovative pullout ankle straps



One of the most innovative features incorporated into the Arcticshield X-System Performance Fit II and Pro Series 3 in 1 jackets are the internal carry straps that allow a hunter to easily carry rather than wear the jacket on a long hike to a treestand or hunting area.

with button loop closure that allows them to be comfortable when the pant is worn inside boots.

One of the best natural wicking and temperature regulating materials available is superfine Merino wool. A lightweight base layer is preferable in the early season because it helps stabilize body temperature as the day gets warmer. The new Super Skin shirt and pant blends high performance Merino wool with superior quality polyester



Shaped for the feminine figure, the X-System Women's heavyweight fleece pullover and fleece pant contain scent suppressing X-System anti odor technology and soft, comfortable fabric that wicks away moisture. The pant has an elastic waist for a comfortable fit.

to provide a free moving close body fit with increased durability and reduced shrinkage. S3 antimicrobial technology inhibits odor formation even under the most demanding field conditions.

When daytime temperatures warm up and then cool down, the 8th Layer Baselayer shirts and pant can help stabilize body temperature. Robinson says many hunters are choosing to wear this 8th Layer next to their skin because the shirts are cool to the touch and practically weightless. S3 antimicrobial technology helps control odor and the shirt won't make a hunter feel confined or impede a shot. As a first layer it works to



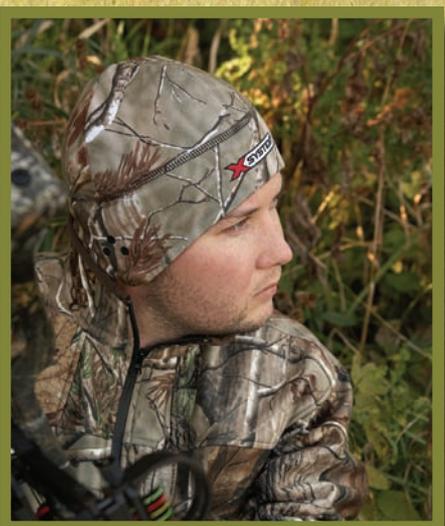
products contact the company at (507) 263-2885.

Onyx

Onyx is a newly formed brand under Absolute Outdoor, a company that is located in Sauk Rapids, Minnesota and that is affiliated with the Kent Sporting Goods Company based in New London, Ohio. They specialize in a multi-brand portfolio of outdoor, water sports, and marine products.

Onyx offers a number of products for deer hunters including jackets, pants, gloves, base layer pullovers, crewneck tops, a hoodie, balaclava,

which moisture away from the skin and it can be worn alone or in combination with lightweight wool or fleece. The 8th Layer shirt comes in either a short or long sleeve version while the pant has an elasticized waistband and boxer style front fly. For additional information on these new



The new X-system Fleece Beanie offers great head protection because it is wind-proof, water resistant and breathable. X-System technology controls odor and the beanie's universal size fits most.

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Hunters going afield wearing the ArcticShield Pro Series 3 in 1 jacket with an X-System liner will find they have the latest in scent suppression clothing coupled with state of the art ArticShield heat retention system technology. The X-System anti odor technology is included in the jacket's zip-in liner and promises to keep a hunter odor free plus reduce existing odors. It is available in Mossy Oak Infinity or Realtree AP camo patterns.



The Pro Series Bib with X-System lining features a low front, high back and ample storage combined with hand warmer side pockets. The hip high, two way zippered leg gussets with snapped storm flaps allow the hunter to put the bib on or take it off easily. The bottom cuffs cinch up to keep out rain or snow as needed.



Similar to the jacket at right, the ArcticShield Performance Fit II Bib is loaded with six strategically placed outer pockets for conveniently storing all necessary gear. The knee high leg gussets with snap storm flaps allow easy on and off in addition to providing air movement when things heat up.



With two hand warmer cargo pockets with snapped storm flaps and a clean front that makes it easy to draw a bow or shoulder a gun, the ArcticShield Performance Fit II jacket with X-System lining is a great choice in cold weather. An internal carry strap allows the hunter to carry the jacket on his back when the temperatures warm up or when faced with a long hike to a hunting location.

beanie and socks all containing the X-System technology. X-System technology uses a fabric containing patented nano silver fibers to reduce human body odor by inhibiting the growth of bacteria. In addition, any existing odors are controlled by a neutralizer. The bacteria killing ability of the nano silver fabric will never wash out and never has to be reactivated or regenerated for the life of the garment.

Onyx also offers a line of cold weather protection that includes the X-System scent suppressing technology incorporated with what it refers to as ArcticShield Technology. The company says clothing made with this

technology captures up to 90 percent of a wearer's body heat and returns it back to keep him or her warm and comfortable. ArcticShield works by preventing radiated body heat from escaping and external cold temperatures from penetrating through the clothing. What's more, there is no extensive layering required and it is lightweight, wind-proof, and helps block moisture.

The new for 2012 X-System Women's Heavyweight fleece pullover is constructed with four way stretch and 320 gram polyester fleece which

wicks away moisture, allowing the garment to breath. This pullover provides dual action odor and scent control while requiring no reactivation or regeneration. A one quarter zip front provides easy access while double needle stitching on the arms, neck, and side panels combined with bar tacked stress points promise long lasting durability. The matching pant is also constructed of 320 gram polyester fleece for extra warmth and has an elastic waist.

Onyx offers the new X-System Heavyweight fleece pullover for men with the same features as the woman's version. The pant has a heavy duty classic waistband, an open cuff at the bottom and double needle stitching on the inside leg panels. These new pullovers are available in mid-weight and lightweight editions.

The ArcticShield Pro Series 3 in 1 Jacket with the X-System liner does triple duty by providing ArticShield heat retention technology and a



Foot odors won't ruin a hunt because X-System polywool socks contain nano silver technology to control the growth of odor causing bacteria. The nano silver particles are permanently integrated into the fibers of the fabric and will last the life of the socks. The 18 inch X-System Boot socks come in black, Foliage, O.D. green, Coyote brown or tan colors.



Since a great deal of human odor is emitted from around the head and neck, the X-System Fleece Balaclava will control the odor while keeping the hunter warm and comfortable. The Balaclava is breathable, wicks away moisture, and comes in a universal size that fits most.



Cold hands won't be a problem for hunters when wearing the new X-System Fleece gloves. These durable gloves are designed with a reinforced dot grip texture on the fingertips and palms for a sure grip. Easy-flex construction on the index finger and back provides dexterity for drawing a bow or when squeezing a trigger. They are available in Realtree AP or Mossy Oak Break-Up Infinity camouflage patterns.

zip-in liner containing X-System anti odor technology to control odor causing bacteria while simultaneously reducing existing odors. This system is designed primarily for late season hunting and is constructed with a quiet, burr free micro suede outer shell and a polymer inner lining. The jacket is water resistant and offers a two way front zipper and ventilating arm pit zippers to properly vent when needed.

The matching bib has a low front, high back design and offers ample storage and two hand warmer pockets. The two way zippered leg gussets are hip high and are protected with snapped storm flaps. Hunters will like how the adjustable bottom cuffs



Sport-Wash Hair and Body Soap comes in a 4 ounce tube or 16 ounce bottle. It is scent free and rinses completely to keep a hunter clean and odor free. The product does not alert game or attract insects.

Sport-Wash by Atsko promises total care for all sporting products. Use Sport-Wash to maximize the performance of all high tech fabrics and insulation and to restore all factory applied waterproofing (DWR). This is a scent free detergent and is safe for use with all washables. It removes odors and stains including grass, blood and oil and contains no UV brighteners. It is environmentally friendly by being biodegradable and phosphate free.



Scent-A-Way Carbon Clean by Hunter's Specialties contains Camo Guard for color pattern retention and is designed to effectively clean carbon hunting clothing. It is ultra concentrated and contains no UV brighteners.



Scent-A-Way Continuous spray controls odors by molecular conversion, oxidation, bonding or neutralizing scent causing molecules. It is available in this new spray bottle and comes in either an odorless spray or with a fresh earth aroma. The product is marketed as a single spray bottle or packaged in a Twin Pak, Pro Pak or Mega Pak containing a 64 ounce bottle and two 12 ounce spray bottles filled with Scent-A-Way Odorless.

cinch up to keep out wind and rain.

The ArcticShield Performance Fit II Jacket and Bib are constructed of an ultra quiet, burr free, micro suede shell containing the ArcticShield and X-System technologies that allow a hunter to stay warm, quiet and odor free while in a stand. The jacket and bib are versatile enough to use during early season bow hunts and later in the season when hunting with a rifle or muzzleloader. The jacket has pockets galore and an interior zippered, removable snow skirt to help keep out the cold. For really cold weather, two hand warmer pockets with snap storm flaps are also included.

The bib has six strategically placed outer pockets for convenient



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storage of all necessary gear while the knee high leg gussets with snap storm flaps allow the bib to be easily put on or taken off.

SPRAYS, DEODORANTS AND CLOTHING WASH

No discussion of scent suppression can be complete without reviewing the various sprays and detergents that have been developed to control human odor. Over the past 15 years, there has been a dramatic increase in the number of these products including sprays, body soaps, deodorants, clothing wash and even chewing gum, breath sprays and breath lozenges. Most hunters, and bowhunters in particular, now use at least some of these products to give them an edge in the field and this means additional business for a dealer.

Scent control first begins at home. Hunting clothing should be washed in a scent eliminating washing product such as Scent-Lok's Carbon Reactivating Detergent, Sport-Wash by Atsko, Scent-A-Way Laundry Detergent by Hunter Specialties, Tink's Laundry Detergent with Byotrol Technology, Dead Down Wind's Triple Action Laundry Detergent or the new Scent Killer Gold Clothing Wash



Scent-Lok Field Spray, with enzyme technology, helps prevent and reduce a broad spectrum of odors including body, smoke, gas, and other synthetic contaminant odors. The key is multiple enzymes that attack specific odor compounds and break the molecular chain. Scent-Lok Field Spray is safe to use on Scent-Lok apparel and helps prevent the clogging of activated carbon pores.



Scent-Lok Carbon Reactivating Detergent cleans deep into the carbon pore structure and helps improve the reactivation performance for activated carbon hunting garments. Enzyme technology deep cleans both the fabric and the carbon, leaving the garment ready to adsorb odors. It is highly concentrated and 2 ounces is enough to do a full wash.



Scent-Lok Body and Hair Wash includes a skin-cleansing enzyme technology to help control odor on the skin, scalp, and hair. This technology was developed to target the wide spectrum of compounds hunters encounter such as fuel, smoke, grease and blood.



Robinson's Scent Shield Micro Travel Kit contains an underarm deodorant stick and one 4 ounce bottle each of liquid body soap, shampoo, and human scent control plus an unique twist up razor that takes Schick or Gillette replacement blades.

by Wildlife Research. These laundry detergents offer a formulation that is compatible with standard as well as high efficiency washing machines and contain no UV brighteners.

Scent-Lok's Carbon Reactivating Detergent utilizes powerful enzymes to enhance its performance in the field and to clean stubborn stains while eliminating odor compounds. It is formulated with specific enzymes to target a wide variety of odors typically encountered by hunters such as blood, smoke or exhaust.

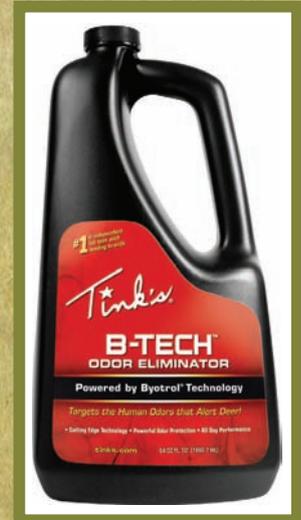
Scent Killer Gold Liquid Clothing Wash is designed to provide superior cleaning power combined with ultra concentrated odor fighting control. This new formulation produces twice as many loads per ounce compared to regular Scent Killer Liquid Clothing Wash.

Sport-Wash Scent Destroying Laundry Detergent by Atsko cleans, deodorizes and restores loft and effectiveness to down and synthetic insulation. Sport-Wash not only cleans well, it restores factory applied DWR type water repellents and is ideal



Robinson's Bone Collector scent elimination kit makes it easy for a customer to get the protection they need including one each of Silver Shield scent elimination spray (12 ounce), clothes wash (12 ounce), body soap (12 ounce), shampoo & conditioner (12 ounce), Fall Blend with Silver Shield (12 ounce) and a 7 ounce bottle of deodorizing body foam.

Tink's offers its B-Tech Odor Eliminator in a 64 ounce size to enable hunters to refill existing bottles giving them a better value. This size is sure to appeal to the serious hunter who is also cost conscious.



for carbon, silver and other odor control clothing and base layers. Sport-Wash rinses completely, leaving no residue and requires just 1 ounce per laundry load.

Robinson Outdoors offers its line of Scent Shield laundry detergent in two versions. The Bone Collector Clothes Wash is specially formulated for heavily used hunting clothes and rinses thoroughly. It promises to leave no fragrance and no membrane clogging residue. Scent Shield Laundry Detergent for Carbon Clothing is a super concentrated, powerful liquid detergent that cleans and



T4 Dry Packs contain ScentBlocker's most advanced scent elimination formula in a powder form. Easily packable and protected in a small plastic package, they are great for traveling on hunting trips or roughing it on remote hunts. Just add 16 ounces of clean water to make enough spray for several hunts.

deodorizes hunting clothing with a proprietary odor free formula and is specifically formulated to clean carbon clothing. This laundry detergent not only removes soil, stain and odor from hunting clothes, it rinses clean and will not clog the micro pores of carbon hunting apparel or leave any unwanted residue.

Scent-A-Way Carbon Clean liquid detergent by Hunter's Specialties is another effective laundry detergent formulated to clean all types of carbon clothing and it is ultra concentrated so a little goes a long way. This

detergent features what the company calls Clean Rinse and Stain Guard to help prevent the re-depositing of dirt or soil on clothing. Hunters will find it cleans in all water temperatures so there is no

need to worry about harming moisture wicking base layers by washing them in hot water. Scent-A-Way Carbon Clean liquid detergent contains no UV brighteners and its Camo Guard enzyme provides color and pattern protection so camo colors remain just as effective as when the garment was new.

Tink's Laundry Detergent uses Byotrol Technology to control odor and is based on an extended European research and development project dedicated to bacterial control for use in hospitals and food processing plants.



Fall Blend combines the power of Scent Shield with a natural earth scent cover-up for those wishing to use a cover scent for added protection. It is available in 12, 24 and 32 four ounce spray bottles.



Tink's B-Tech Forest Floor Blend at left above provides customers with the added value of odor elimination and a cover scent in one product. It has all the great qualities of Byotrol scent suppressing technology in a 16 ounce trigger spray bottle. The unscented version is at right.

B-Tech is a powerful but gentle product that does not contain bleaches, metal salts, or other chemicals that commonly irritate skin. It is highly concentrated so a little goes a long way.

The folks at Dead Down Wind believe hunters should follow a three



Wildlife Research is so confident hunters will find the new Scent Killer Gold Body Wash and Shampoo to be effective it offers a money back guarantee. The product contains a powerful anti odor formula and provides a refreshing, deep cleaning lather. It even contains moisturizing aloe for added skin protection.

Wildlife Research's new Scent Killer Gold Ultra Premium Clothing and Boot Spray is powered with a proprietary SKG 99 technology that has more odor fighting power than the popular Super Charged Scent Killer. It keeps working even after it dries and works for days. It comes in either a new 12 or 24 ounce pistol grip bottle.



Scent Killer Gold Liquid Clothing Wash offers ultra concentrated odor fighting power combined with ultra premium dirt and stain fighting power that gets hunting clothes clean and odor free. The new Scent Killer Gold clothing wash provides twice as many loads per ounce as Scent Killer clothing wash. It comes in an 18 ounce bottle and contains no ultra violet brighteners.



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step system for optimum results in achieving an odor free environment. The first step is to have clean clothing and to achieve that they offer their Triple Action Laundry Detergent which cleans natural, technical or synthetic fibers including carbon apparel. This detergent is powerful enough to remove stains while inhibiting ultra violet glow.

The second step in odor control they say is personal hygiene. DDW offers E2 products with 3D technology that not only eliminate existing odors but also retards them from reforming. This year a body and hair soap, hand and body lotion, sunscreen, shampoo and conditioner have been added to the E2 line.

The last step in odor control involves field application of Evolve 3D Field Spray. Evolve 3D is the company's proprietary bio-engineered enzyme technology that prevents and terminates the full spectrum of odor molecules including human, smoke, gas, food and other odors.

Other sprays like Robinson Outdoors Original Scent Shield Fall Blend and Ti4 Titanium Spray along with Scent-A-Way by Hunter's Specialties, Scent Killer Gold by Wildlife Research and Scent-Lok's Outdoor Field Spray, prevent and eliminate odors by converting, oxidizing or bonding with them, essentially breaking down the



To insure hunting clothes remain scent free when a hunter isn't using them Tink's offers the Carbon Bag for odor protection. The bag has heavy duty handles for easy carrying and its large, 30 x 25 inch size ensures it will fit all hunting apparel. A tough 200 denier coated outer shell keeps odors out. It comes in a compact packaging to make it easy to display.

odor-causing molecules.

Tink's offers hunters B-Tech Odor Eliminating spray that the company says has been scientifically proven to destroy over 300 odor causing compounds produced by the human body. These include perspiration odors and the natural ammonia compounds emitted by the normal transpiration of human skin. Byotrol Technology creates a microscopic barrier of protection that prevents odors from clinging to clothing or skin. For those desiring a cover scent, Tink's B-Tech Odor Eliminator Spray is available in a Forest Blend as well.

Robinson Outdoors Original Scent



Scen-Lok's ScenTote Travel Bag is available in three different sizes to accommodate any combination of gear a hunter might need and want to keep odor free. The removable Carbon-Web Adsorber in the top emits activated-carbon down into the bag for even, effective odor control.

Shield stops human odor at the molecular level by preventing it from forming a gas. By spraying it liberally on hunting clothing, boots and other gear a hunter can instantly neutralize human or other foreign odors. This year the company has announced the new Ti4 Titanium Scent Elimination Spray that uses the power of nano-technology to make clothing and gear scent free. It prevents the formation of human odor at the source and neutralizes human odor instantly on contact. It works so well it even oxidizes all odors including gasoline and cigarette smoke.

Fall Blend combines the power of Scent Shield with a natural earth cover scent and neutralizes human scent on contact. ScentBlocker also offers a powerful clothes wash in addition to a carbon laundry detergent, shampoo and conditioner, body soap and hair and body deodorant.

When faced with long hikes to a hunting location carrying extra weight is always a concern. Ti4 Titanium Supercharged Dry Powder weighs only ounces but can be added to clean water to produce 16 ounces of scent killing spray. Ti4 Titanium Supercharged Dry Powder utilizes the power of nano titanium dioxide to prevent, neutralize, adsorb and oxidize human scent and other odors and is perfect for the hunter who needs to keep weight to a minimum.

Scent Killer Gold is the new



To keep gear safe and scent free many hunters have come to rely on the Hard Tote by Scen-Lok. The carbon Web Adsorber allows the activated carbon inside to be suspended to the lid to allow for free air circulation. It is a great way to transport hunting attire when using an ATV to get to a hunting location.

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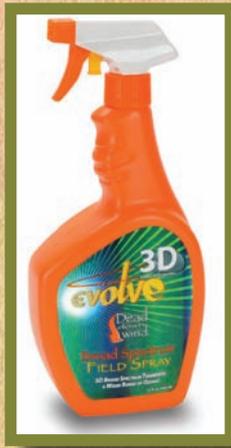
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Dead Down Wind's Body and Hair Soap cleans, protects and keeps on working on the body's major scent areas for extended periods. This product is formulated for skin, hair and scalp and contains skin nourishing ingredients making it effective in eliminating odors and appealing to female hunters as well.



Dead Down Wind's Antiperspirant with 3D Broad Spectrum technology comes in a 2.25 ounce stick and is highly effective in neutralizing underarm odors.

Clean clothing is the first step in Dead Down Wind's approach to scent control. 3D Triple Action Laundry Detergent (left above) is specifically formulated to knock out a broad range of odors including chemically induced cover scent. This detergent is effective against perspiration odor and efficiently removes a variety of stains including blood.

premium line of human scent elimination products from Wildlife Research Center. These new products include Scent Killer Gold Clothing and Boot Spray, Gold Liquid Clothing Wash and Scent Killer Gold Body Wash and Shampoo.

According to Ron Bice, communications director at Wildlife Research Center, these are premium products and work better than anything previously offered. Bice explained the new Scent Killer Gold Spray is powered with a proprietary SKG 99 technology which

Dead Down Wind products with 3D technology like this Evolve 3D Field Spray eliminate existing odors and are instrumental in preventing odors from reforming.

is a special blend of sophisticated odor fighting ingredients that deliver a multi pronged attack against a wide range of odors, especially human odor. Scent Killer Gold has even more odor fighting power than Super Charged Scent Killer, which has been previously proven to stop 99 percent of replicated human odor. Bice said Scent Killer Gold is a comprehensive formula that attacks existing odors at multiple levels while simultaneously helping to prevent new odors from forming. It keeps on working after drying so you can pre-treat clothing and know that its performance can be effective for days.

To maximize odor adsorption and to help hunters go undetected by game,

Scent-Lok has improved the formula of all of its liquid products including the Outdoor Field Spray that offers a broad spectrum of scent control. By simply spraying it on boots, hands, clothing and other accessories a hunter can reduce or completely eliminate his odor.

There are numerous manufacturers of odor reducing soaps, deodorants, sprays, shampoo and even breath spray and it's safe to say they can all be used in conjunction with scent suppressing clothing to eliminate as much human odor as possible while hunting. These products are embraced by the majority of bowhunters and can spell big business and increased profits for the retailer. Hunters can be made aware that suppressing human scent and other odors depends on an interactive system of products that when used properly, will keep a hunter as scent free as possible.



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Buck Stop's second generation owners are reintroducing the Scent Stop scent eliminating products with the help of improved formulas and packaging. The line includes a laundry soap, body wash, unscented scent eliminator spray and a spray enhanced with a "dirt" essence.

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Camo Clothing Focus

Selling Camouflage to Smaller Customers

Friends and acquaintances regularly tell me how lucky I am to have a wife who enjoys bowhunting and the outdoors. Most of them seem to be wishing their spouse or child would take more interest in their archery passions. I normally offer the mocking reply to be careful what you wish for; unless you're ready to trade personal hunting time for full-time guiding chores and essentially double hunting and equipment costs.

All joking aside, in the hectic times we live in, it's nice to spend unfettered time afield truly relaxing and enjoying

the company of a loved one. Too many children are slowly losing touch with the outside world, with their noses perpetually in a computer screen, video game or iPhone. Bowhunting is a good antidote to the "virtual world" they can experience electronically. It lets parents instill some basic reality through nature, truly learn what's on their kid's minds and share what's commonly referred to as quality time together.

The usual advice in this business, the key to promoting continued participation, is to make hunting fun for your partner or child. They'll tell you to keep

it interesting, to be very careful not to bore your apprentice with too much time on stand or too many miles on the trail. They'll remind you that your wife or child more than likely isn't as wound up in bowhunting as you are. It's likely they are simply curious, or just wish to spend time with you. Utmost patience is a must. One extremely important aspect I'd add: Assure your new hunting partner is outfitted with quality camouflage clothing that fits correctly and keeps them comfortable under prevailing conditions. In most cases, this means keeping them warm and dry in wet, chilly weather.

When my own

wife Gwyn first expressed interest in bowhunting, it came out of the blue. She wanted to shoot a turkey with her bow (which she'd been shooting 3-D with for several years) because "Turkeys are ugly, goofy birds." Good concealment is more important in turkey hunting than any other form of bowhunting. However, we had nothing available in the way of camouflage but hand-me-downs. That would mean pant waists cinched down with belts so they wouldn't fall down, sleeves and pant legs hacked off with scissors and crudely hemmed plus the odd garment that had shrunk from too many washings. I'm a lanky 6 foot 5 inches tall, my wife is a petite 5 foot 3, so you can imagine the sight as we hiked up the trail. We've all laughed at the cute pictures of a son or daughter swathed in clothing making them appear as if they came straight out of the '80s Tom Hanks movie "Big" but this isn't the way to inspire repeat attendance.

Yes, I fully understand many females are dead-serious, die-hard bowhunters and not simply adjuncts to their partner's activities. Just look at gals like Muzzy's Michelle Eichler, Vickie Cianciarulo of Archer's Choice, as well as Tiffany Lakosky, Nicole Jones, and Gina Brunson. These are just a handful of favorite "Dianas" who are all capable of out-shooting and out-hunting many men. In the real world outside of outdoor television, the ranks of women bowhunters is growing every year. According to published numbers from the National Shooting Sports Foundation (NSSF) women's participation in bowhunting has increased 178 percent during the past five years.



The Onyx ArcticShield line has grown in recent years, meaning the company's low-bulk, high-efficiency insulating system is available to smaller bowhunters.

Fitting Women & Youth

By Patrick Meitin

Up to three million women are now involved in hunting, making up 15 percent of the nation's total.

This increase in female interest has spawned lady-specific clothing brands, with names such as Prois and SHE Outdoor Apparel offering nothing but women's hunting togs. Then you have major players like Scent-Lok, Robinson Outdoors and Absolute Outdoor/ArcticShield, as examples, introducing bowhunting camouflage designed and cut specifically for the female form. Youth-specific hunting duds are also more common today, allowing junior to take to the field with materials and technologies like mom and dad's, but tailored for a better fit. This creates opportunities for additional sales not available before. Stocking clothing sized for women and youth is another way you can show they're welcome in

your store, whether they arrive with a husband or parent or on their own.

Men Need Not Apply

Prois Hunting & Field Apparel
www.proishunting.com

Prois founder and owner Kirstie Pike is a hard-core hunter, pursuing game big and small not only near her Colorado home with husband and teenage daughters, but across the nation with like-minded females. She believes women should never have to settle for downsized menswear, or up-sized children's gear. All Prois pieces are cut specifically to better fit the female form. They also incorporate cutting-edge fabrics and materials found in big-name male bowhunting wear, with designs providing real value-added features to

make any outing more efficient and comfortable. Prois designs are continually evolving to take advantage of developing technologies.

For example, the new Prois Intuition System clothing incorporates the HECS Stealthscreen technology, giving female bowhunters an extra edge by blocking electromagnetic signals emitted by humans. HECS says these signals are easily detected by big game animals and birds, especially as the heart rate quickens. The lightweight base layer doubles as good outerwear in hot weather. The under-shirt and bottoms have a MSRP of \$80 each and they include a grid of conductive carbon to "cage" electromagnetic signals. The high

carbon content possibly helps filter scent. The long-sleeve shirt and fitted bottoms are soft against the skin and breathable, perfect for layering. The material is laser cut to resist fraying and features tapered ankle and wrist cuffs to keep warmth in and to fit properly with boots and gloves. They're machine washable and made in the USA.

The new-for-2012 Elevation Jacket (MSRP \$220) and Pants (\$205) from Prois can be supplemented by a Beanie, Neck Gaiter, Vest and Shirt. They all



HECS technology was engineered to block electromagnetic signals sent by any living being, allowing wearers to get closer to animals without alerting their sixth sense. The Prois HECS top and bottom are made to fit the female form.



Prois founder/owner Kirstie Pike shows off the new Elevation line at the recent ATA Show in Columbus, Ohio. The complete outfit shown is designed to keep active female bowhunters in the game when weather turns rough.

make up a technical line designed to keep ladies warm and mobile regardless of the weather. This high-performance set is constructed with breathable, waterproof laminate fabric and the garments include waterproof, snap-down zippers. Prois' signature nylon tricot lining and tailoring help optimize the range of motion. Neat thumb holes in the cuffs make it easy to layer since you can pull the outer layer over without balling up the inner one. The jacket features deep-set hand pockets and an integrated arm pocket, with both pieces covered in effective Mothwing Mountain Mimicry camouflage. They're available in sizes XS through XL and are American made.



The C2 Flex Fit System Jacket and Pant from SHE Outdoor Apparel are mid-weight pieces designed for the active bowhunter in cold weather or for mild-weather sits. The perspiration wicking outfit can be ordered with or without Scent-Lok scent control.

From the fitted, female cut to the rugged construction and features, every detail is engineered specifically for the hard-core female hunter.

As a final example of this brand's talent for design, the new Ultra Long Sleeve (MSRP \$50) and Ultra Short Sleeve (\$41) shirts blend the athletic performance of a running shirt with the concealment advantages of Realtree Max-1 or AP camouflage patterns. They're perfect worn alone during warm early seasons or as a base layer when cooler weather arrives. The shirts' lightweight, streamlined cut includes breathable, polyester birds-eye wicking fabric that is ultra soft and snag resistant. The fabric is made to keep women feeling dry, comfortable and cool.

These are only examples from 31 pieces of camouflage hunting wear included in the Prois lineup for 2012.

SHE Outdoor Apparel www.shesafari.com

Like Prois, Texas-based SHE Outdoor Apparel caters specifically to the female outdoor enthusiast with a multitude of technical garments perfect for serious female bowhunters. SHE remains one of the originals in this growing field. One such example is SHE's Expedition Tech

performance clothing, providing low-drag athletic cuts in women's hunting apparel. The Expedition Tech Pant and Hooded Pull-Over are included in the Camo Collection, designed for hunting in the most demanding and challenging settings, while still remaining form flattering. Expedition Tech Pants (MSRP \$70) feature 310 gram polyester bonded knit material that stretches and has knee darts to enhance freedom of movement. Antimicrobial properties help keep scent under control on demanding or prolonged hunts, and the material is also treated for water repellency. The double angle hip pockets, large side bellows cargo pockets and deep welt accessory pocket with zipper provide easy access to gear. A lower waist rear yoke design eliminates gapping and enhances fit. They include a 33 inch inseam which accommodates a variety of female heights.

The Expedition Tech Hooded Pull-Over (\$60) is designed to coordinate with the Pants of the same name. It is sewn from stretch material enhancing the range of motion and it includes extended cuffs and extended waistline for maximum coverage. Dual zippered underarm vents allow airflow on demand, helping to control perspiration and the scent that feeds on it.

The double entry kangaroo style hand pockets and vertical, zippered chest pockets keep gear organized. Both Pant and Hoodie are offered in sizes XS through XXL and Realtree AP camo.



ArcticShield's Women's Light Jacket and Pant include the company's Light Warmth Factor, making them perfect for damp early-season mornings or October days spent in a stand.

Another super item for bowhunting purposes includes the C2 Flex-Fit System. This is a mid-weight camouflage collection designed for rugged back country hunting, yet warm enough for mid-season treestand sessions. The C2 Flex-Fit Jacket (MSRP \$160 Scent-Lok; \$90 without) and Pant (\$150 Scent-Lok; \$85 without) are made to provide protection without bulk, wicking moisture and remaining quiet when close to game. The C2 Flex-Fit Jacket includes an athletic cut designed for the female form, with comfortable cuffed raglan sleeves and a mock turtleneck design of soft micro fleece. The textured fabric Flex-Fit integrates a two-way separating zipper down the front, with a zipper cover at the neck front. There are zippered hip pockets and zippered arm pockets with snag-free hide-a-way zipper sliders. The C2 Flex-Fit Pants, designed to complement the Jacket, also feature textured fabric. These rugged pants are equipped with back pockets and bel-lows thigh pockets, each with snag-free zipper-slider pockets. Expandable zippers at the pant hem allow pants to fit easily over boots, plus they have a hidden button at the top of the fly, "S" riveted belt loops, reinforced seat and 33 inch inseam to accommodate the tallest customer. Customers have the option of purchasing these garments with a Scent-Lok odor-eliminating liner and can choose between Realtree Max-1 or AP.

These are just examples; many other options in women's wear are also available from SHE Outdoor Apparel.

Double Duty Brands

ArcticShield by Absolute Outdoor
www.absoluteoutdoorinc.com
 ArcticShield cold-weather gear really is remarkable, because it



ArcticShield Women's Performance Fit Jacket and Bib feature the company's warmest insulating qualities, making it a perfect companion on cold rut hunts or late-season bowhunts.

includes a waterproof/breathable, multi-layered insulation membrane that traps warmth inside the garment. It returns up to 90 percent of body heat while turning away cold, all without the bulk common to heavily insulated garments. Until this year this space-age technology was available only to men, but for 2012 women will now be privy to warmth without bulk. ArcticShield Women's Performance Fit Jacket and Bib (MSRP \$220 and \$200) combine form-fitting style with uncompromising warmth in cold weather. Its

non-bulky composition allows actions like drawing a bow and climbing into a stand without restricting motion. Micro-suede shells are "bowhunting quiet" and the 280 gram quilted polyester fleece lining adds warm and comfort. The Jacket includes an adjustable and removable hood and high-collar chin cover. There are zippered chest, slash and dual interior pockets, along with an easy-access internal pocket. This garment also has zippered armpit venting, adjustable wrist cuffs and a draw cord waist. The Bibs include H-style sus-penders, a low-cut front and side flex panels. There are slash and expandable rear cargo pockets. Donning the bibs is made easier thanks to the knee-high, two-way zippered leg gussets with storm flaps and adjustable cuffs. Company Marketing Manager Mary Snyder says the entire outfit includes a softer feel and lighter accents designed specifically for women. They're offered in women's sizes XS through XL and are covered in Realtree AP camouflage.

ArcticShield Women's Light Jacket and Pants (\$135 and \$130) are

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designed with a tapered, tailored style to fit women better. These garments contain the ArcticShield Light Warmth Factor for warmer weather, and include a wind resistant and water resistant outer shell made of durable but quiet polyester fabric. The Jacket features two chest and two lower pockets for ample storage and a dovetail back to keep wind and moisture out. It also includes a safety-harness opening at the upper back. The Pant has two zippered front pockets and knee-



The Wasatch Shirt and Pant For Her include cotton/poly twill construction like the rest of the line from Browning, with pink trim and special cuts to make them more appealing to women bowhunters.

high zippered leg gussets to make taking them off and on easier, even with boots on. The rear also includes ArcticShield heat retention technology to insulate posteriors from wet stand seats or frozen ground. The Jacket's high collar includes a fleece-lined chin guard while the body has a fitted elastic back, elastic waist and cuffs. The Pants include a fleece-lined waist with belt loops, dual snaps at the closure and fleece-lined hand-warmer pockets. They're sized for women XS to XL, in Realtree AP camo.

Browning

www.browning.com

Browning has long been a leader in bowhunter-friendly camouflage clothing, and the selection now includes items for women and youth. "For Her" garments are included in the Wasatch and XPO series for 2012. These are not just men's styles sized for females but are completely redesigned cuts made to please the woman bowhunter. The Wasatch Shirt For Her (MSRP \$38) is made of 7-ounce cotton/poly

course, they are cut to fit a woman's physique and they include pink waist-line trim. Shirts and pants are sized 4 through 18 and are offered in Realtree AP or Mossy Oak Infinity camouflage patterns.

As seasons progress and temperatures dip, Browning keeps ladies covered with proven XPO Big Game Jacket and Bibs For Her (\$175 to \$184). XPO Big Game fabric with the Pre-Vent waterproof, windproof and breathable laminate is made for uncompromising protection from foul weather. Part of the package is the Thermore Insulation that helps assure women stay warm without the bulk that restricts movement. The jacket includes an adjustable hood, front wind flap, and two zippered bellows pockets plus interior security pockets. There are adjustable Lycra cuffs and quiet, direct-attach zipper pulls. Bibs include identical construction, with zippered legs, multiple pockets and adjustable shoulder straps. Both pieces are specifically cut and designed for women. They're offered in sizes S through XL and in Realtree AP and Mossy Oak Infinity camouflages patterns.



Browning's XPO Big Game wear has become a standard for bowhunting-friendly foul-weather attire, and now is offered in For Her versions designed to fit the woman's shape.



The Heater Body Suit now comes in a size Small to accommodate women and youth bowhunters looking for the ultimate in cold-weather protection. The suit traps a layer of warm air around the body, yet easily slips off the shoulders when you unzip it from the inside so you can handle your bow.

Heater Body Suit

www.heaterbodiesuit.com

If keeping a partner or child warm in chilly weather is the goal, you can do no better than The Heater Body Suit – the go-to product when weather turns brutally cold. For 2012 the company



Rivers West brings their 12-month unbreakable, 10-year waterproof guarantee to the woman's market via the Lynx Parka at left. This is a warm jacket welcomed when temperatures dip and the rain is coming down. The Lynx Vest is above, pants are at right.

has introduced redesigned suits targeted directly at women (or smaller male) bowhunters. Updates to the entire line include a waterproof membrane in the foot areas; keeping the suit from wicking moisture when seated in wet snow or ground blinds. The 2012 Heater Body Suit now sports a completely detached hood system incorporating an integral insulating neck gaiter. This provides a better fit and added comfort, plus increased side-to-side vision and less distracting noise while scanning the woods for game. More important to the subject at hand, to meet growing demand suits will now be available in a size Small for women and youth hunters. Small suits come in Mossy Oak Infinity only (MSRP \$340).

Rivers West

www.riverswest.com

Washington-based Rivers West knows something about chilly, wet weather. They have a long-standing reputation for making some of the most durable waterproof gear in hunting. The new Lynx Parka (MSRP \$189) for women continues that tradition by combining modern engineering with tried-and-true design. The Lynx Parka weighs only 2.4 pounds and comes with a diverse set of features promoting foul-weather comfort. There is a snap-off hood and four mesh-lined pockets that when open double as vents. There are two interior cargo pockets and comfort cuffs. The parka has hourglass

to XL and patterns include Realtree AP, Realtree Max-4, Mossy Oak Infinity and Mossy Oak Duck Blind.

Robinson Outdoors
www.robinsonoutdoors.com

In the past women wanting to take advantage of carbon scent-containment clothing from

the ScentBlocker family had to make do with smaller men's sizes - until the introduction of Robinson Outdoor's Sola series bowhunting attire. With Sola women get ScentBlocker Cold Fusion Activated Carbon technology wrapped inside a comprehensive, all-season assortment of goods designed specifically for the woman's physique. This hard-core bowhunting clothing was developed for women by women. The line includes S3 Isis Wool Base Layers (Merino wool), Bombshell Vest for layering, Luna XLT Jacket and Pant, Tempest Pro Fleece Jacket and Bib, Triple Threat jacket and bib

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Robinson's Sola Triple Threat Jacket and Bibs offer a three-pronged approach to bowhunting success: ScentBlocker Cold Fusion/BodyLock scent containment, 100 percent waterproof RainBlocker membrane, and stealthy DWR-treated fleece shells.



Robinson's Sola Tempest garments provide female bowhunters the ultimate ScentBlocker Cold Fusion and BodyLock scent control features. These are wrapped with bowhunting-quiet DWR treated Pro Fleece. Gloves and a hat are also sold.



wet-weather gear and various accessories such as hats and gloves.

The ScentBlocker Sola Triple Threat Jacket and Bib is the newest in the lineup. They are designed to be waterproof, windproof and breathable to keep women bowhunters dry and comfortable. The line is priced to be affordable (MSRP \$190 each) and is bowhunting friendly, since the shells are quiet and covered in Mossy Oak Infinity. They also are Tree Spider safety harness compatible, meaning you can clip a safety harness inside and simplify getting suited up for a hunt. These garments include Cold Fusion carbon fabric technology, with BodyLock garment closures at key exit points to prevent odors from escaping until the carbon can suck them away. The DWR (durable water repellency) treatment to the exterior causes water to bead up and roll off, just the first line of defense in the 100 percent waterproof/breathable RainBlocker weather protection. The Jacket includes a chest snap pocket, two lower zipper pockets, rear safety-harness slot and grommet license loop. The Bibs have adjustable shoulder straps, elastic side panels for a streamlined fit, two waist zippered

pockets and contoured knees. Both are sized S to XL.

The Sola Tempest Pro Fleece Jacket, Bib, Watch Cap and Gloves are cut for a woman's anatomy and they provide Pro Fleece warmth without bulk. They offer DWR water resistance and Cold Fusion infused carbon and BodyLock scent-containment technologies. The Tempest Jacket (\$230) is Tree Spider compatible, with an off-set zipper to eliminate bowstring interference. The Gearpendent Technology has a built-in tether to help return rangefinders, calls or compact binoculars to a protective pocket. Other neat features include a visor hood to help keep rain off the face and chemical-warmer pockets at the kidneys. The Tempest Bib (\$200) includes adjustable shoulder straps, elastic side panels and contoured knees. There is a crossover-style snap-closure torso with snap waistband and zipper fly and low-cut front. All pieces, including the matching Cap and Glove have a SPF 60 (scent protection factor) rating, the company's highest level of scent protection. They come in Mossy Oak Treestand camouflage and Jacket and Bibs are sized women's S to XL, Gloves only come XS to S.



These are but a couple examples of the innovative wares included in the overall Sola series.

Rocky Brands

www.rockyboots.com

Rocky's new Athletic Mobility line is a completely integrated head-to-toe system made to allow for the total customizing of comfort via a series of layered garments and boots. The system includes three levels; Level 1 Ultralight (breathable, scent control, quiet) for warm weather or layering; Level 2 Mid-weight (waterproof, insulated with 60 gram PrimaLoft One Insulation, breathable, scent control, quiet) for moderate weather; and Level 3 Maxprotect (waterproof, insulated with 40 to 150 gram Thinsulate Insulation, breathable, scent control and quiet) for the coldest, wettest conditions. Rocky Athletic Mobility women's apparel is represented by three



Scent-Lok

www.ScentLok.com

The 2012 Ladies Wild Heart line from the activated-carbon experts at Scent-Lok is designed to accommodate the growing cadre of lady bowhunters who might be inspired by experts like Kandi Kisky, Haley Heath and Bonnie McFerrin. Scent-Lok developed the Wild Heart series specifically for women so they can continue to show the world boys aren't the only ones who can fill a freezer. Scent-Lok's Mike Andrews says they developed Wild Heart from the ground up with women in mind. They've

Part of Rocky's new Athletic Mobility system, women's versions come in lightly-insulated "Level 2" (mid-weight) wares. These have the SIQ Atomic antimicrobial treatment and soft, quiet fleece shells, and are made to layer up and down according to weather.

cut these garments to complement a woman's shape and combined it with their revolutionary odor-absorbing technology, Carbon Alloy, to give women a scent-control edge. Andrews continues, "Carbon Alloy increases the spectrum of absorption by its ability to target specific odors, making you more effective in the field."

pieces of Level 2 Mid-weight attire made to fit women: The 1/4-Zip Shirt (MSRP \$150), Pant (\$140) or Vest (\$90) with pink accents. All pieces include Rocky SIQ Atomic antimicrobial treatment to reduce scent by killing odor-causing bacteria on contact. They have highly-efficient PrimaLoft Insulation that's super lightweight, water resistant

and highly compressible. The quiet polyester RipStop shell and lining and efficient moisture management/ wicking qualities are important features for lady bowhunters. They're available in woman's sizes S through XL, in Realtree AP and Mossy Oak Infinity camouflage patterns.

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Wild Heart garments from Scent-Lok are new for 2012.

The Wild Heart line includes a Jacket (MSRP \$140) and Pant (\$140). These Realtree AP dominated pieces are trimmed in "Bison" brown and include pink Scent-Lok/Wild Heart logos and zipper pulls. The Jacket includes a sweatshirt-style hood with inner camo for added comfort and warmth in chilly temperatures plus a tapered collar to reduce neck abrasion. There is a zippered Napoleon chest

pocket for storage, quiet tri-cot outer shell with toasty fleece lining and tapered arm with zip sleeve openings. Athletic tailoring, an extended torso and articulated elbows give lady archers unrestricted range of motion while drawing a bow or climbing into a stand. Pants include identical construction, plus a yoked lower back for added comfort. There is a cell phone pocket and angled zippered deep-well gear-storage pockets on the legs. The wrap-around leg zippers make them

easy to put on or take off while wearing boots.



Under Armour Performance Wear Dead Calm ColdGear is outerwear designed especially for women. It has the new UA Scent Control technology, super quiet shell, Sherpa fleece interior and a three-layer windproof laminate.

effective longer than activated carbon, while also proving lighter and quieter. UA Scent Control includes silver-based antimicrobials encased in patented zeolite "synthetic lava." The company says tests have shown UA Scent Control remains 99 percent effective even after 50 washings. UA Scent Control is an antimicrobial and odor filter in one, fused to fabric to be highly breathable and durable. The technology is available in 28 men's and 12 women's garments.

The Dead Calm Scent Control Jacket (MSRP \$170) and Pant (\$150) are good examples of the line, with both including UA Scent Control technology and providing three-layer, 100 percent windproof construction to prevent heat loss via cooling breezes. Jackets include super-quiet nylon face fabric and warm polyester Sherpa Fleece interiors. The 300-weight performance fleece promises warmth combined with non-binding comfort. Pants offer identical construction and performance features. Both garments include a multitude of pockets and are covered in either Realtree AP or Mossy Oak Infinity camouflage patterns.

Wood'N Trail

www.woodntrail.com

Wood'N Trail Exodry rain gear has established Wood'N Trail as a major supplier of affordable foul-weather protection, with rain gear that's 100 percent dependable and packable. The company also offers the Rain Suit Jacket and Pant in woman's sizes and cuts, featuring a polyester 230 gram Tricot fleece shell with Exodry membrane. The shell includes exterior water repellent treatment to eliminate added weight when wet as well as heat loss through evaporative action. The Jacket includes simple elastic cuffs and adjustable waistband. There are two zipper chest pockets with vent mesh linings and a full-length front zipper with storm cover and adjustable hood. The Pants include zippered legs and adjustable snap cuff, elastic waistband, two slash pockets with zipper closures and one rear pocket with zipper. All seams are sealed for assured waterproof qualities. Garments are sized for women XS to 2XL and carry the

Under Armour
www.always-deadly.com

Under Armour's Scent Control Technology is a highly unique technology that may change the face of scent containment. It's said to recharge more readily and remain

company's own Big Game camouflage pattern.

Wood'N Trail also offers a whisper-quiet, 250 gram Northland Fleece Jacket. It has two hand-warmer pockets, an adjustable elastic cord waistband, a front zipper and elastic cuffs. Like the Rain Suit detailed above it carries Big Game camo and is sized XS to 2XL.

Kid's Stuff

Browning

www.browning.com

Browning hasn't forgotten the little guys and gals in your life, offering the same Wasatch and XPO wares available to mom and dad. The Junior Wasatch Shirt and Pant are made of the same abrasion resistant 7 ounce, 55 percent cotton/45 percent poly twill fabric that is used for the adult models.

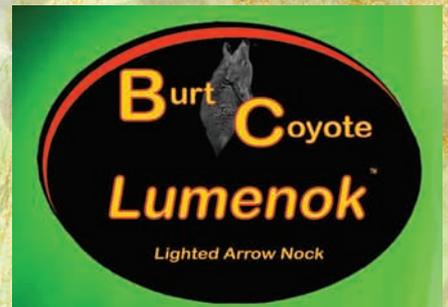
Browning's Junior Wasatch Hooded Jacket is made of rugged cotton/poly twill to stand up to hard use, and keeps young bowhunters concealed with outstanding Realtree AP or Mossy Oak Infinity camo.



The Junior Wasatch series Shirt and Pant from Browning includes rough-and-tumble cotton/poly twill construction perfect for early seasons, but made to fit smaller bowhunters.



Shirts also include button front and action back, with button-down collar and adjustable sleeve cuffs. Pants have deep front pockets and oversized cargo pockets, with drawstring cuffs and adjustable waist tab. Also included in this series is the Junior Wasatch Hooded Jacket, including the same shell material as Shirt and Pant, but backed by a brushed tricot lining in the body and smooth taffeta in the sleeves. Under that lining is 115 gram body insulation and 85 gram arm insulation. The jacket includes large front pockets, draw cord hood, rib knit cuffs



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When you want to keep your child warm and dry in hostile weather, Browning's Junior XPO Big Game Parka (shown here) and Bib are the answer, offering waterproof, windproof and breathable qualities in one outfit.

and elastic waistband. It is sized Junior S to XL. You have a choice of three patterns: Realtree AP, Mossy Oak Break-Up Infinity, plus original Break-Up. This is high-quality field wear made for comfort and offering ruggedness that is often missing from hunting wear targeted at kids.

Taking a son or daughter along for a pop-up blind deer hunt has always been complicated if the weather is cold, because with their smaller bodies kids may be shivering and ready to get out of the woods hours before you'd prefer. Browning's Junior XPO Big Game Parka and Bib (\$140 to \$149) solve the cold-weather comfort problem. They are made with the same performance

fabrics and laminates of adult models, namely quiet XPO Big Game fabric with Pre-Vent waterproof, windproof and breathable laminate and insulation for superior warmth. The Parka includes an adjustable hood, long-tail rear, and front wind flaps. There are two zippered bellows pockets and inside security pockets. The Bibs construction mirrors the Parka, but adds leg zippers and many pockets. Both are cut specifically for junior builds, offered in sizes S through XL

Sitka Gear

www.sitkagear.com

Sitka Gear brings another option to the retailer ready to stock quality youth camo wear. The all-new Scrambler Series, including Jacket (MSRP \$129) and Pant (\$89), has premium performance tailored for little bowhunters. The Scrambler Jacket's light insulation wards off chills during early-morning or late-evening forays, yet provides maximum "breathability" throughout the day. It has articulated elbows, a micro-fleece lining and chest pocket. The Scrambler Pant features micro-fleece to wick away moisture and keep

nippy temperatures at bay. The articulated soft-shell pants are made to be worn with or without layers beneath. Reinforced seat and knees and two-way stretch fabric make these pants rugged but comfortable. Both garments are finished in Gore Optifade Concealment patterns: Open Country for spot-and-stalk hunting, Forest for elevated concealment.

Also part of the youth lineup is the Youth Core Mock T (\$39) and Youth Cap (\$25). The four-way stretch Mock T is a welcome base-layer garment in cooler temperatures, or perfect worn alone on warmer days. It's designed to pull moisture away from the skin and has ATB-100 Silver encapsulated technology to help reduce odor causing bacteria. It also includes front zip and comfortable flat lock seam construction. The Cap is made from a four-way stretch, water-resistant, breathable material like the adult Ascent Series.

Wood'N Trail

Wood'N Trail's Rain Suit Jacket and Pant follow the woman's rain gear detailed above in every way, but are sized to fit youth from tag-along tikes (XXS) to youngsters big enough to hunt on their own (XL). Like the adult versions, this is rain gear that assures



Designed especially for young bowhunters, Sitka Gear's new Scrambler wear offers high-tech materials and designs found in the rest of the company's performance clothing. For instance, they have the articulated cuts that ease motion as well as reinforced knees and seat.



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your child stays completely dry in wet weather. The Youth Micro-Fleece Jacket also parallels the Woman's version, a super-quiet, warm option for early-season mornings to take the chill off. This garment is offered in Big Game camouflage and sized Junior XXS to XL.

Summary

Women still don't enjoy the variety of camo clothing choices men do, but the situation is improving rapidly. Wives, girlfriends, daughters and hardcore women bowhunters can now easily choose an outfit to keep them comfortably in the game, while also taking advantage of many of the clothing technologies men have been benefiting from for years. The youth market will always be limited by the simple fact kids are always growing, making it more difficult for a small-family parent (those without hand-me-down options) to make a big purchase sure to be too small in a matter of a season or two. But the fact remains, the modern compound bow and crossbow are making bowhunting accessible to more women and youth hunters every year, and stocking clothing for these customers is another way to keep them coming through your door. ←



During the ATA Show in Columbus, Ohio this past January, Chris Allen of Wood'NTrail showed the Youth Rain Suit Jacket.



The new Sitka Scrambler Youth Core Mock T gives young bowhunters a moisture-wicking, warm weather option. This can also be an insulating layer to be worn under the Scrambler jacket during colder weather.

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Premium Bow Evaluation Part 2

By Anthony Barnum

Continuing our yearly evaluation of many of the flagship hunting bows found in the archery marketplace, this is the second of two installments of ArrowTrade's 2012 Compound Hunting Bow Evaluation. To read the results from the previous article, please visit www.arrowtrademag.com or see your May 2012 print copy. As in the past, the focus of this event is **Hunting Style Compound Bows** that highlight the cutting edge of those products currently available in the archery marketplace. The main goal is to provide those archers who enjoy hunting with appropriate objective information, as well as some subjective commentary, for aiding in the selection process. This is done by providing relevant information regarding the performance of these bows in the following test categories:

TEST CATEGORY	ASSESSMENT
Dynamic Efficiency	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.
Speed per inch of Power Stroke	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.
Noise Output	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.
Vibration	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.

The results from Part 1 of the Premium Bow Evaluation can be found on Page 58 of ArrowTrade's May 2012 edition. For ease of comparison, the bows tested earlier are listed with this test's results on the summary to the right.

About Our Sponsors

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 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

Sponsors continues on page 94





Bow	Max Speed (fps)	Average Speed (fps)	Dynamic Efficiency (%)	Sound Output (dBA)	Vibration Output (g)
Bear Anarchy	305.2	270.6	86.0%	88.5	179.1
BowTech Insanity CPX	333.3	295.0	85.8%	88.3	289.0
C.P. Oneida Eagle Kestral	284.7	255.2	75.1%	89.1	561.3
Elite Answer	310.4	275.2	83.6%	87.2	153.7
Hoyt Vector 32	316.4	280.6	84.3%	85.6	187.9
Maitland Halo34	310.1	275.6	82.5%	86.9	310.5
Martin Bengal Pro	296.4	264.9	81.7%	87.4	293.3
Mathews Heli™	316.7	281.4	85.9%	84.9	220.8
Obsession Lethal Force	314.6	278.6	84.2%	85.6	174.4
Parker Python	302.9	269.8	81.4%	86.5	181.4
Prime Shift	315.2	280.6	83.9%	87.3	153.7
Ross Crane DRT 31.5	312.6	278.0	79.5%	86.2	195.3
Strother Wrath	301.6	267.1	84.5%	85.9	278.7

BowTech Insanity CPX

INTRODUCTION:

BowTech builds off the popularity of the Center Pivot Extreme technology to provide the Insanity CPX as their flagship offering for 2012. With this technology, the conventional limb pocket is extended back toward the center of the limb where a set of supports and pivots provide an additional contact point. This allows the highly preloaded, 7 layer laminate Hardcore Limbs to resist the torsional load induced when stored energy is transferred from the string to the cables during the draw cycle. Limb twist is further reduced through the use of the FLX Guard cable containment system, which is a flexible roller guard that deflects toward the centerline of the bow as force is applied to the cables. This movement toward a neutral position reduces the amount of torque transmitted to the riser helping to minimize a number of issues that can be encountered during the tuning process. This platform is paired with BowTech's tried and true Overdrive Binary cam system, which provides adjustability and stability that is unprecedented for slaved dual cam eccentrics. A tunable split buss cable attaches to a cam synchronizing axle on both the top and bottom eccentric, providing the adjustments necessary to counteract limb twist. The synchronizing axles also extend out past the edge of the limb providing additional rigidity and stability to both the limb and the eccentric system. This combination results in one of the fastest bows on the market, achieving advertised speeds of up to 355 fps.

OUT OF THE BOX ASSESSMENT:

The Insanity CPX sample that was provided for this evaluation was measured to have a brace-height of 5.985 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 60.8 pounds. When shot by hand with a 300 grain arrow, the Insanity CPX achieved an average speed of 335.7 fps in the out of box configuration with only a brass nock added to the string. Per request from BowTech, the limb bolts were adjusted to put the Insanity CPX into specifications.

SUBJECTIVE TEST RESULTS:

FIT & FINISH:

The fit and finish of the Insanity CPX sample provided for this evaluation was excellent, matching some of the best finishes I've seen on BowTech bows in previous evaluations. The matte black finish is smooth and provides even coverage throughout the riser including the cutout areas. The hardcore split limbs with exposed laminations are quite visually appealing and exhibited smooth edges throughout with no noticeable blemishes. The machining and anodized finish on the eccentrics and limb pockets were on par with the rest of the bow.

GRIP:

The two piece wood laminate grip introduced in 2011 is featured on the Insanity CPX. This grip is a mixture of contrasting brown and gray colors that match the visual theme of the bow quite well resulting in pleasant aesthetics. I don't know for sure if the contact area has been widened a bit, but this grip seems to fit my hand better than previous models. When subjected to intentionally induced torque, the Insanity CPX provided a high amount of resistance and quickly settled back into a consistent position once the torque was removed.

DRAW CYCLE:

The draw cycle on the Insanity CPX is stiff but quite smooth throughout, providing good transitions from the stacking to holding phase and only the slightest of hesitations before dropping into a solid back wall and deep valley. Any amount of creep at full draw does result in the string wanting to jump forward to the static position, though. On average, the Insanity CPX stores 4.11 ft-lbs. of energy for each inch that you draw it back.

SOUND & VIBRATION:

At the shot, the bow exhibits minimal jump or residual vibration. If viewed from above, the Insanity CPX does have noticeable rotation in the counterclockwise direction that then settles back to a more neutral position after the shot. If paired with the right stabilizer, this movement should be minimal. In addition, a high frequency, low amplitude vibration is felt in the handle for a very short duration after the shot. From the shooter's perspective, the sound output seemed to be about average.

BowTech Insanity CPX

Contact Info: **BowTech Archery**

www.bowtecharchery.com

MSRP:	\$999	Draw Length:	25½"-30"*
Cams:	OverDrive Binary™ Cam	Draw Weight:	50-80*
Limbs:	HardCore Limbs™	Brace Height:	6"*
Grip:	2-piece sideplate	Axle to Axle:	32"*
Let-off:	80%*	Mass Weight:	4.4 ^
String:	Octane™ Factory Strings		
Damping:	Hush Kit, String Suppressor		*Advertised
Finish:	Mossy Oak® Treestand™, Black Ops™		^Measured

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

Arrow	Speed	K.E.	Momentum
300 Grains	333.3	74.0	14.3
360 Grains	307.1	75.4	15.8
420 Grains	285.8	76.1	17.1
540 Grains	253.7	77.2	19.6

Arrow (Grains):	300	360	420	540
Dynamic Efficiency:	83.9%	85.4%	86.3%	87.5%
Speed Per Inch of PS:	15.5	14.3	13.3	11.8
Noise Output (dBA):	91.4	88.4	87.8	85.7
Total Vibration (G):	360.3	341.5	263.1	191.2



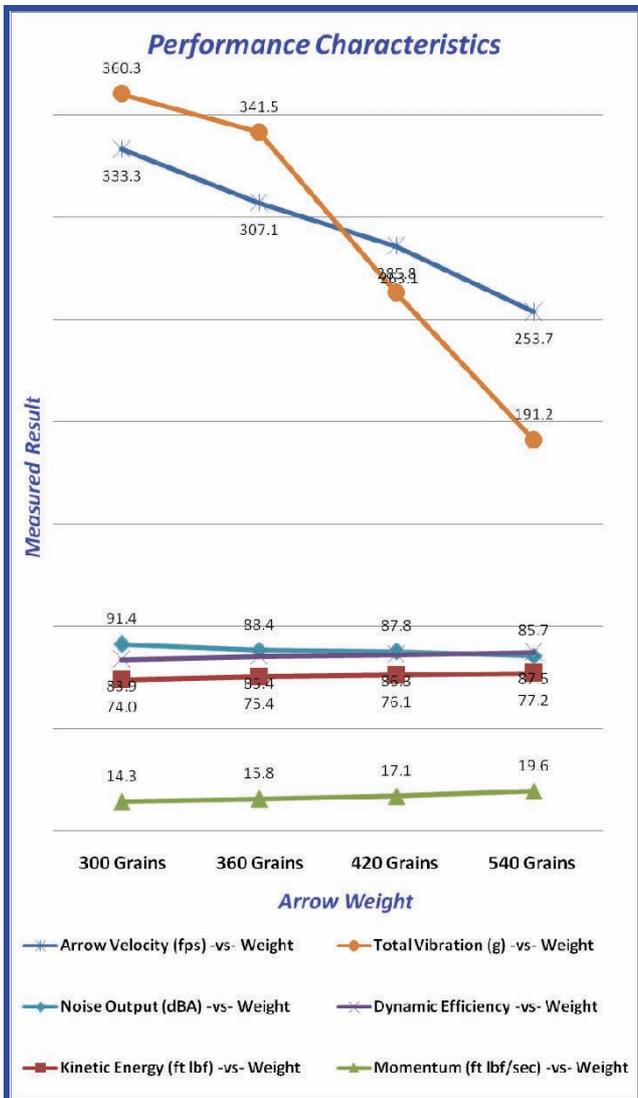
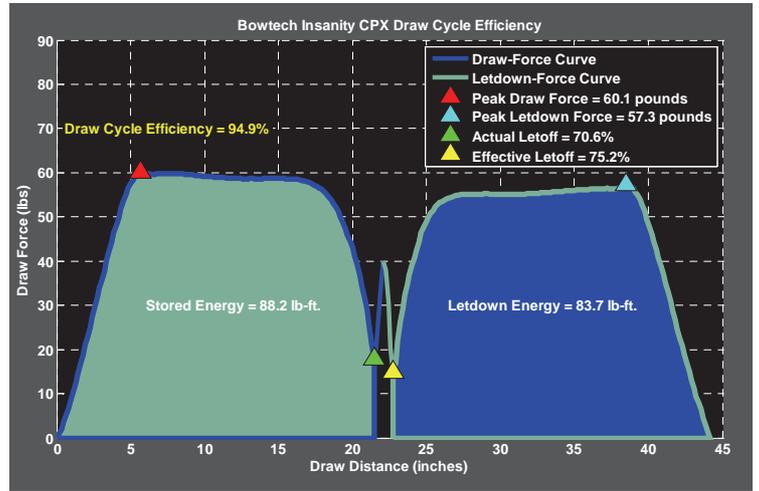
BowTech Insanity CPX

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: 85.8%
Draw Cycle Efficiency: 94.9%



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: 90.4 g
Negative X-Vibration: -116.7 g
Positive Y-Vibration: 281.1 g
Negative Y-Vibration: -223.5 g
Positive Z-Vibration: 119.7 g
Negative Z-Vibration: -93.5 g
Total Vibration: 289.0 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: 10.9%

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: 105.7 dB
A-Weighted Sound Output: 88.3 dBA
C-Weighted Sound Output: 96.6 dBC



C.P. Oneida Eagle Kestral

INTRODUCTION:

After a lengthy hiatus from my reviews, I'm pleased to include the Kestral from C.P. Oneida in my flagship reviews for 2012. My last evaluation of a C.P. Oneida bow was done on the Black Eagle II in 2006. At that time, I noted the smooth draw cycle associated with Oneida's unique limb configuration and how easy it was to tune the bow. These findings still hold true today with the Kestral. I believe this is due to the unique limb configuration that the Oneida brand has been know for since the 1980s. Each Oneida bow has two sets of limbs – a pair of power limbs and a pair of outboard limbs – that act as levers to store energy and to rotate the eccentrics. The new Draw Stop Cams found on the Kestral have a built in draw stop that was not found on previous Oneida models. Unlike most bows, these draw stop cams are attached to a specially machined area on the back of the Kestral's riser with two cams located at the top of the riser and two cams mounted near the bottom. Each eccentric pair is connected to one another using coated aircraft cables routed at both the end and at the pivot point of the outboard limbs. The top and bottom eccentrics are connected with an adjustable timing cable that allows the user to synchronize cam rotation. This configuration results in a bow that is balanced both horizontally and vertically throughout the draw cycle as the load is evenly distributed. In addition, no cable guard is required and only the string is ever likely to need to be replaced.

OUT OF THE BOX ASSESSMENT:

The Kestral sample that was provided for this evaluation was measured to have a brace-height of 6.085 inches, while the tip-to-tip length was measured to be 41-3/4 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 60.1 pounds, putting the Kestral within test specifications! When shot by hand with a 300 grain arrow, the Kestral achieved an average speed of 285.5 fps in the out of box configuration with only a brass nock added to the string.

SUBJECTIVE TEST RESULTS:

FIT & FINISH:

The finish on the Kestral provided for this evaluation was excellent, bordering on flawless! In fact, the only blemish I was able to find was on the outboard limbs where there were a couple of pin-point areas void of film dip finish. Otherwise, the film dip finish on the riser and power limbs was smooth and detailed without any noticeable blemishes. The machining and anodized finish on the aluminum limb pockets and eccentrics was also without blemish. The fit and finish on this bow was right up there with the best in the industry.

GRIP:

The walnut two-piece sideplate grip found on the Kestral has smooth contours and fits snugly in the recessed areas machined into the riser. Overall, the grip is quite a bit bigger than grips found on most bows today, but even with its girth it is quite resistant to intentionally applied torque. In fact, I really had to wrench on it to achieve any noticeable movement. The laser engraved Eagle logo found on the outside sideplate is a nice touch.

DRAW CYCLE:

As has been my experience with all of the Oneida bows that I've shot in the past, the draw cycle on the Kestral is extremely smooth throughout. The combination of the smooth nature of the Draw Stop Cams and the leverage provided by the outboard limbs makes for an easy draw cycle with excellent transitions through each phase. The valley is a bit ill-defined and the back wall is a bit soft, though, but a built in draw stop can be adjusted to address this concern. On average, the Kestral stores 3.53 ft-lbs. of energy for each inch that you draw it back.

SOUND & VIBRATION:

At the shot, the Kestral provides a noticeable bump in the hand and jumps forward a bit, but I was not able to feel any residual vibration. The bow also tends to tip back toward the shooter, but a small stabilizer should address this to make the shot feel more neutral. In conjunction with the "thump" in the hand, the Kestral seems to be quite loud from the shooter's perspective, although the sound output is short-lived.

C.P. Oneida Eagle Kestral

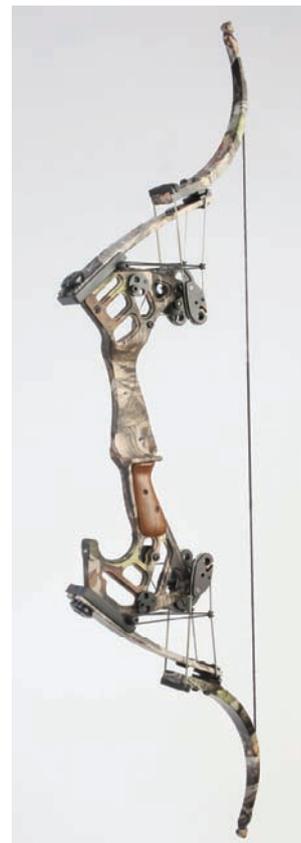
Contact Info: C.P.Oneida

www.cponeidaeagle.com

MSRP:	\$1395	Draw Length:	25"-31"*
Cams:	Draw Stop Cams	Draw Weight:	45,55,70*
Limbs:	ESC Limbs	Brace Height:	6- 7 3/8"*
Grip:	Walnut 2-piece sideplate	Tip to Tip:	43"-46"*
Let-off:	65-80%*	Mass Weight:	4.5 ^
String:	Stone Mountain 8125 / Winner's Choice 452X		
Damping:	BowJax dampening products		*Advertised
Finish:	Next G-1 Camo, Flat Black		^Measured

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

Arrow	Speed	K.E.	Momentum	
300 Grains	284.7	54.0	12.2	
360 Grains	264.8	56.0	13.6	
420 Grains	248.2	57.4	14.9	
540 Grains	223.1	59.7	17.2	
Arrow (Grains):	300	360	420	540
Dynamic Efficiency:	71.4%	74.1%	76.0%	79.0%
Speed Per Inch of PS:	13.3	12.4	11.6	10.4
Noise Output (dBA):	92.0	90.7	88.2	85.6
Total Vibration (G):	637.5	607.0	553.5	447.2



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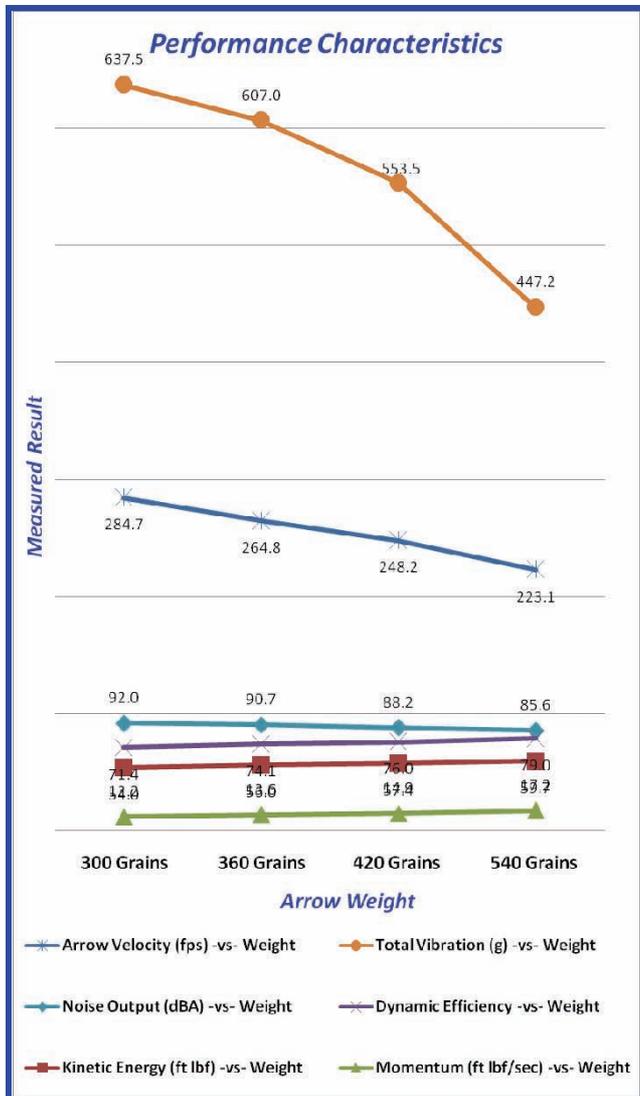
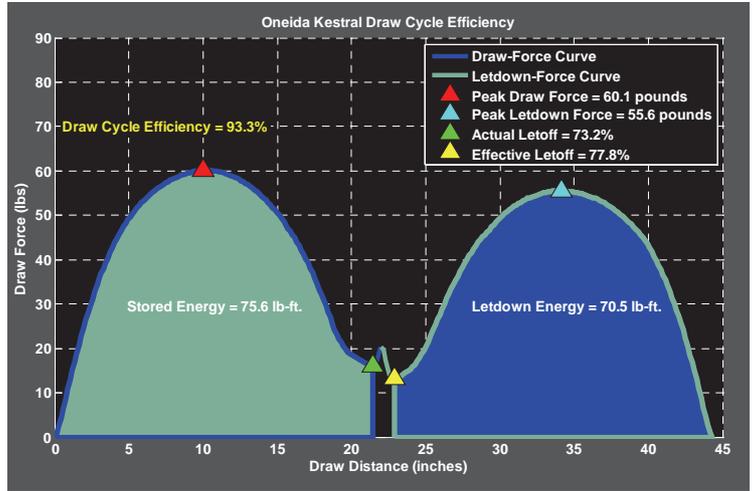
C.P. Oneida Eagle Kestral

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: 11.9
Dynamic Efficiency: 75.1%
Draw Cycle Efficiency: 93.3%



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: 203.7 g
Negative X-Vibration: -229.4 g

Positive Y-Vibration: 409.5 g
Negative Y-Vibration: -496.8 g

Positive Z-Vibration: 465.4 g
Negative Z-Vibration: -413.6 g

Total Vibration: 561.3 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: 107.7 dB

A-Weighted Sound Output: 89.1 dBA

C-Weighted Sound Output: 98.3 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: 0.8%



Maitland Halo34

INTRODUCTION:

Maitland Archery offers the Halo34 as their flagship offering for 2012. The long riser design incorporated on the Halo34 was first introduced by Maitland in 2009 and provides the stability necessary for consistency from shot to shot. This technology is combined with an extended limb harness system that is made up of a draw weight adjustment block and limb support assembly that makes contact approximately 5 inches from the front of split limbs from Gordon Composites. An axle hole is machined through the weight adjustment block in an offset manner, allowing the bow to be adjusted for an additional 3/4 inch in brace height by reversing the block. The bridged structure machined into the end of the riser supports these components while providing the rigidity necessary to minimize riser flex. The Techflex Performance Limbs are paired with a hybrid eccentric system dubbed the Aggressor Cam that includes a limb contact draw stop to provide a solid, and adjustable, back wall. Modular draw length adjustability without the need for a bow press makes the Halo34 easy to fit the shooter. Finally, the Halo34's 1/4 inch aluminum string suppressor rod is built to flex to the desired position, providing tool-less adjustment that reduces overall mass-weight and the number of moving parts. In my opinion, this bow is an excellent offering and coming from a company in the third year of production makes it that much more impressive.

OUT OF THE BOX ASSESSMENT:

The Halo34 sample that was provided for this evaluation was measured to have a brace height of 7.025 inches, while the axle-to-axle length was measured to be 33-1/4 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 62.4 pounds. When shot by hand with a 300 grain arrow, the Halo34 achieved an average speed of 314.8 fps in the out of box configuration with only a brass nock added to the string. Per request from Maitland, the limb bolts were adjusted to bring the Halo34 into specification.

SUBJECTIVE TEST RESULTS:

FIT & FINISH:

The finish on Halo34 provided for this evaluation ranks up there with some of the best finishes in the industry. Other than two bumps in the film dip finish on the back of the riser and some machining marks on the eccentrics, I was not able to find any blemishes on the Halo34. The film dip finish provided excellent coverage of the limbs and the interior portion of the riser cutouts and the black anodized finish on the limb supports and eccentrics was without blemish.

GRIP:

Maitland provides the Narrow Throat Grip standard on each of their offerings, including the Halo34. This grip is machined directly into the riser and no additional sideplates or other grip material are included. The contours are smooth and comfortable and the grip is thin enough to minimize archer induced torque while being wide enough to provide a comfortable contact area for the hand. My attempts to intentionally induce torque on the Halo34 were met with excellent resistance.

DRAW CYCLE:

The draw cycle on the Halo34 is smooth and consistent throughout with excellent transitions from one phase to the next, especially into let-off where there isn't even a hint of the dreaded "hump". Once in the valley, the back wall is extremely solid and the bow balances quite well even without using a stabilizer. When letting down, the eccentrics don't have a sudden increase in holding weight making the Halo34 quite easy to get back to the brace position. On average, the Halo34 stores 3.91 ft-lbs. of energy for each inch that you draw it back.

SOUND & VIBRATION:

At the shot a minor "thump" is felt in the grip hand and the bottom of the bow then wants to kick forward slightly, toward the target. If viewed from above, the riser also tends to rotate in a counter-clockwise fashion. After the shot, there is a short lived, low amplitude, high frequency vibration felt in the riser. From the shooter's perspective, the Halo34 seems to be a bit on the high side of average for sound output.

Maitland Halo34

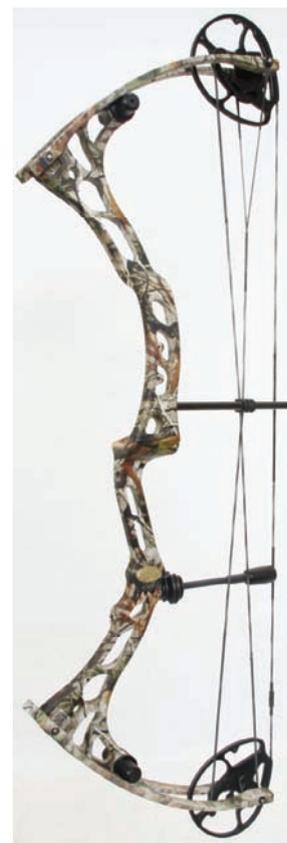
Contact Info: Maitland USA

www.maitlandusa.com

MSRP:	\$799	Draw Length:	27"-31 3/4" *
Cams:	Aggressor Cams	Draw Weight:	50-70*
Limbs:	Techflex Performance	Brace Height:	7" *
Grip:	Narrow Throat Grip	Axle to Axle:	33 3/8" *
Let-off:	75%*	Mass Weight:	4.4 ^
String:	BCY 452X / Halo Serving		
Damping:	String Leeches, String Suppressor		*Advertised
Finish:	Next G-1 Camo		^Measured

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

Arrow	Speed	K.E.	Momentum	
300 Grains	310.1	64.1	13.3	
360 Grains	286.4	65.5	14.7	
420 Grains	267.4	66.7	16.0	
540 Grains	238.4	68.1	18.4	
Arrow (Grains):	300	360	420	540
Dynamic Efficiency:	80.0%	81.8%	83.2%	85.1%
Speed Per Inch of PS:	15.1	14.0	13.1	11.6
Noise Output (dBA):	90.6	87.1	85.6	84.3
Total Vibration (G):	338.4	332.2	319.5	279.6



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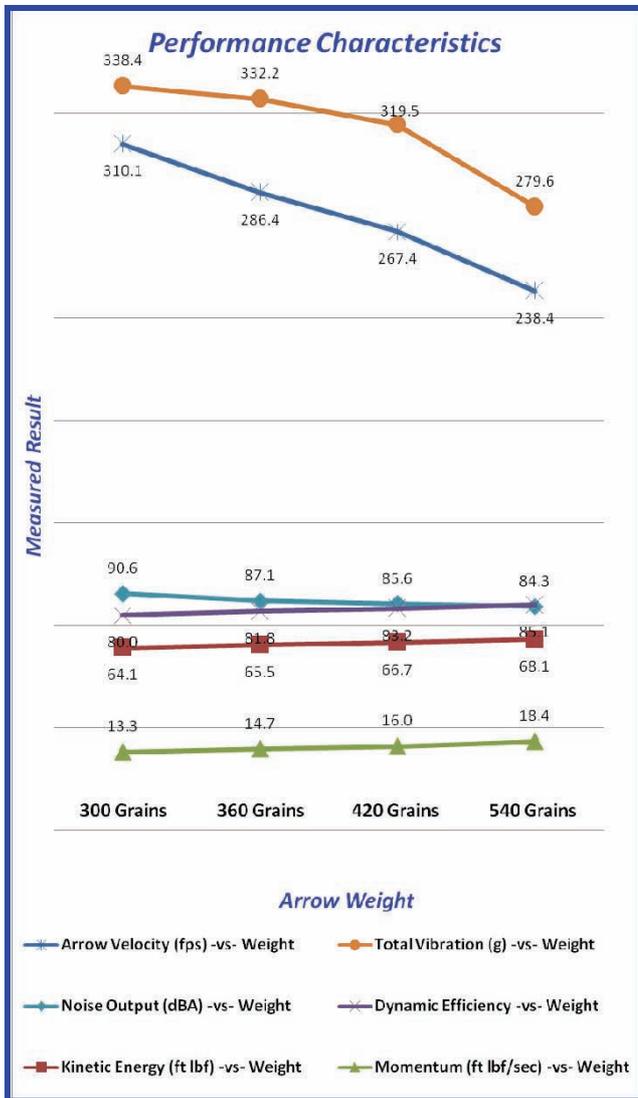
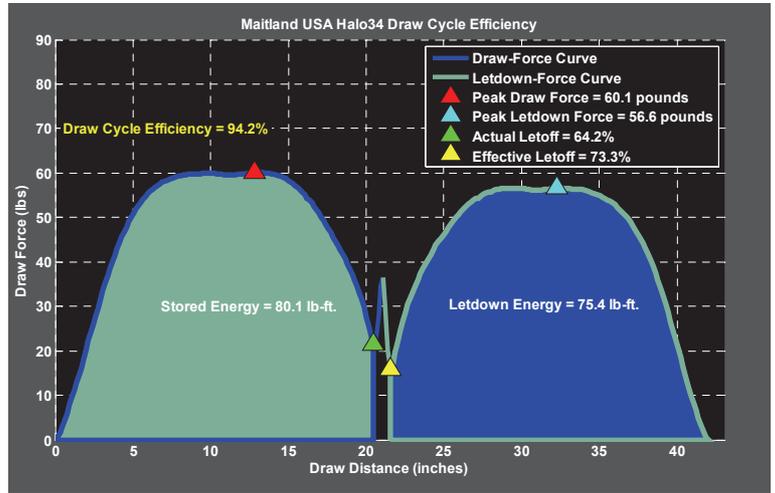
Maitland Halo34

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: 82.5%
Draw Cycle Efficiency: 94.2%



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: 112.8 g
Negative X-Vibration: -117.0 g
Positive Y-Vibration: 287.0 g
Negative Y-Vibration: -273.3 g
Positive Z-Vibration: 136.6 g
Negative Z-Vibration: -149.0 g
Total Vibration: 310.5 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: 25.5%

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: 102.4 dB
A-Weighted Sound Output: 86.7 dBA
C-Weighted Sound Output: 95.1 dBC



Martin Bengal Pro

INTRODUCTION:

Martin Archery offers the Bengal Pro as their flagship model for 2012. Maintaining the single cam platform that the Bengal has been equipped with since it was first introduced, the all new Fury XT eccentric takes performance and adjustability to a new level. With an advertised IBO speed of up to 330 fps, the Bengal Pro is no slouch in the speed department. The 20 pounds of draw weight adjustment that is built into the Fury XT cam combined with rotating modules spanning draw lengths between 24 and 30-1/2 inches allows the Bengal Pro to be adjusted to fit the majority of shooters. The eccentrics are paired with Martin's PowerTough limbs to provide the powerplant for the Bengal Pro. These limbs are anchored to the riser using Roto-Cup limb pockets and a limb-bolt / barrel nut combination that provides an additional 15 pounds in draw weight adjustment. Combining the Fury XT single cam system's 20 pounds of draw-weight adjustment with the 15 pounds of draw weight adjustment built into the limb system on each Martin bow, a 60 pound peak draw weight Bengal Pro could go all the way down to a draw weight of 25 pounds. I can't recall any flagship bows in recent history that provide that amount of adjustability.

OUT OF THE BOX ASSESSMENT:

The Bengal Pro sample that was provided for this evaluation was measured to have a brace-height of 6.990 inches, while the axle-to-axle length was measured to be 30-7/8 inches. The requested 29 inch, 60 pound model was measured straight out of the box to have a 29-5/8 inch draw length and peak draw weight of 61.7 pounds. When shot by hand with a 300 grain arrow, the Bengal Pro achieved an average speed of 305.3 fps in the out of box configuration with only a brass nock added to the string. Per request from Martin, several twists were added to the string and the limb bolts were adjusted to bring the Bengal Pro into specification.

SUBJECTIVE TEST RESULTS:

FIT & FINISH:

The finish on the Bengal Pro provided for this evaluation was quite good and certainly on-par with what I've come to expect from Martin. The finish on the limbs was excellent and the machining on the eccentrics and Roto Cup limb pockets was flawless, with tight tolerances throughout. The riser had one small pin-point area void of film-dip finish near one of the substantial riser cutouts, but was excellent otherwise. The green and black HammerHead string and cables complemented the Next G1 camo quite well and exhibited no serving separation or fraying.

GRIP:

Martin provides the Saddleback Thermal Grip standard on the Bengal Pro. This grip utilizes the contours machined into the riser handle as the contact point for the shooters hand, covering the area with leather to provide a non-slip thermal barrier. A recess is designed into the riser on the outside of the bow to provide a comfortable position for the user's thumb. The slim feel to the grip is quite comfortable but it did seem to be a bit susceptible to my intentionally applied torque. However, the Bengal Pro did settle back into a consistent location after the torque was removed.

DRAW CYCLE:

The draw cycle on the Bengal Pro starts out quite smooth with a gradual increase in draw-weight to the holding phase of the draw cycle. About 1/3 of the way through, the cycle stiffens up a bit and some extra effort is required to transition into let-off, causing a rather abrupt drop into the valley. Once into the short, but adjustable valley, the back wall is extremely solid. The Bengal Pro does keep you honest, though, as it wants to pull the string back to brace with even the slightest creep. On average, the Bengal Pro stores 3.65 ft-lbs. of energy for each inch that you draw it back.

SOUND & VIBRATION:

There is a noticeable jump at the shot when firing the Bengal Pro, with the bottom of the bow kicking forward toward the target. Also, short-lived vibration is evident after the shot but the carbon SOS String Suppressor and Vortex Vibration Emitting Modules do a good job of quickly dissipating the residual energy. From the shooter's perspective, the Bengal Pro seems to be a bit on the high side of average for sound output.

Martin Bengal Pro

Contact Info: Martin Archery

www.martinarchery.com

MSRP:	\$449.99	Draw Length:	24"-30½"*
Cams:	Fury XT Single Cam	Draw Weight:	50-70*
Limbs:	PowerTough Limbs	Brace Height:	7"*
Grip:	Saddleback Thermal Grip	Axle to Axle:	31"*
Let-off:	80%*	Mass Weight:	4.4 ^
String:	HammerHead Bowstrings		
Damping:	SOS, VEM, Silent Hunter Arrow Shelf		*Advertised
Finish:	Next G-1 Camo		^Measured

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

Arrow	Speed	K.E.	Momentum
300 Grains	296.4	58.5	12.7
360 Grains	275.3	60.6	14.2
420 Grains	257.5	61.8	15.5
540 Grains	230.1	63.5	17.8

Arrow (Grains):	300	360	420	540
Dynamic Efficiency:	78.2%	81.0%	82.7%	84.9%
Speed Per Inch of PS:	14.5	13.4	12.6	11.2
Noise Output (dBA):	90.4	87.5	86.9	84.7
Total Vibration (G):	355.0	303.9	267.8	246.4



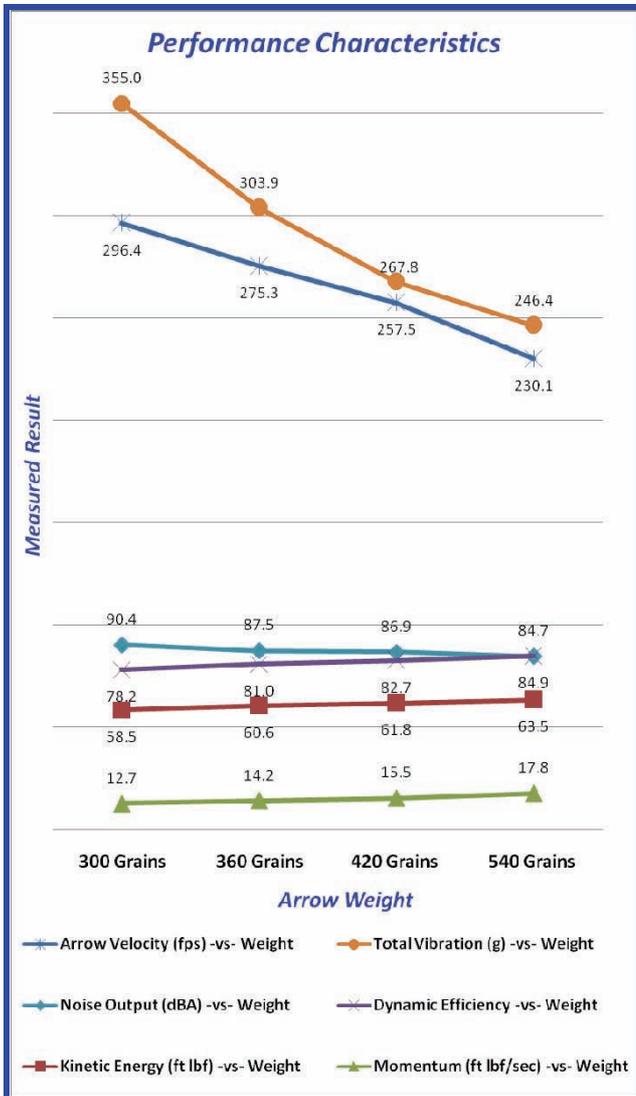
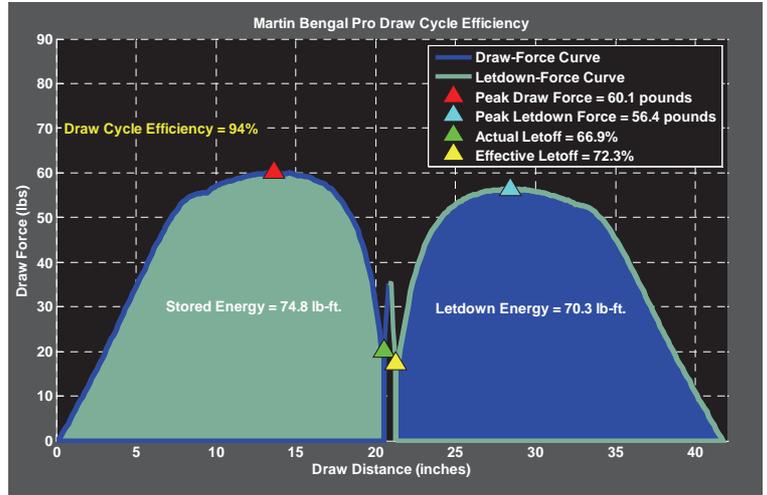
Martin Bengal Pro

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: 81.7%
Draw Cycle Efficiency: 94.0%



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: 134.9 g
Negative X-Vibration: -115.6 g
Positive Y-Vibration: 216.8 g
Negative Y-Vibration: -232.2 g
Positive Z-Vibration: 172.0 g
Negative Z-Vibration: -219.5 g
Total Vibration: 293.3 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: 102.9 dB
A-Weighted Sound Output: 87.4 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 peak A-weighted Sound Output when measured with a 360 grain arrow.

B-Stinger Reduction: 2.3%



Obsession Lethal Force

INTRODUCTION:

While at the ATA show, I was fortunate enough to have the opportunity to shoot the lineups for each bow manufacturer in attendance, including both well established companies as well as newcomers to the industry. One of the new manufacturers on the scene was Obsession Bows, who are only in the second year of production. After shooting these bows, I was truly excited by what the Obsession had to offer and I was convinced that they would be a great addition to these evaluations. As such, I am pleased to include the Lethal Force, which is Obsession Bows' flagship model for 2012 and is advertised as the fastest 7 inch brace height bow on the market! At the heart of this speed is the Lethal Cam which is a slaved two track dual cam system that offers modular draw length adjustability and Dead Stop dual draw stops to fine tune both draw length and let-off. Energy is transferred from the eccentrics to a split limb system that is securely attached to the riser using a one piece aluminum pivoting limb pocket. Finally, draw cycle induced riser torque is reduced through the use of an aluminum cable rod that is uniquely shaped to allow the cable slide to travel toward the centerline of the bow as it is brought to full draw. If performance and quality are any indicator of longevity in the industry, Obsession Bows will be around for quite some time.

OUT OF THE BOX ASSESSMENT:

The Lethal Force sample that was provided for this evaluation was measured to have a brace-height of 6.955 inches, while the axle-to-axle length was measured to be 33-3/8 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 60.3 pounds. When shot by hand with a 300 grain arrow, the Lethal Force achieved an average speed of 316.1 fps in the out of box configuration with only a brass nock added to the string. Per request from Obsession, the limb bolts were adjusted to bring the Lethal Force into draw-weight specifications.

SUBJECTIVE TEST RESULTS:

FIT & FINISH:

The finish on the Lethal Force provided for this evaluation was quite good and I would consider it to be above average. The black riser exhibited excellent coverage throughout, including the substantial cut-out areas, with only one blemish noted just below the string suppressor. The split limbs fit tightly in the machined aluminum limb pockets and were smooth and rounded throughout. Some striations were noted in the finish of the top limbs, but this is only a cosmetic issue and does not impact performance of the bow. Finally, some machining marks were noted in the eccentrics, but the anodized finish was without blemish.

GRIP:

The Lethal Force provides a two piece side plate grip with the contact area machined right into the riser. This area is quite slim, resisting torque induced by the shooter while maintaining enough surface area to be comfortable in my hand. I noted during my inspection that the front-to-back dimension of the grip seems to be a bit larger than what is found on most bows, but when shooting with an open grip this does not seem to be an issue and almost unnoticeable.

DRAW CYCLE:

The draw cycle on the Lethal Force is smooth throughout the majority of the cycle, but there is a sudden drop into the valley that, when combined with what seems like an immense amount of let-off, results in the bow wanting to jump on you a bit when attempting to let down. Otherwise, the valley is quite deep and the back wall is extremely solid, due at least in part to dual limb contact draw stops. On average, the Lethal Force stores 3.93 ft-lbs. of energy for each inch that you draw it back.

SOUND & VIBRATION:

At the shot, the Lethal Force wanted to twist counter-clockwise (if viewed from above) in my hand just a bit and the bottom of the bow tended to kick forward ever so slightly. Overall, there was almost no noticeable "bump" and the residual vibration was non-existent. In addition, the Lethal Force seems to be very quiet from the shooter's perspective.

Obsession Lethal Force

Contact Info: Obsession Bows

www.obsessionbows.com

MSRP:	\$869	Draw Length:	23"-30" *
Cams:	Lethal Cam	Draw Weight:	50-70*
Limbs:	Composite Split Limb	Brace Height:	7" *
Grip:	Torque free side-plate	Axle to Axle:	33" *
Let-off:	80%*	Mass Weight:	4.6 ^
String:	Proline Bowstrings		
Damping:	Sims dampening products, string suppressor		* Advertised
Finish:	Predator Deception, Black		^ Measured

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

Arrow	Speed	K.E.	Momentum	
300 Grains	314.6	65.9	13.5	
360 Grains	290.2	67.3	14.9	
420 Grains	270.0	68.0	16.2	
540 Grains	239.8	68.9	18.5	
Arrow (Grains):	300	360	420	540
Dynamic Efficiency:	82.2%	83.9%	84.7%	85.9%
Speed Per Inch of PS:	15.4	14.2	13.2	11.7
Noise Output (dBA):	90.7	84.3	84.0	83.4
Total Vibration (G):	226.2	166.1	161.6	143.8



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Obsession Lethal Force

OBJECTIVE TEST RESULTS:

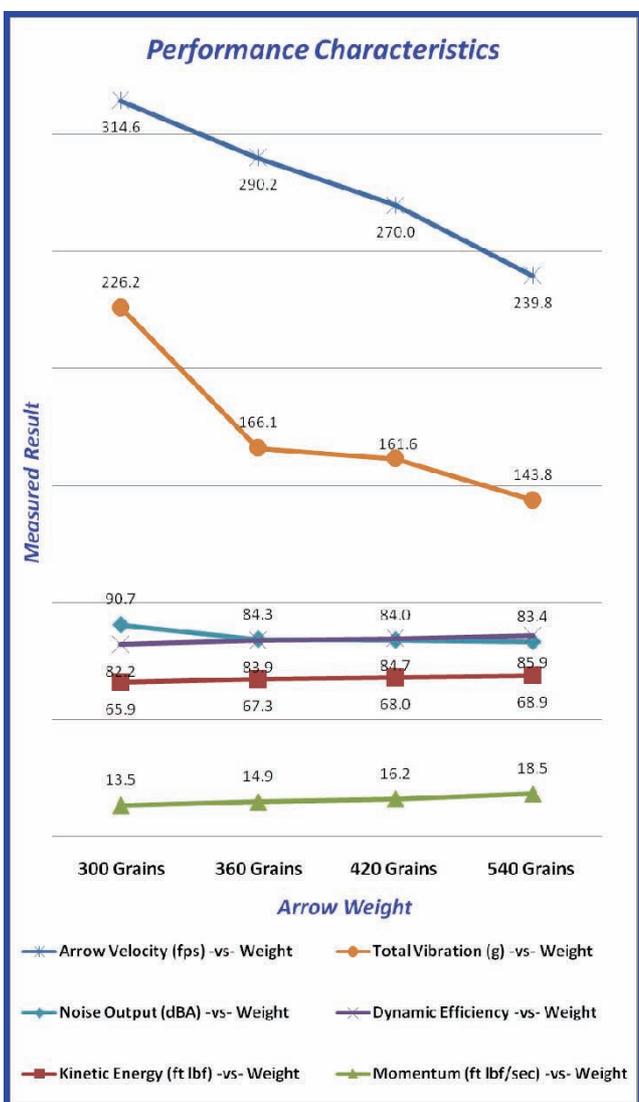
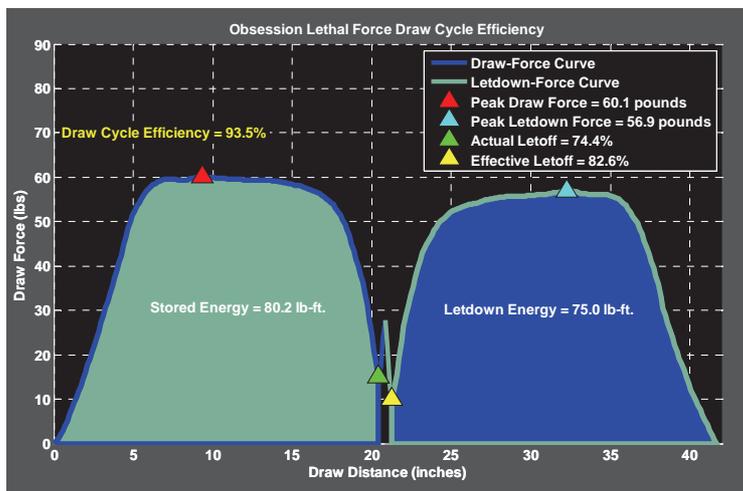
SPEED / PERFORMANCE MEASUREMENTS:

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: 13.6

Dynamic Efficiency: 84.2%

Draw Cycle Efficiency: 93.5%



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: 87.2 g

Negative X-Vibration: -78.7 g

Positive Y-Vibration: 139.3 g

Negative Y-Vibration: -136.4 g

Positive Z-Vibration: 81.3 g

Negative Z-Vibration: -99.1 g

Total Vibration: 174.4 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: 8.6%

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: 102.1 dB

A-Weighted Sound Output: 85.6 dBA

C-Weighted Sound Output: 93.7 dBC



Ross Crave DRT 31.5

INTRODUCTION:

Ross Archery offers their flagship model, the Crave DRT, in two configurations – one with a 31-1/2 inch axle-to-axle length and the other with a 33-1/2 inch axle-to-axle length. Following the trends in the archery industry, the shorter Crave DRT 31.5 was provided for this evaluation and is the focus of this review. The Crave DRT is built on a lightweight, fully machined skeletal riser that includes a large number of cutouts, helping the bow achieve an advertised weight of just 3.8 pounds. Built into this riser is Ross' Slim Line grip, which helps reduce the tendency of the archer to induce torque on the riser by minimizing the area that contacts the shooter's hand. Dual pivoting limb pockets firmly harness the composite solid limbs to the riser. These limbs are paired with the Dual Sync cam system that rotates on precision sealed ball bearings. Like most other two track slaved dual cam systems, the Dual Sync cam provides modular draw length adjustability in 1/2 inch increments but a bow press is required to change these modules. New for 2012 is the inclusion of dual limb engaging draw stops that provide both a solid back wall and the ability to fine tune both draw length and let-off. Sims dampening accessories are used throughout to reduce felt vibration/recoil and can be found on the limbs, string and draw stop. In addition, new DRT riser dampeners are provided to reduce the amount of vibration that travels from the limbs toward the grip area of the bow.

OUT OF THE BOX ASSESSMENT:

The Crave DRT 31.5 sample that was provided for this evaluation was measured to have a brace height of 6.345 inches, while the axle-to-axle length was measured to be 31-3/8 inches. The requested 29 inch, 60 pound model was measured straight out of the box to have a 29-3/4 inch draw length and peak draw-weight of 59.1 pounds. When shot by hand with a 300 grain arrow, the Crave DRT 31.5 achieved an average speed of 316.0 fps in the out of box configuration. Per request from Ross, a new set of modules were installed and a slight adjustment was made to the limb bolts to bring the Crave DRT 31.5 into draw length specification.

SUBJECTIVE TEST RESULTS:

FIT & FINISH:

The fit and finish of the Crave DRT 31.5 sample provided for this evaluation was good overall. The film dip finish on the limbs was highly detailed and no distortion was evident. The limbs also fit very tightly into the black anodized pivoting aluminum limb pocket, which exhibited excellent machining anodizing. The finish on the eccentrics was excellent, as well, but some machining marks were noticed on the draw-length modules. Finally, small blemishes were noted on the interior portion of the riser cutouts just above the sight window and some stretching of the RealTree AP film dip was also evident.

GRIP:

A two piece side-plate grip with carbon fiber finish is included as standard equipment on the Crave DRT 31.5. 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 to provide a seamless transition to the contact area. My attempts to intentionally torque the bow were met with excellent resistance.

DRAW CYCLE:

The draw cycle starts out smooth and continues that way for most of the draw. About 2/3 of the way in, the cycle stiffens up and it takes quite a bit of extra effort to get the cams to roll over. This additional effort causes the drop into the valley to be rather abrupt, ending in a nice, comfortable valley with a very hard back wall. On average, the Crave DRT 31.5 stores 4.0 ft-lbs. of energy for each inch that you draw it back.

SOUND & VIBRATION:

At the shot, the Crave DRT 31.5 provides a moderate bump to the hand and jumps forward just a bit. Also, there's a low amplitude residual vibration that is felt in the riser for a lengthy duration after the shot. I believe both of these items could be tamed quite easily if the bow were paired with the right stabilizer. Finally, sound output seems to be below average from the shooter's perspective.

Ross Crave DRT 31.5

Contact Info: Ross Archery

www.rossarchery.com

MSRP:	\$749.99	Draw Length:	26"-30" *
Cams:	Dual Sync	Draw Weight:	50-70*
Limbs:	Composite solid limb	Brace Height:	6 1/2" *
Grip:	2-Piece Slim Line	Axle to Axle:	31 1/2" *
Let-off:	80%*	Mass Weight:	4.3 ^
String:	Winner's Choice String & Cable		
Damping:	String Suppressor, DRT Riser Dampeners		
Finish:	Realtree AP, Stealth Black		

* Advertised
^ Measured

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

Arrow	Speed	K.E.	Momentum
300 Grains	312.6	65.1	13.4
360 Grains	288.9	66.7	14.9
420 Grains	269.9	67.9	16.2
540 Grains	240.7	69.4	18.6

Arrow (Grains):	300	360	420	540
Dynamic Efficiency:	76.9%	78.8%	80.3%	82.1%
Speed Per Inch of PS:	14.8	13.7	12.8	11.4
Noise Output (dBA):	89.0	86.0	85.9	84.0
Total Vibration (G):	243.4	212.1	169.9	155.9



Ross Crave DRT 31.5

OBJECTIVE TEST RESULTS:

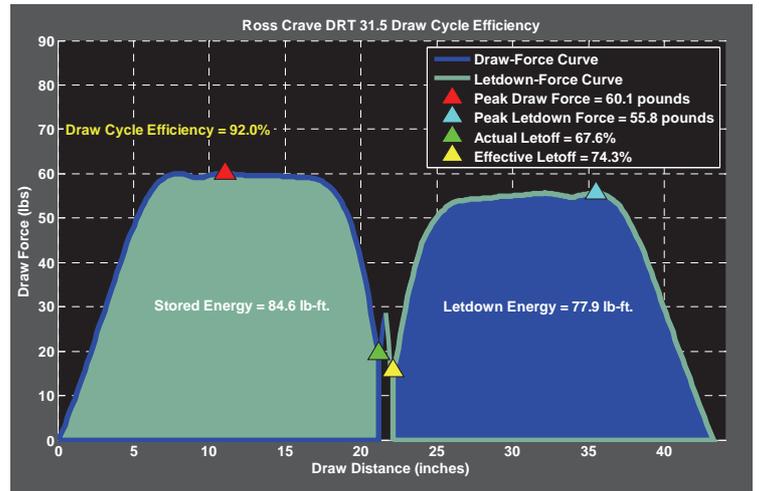
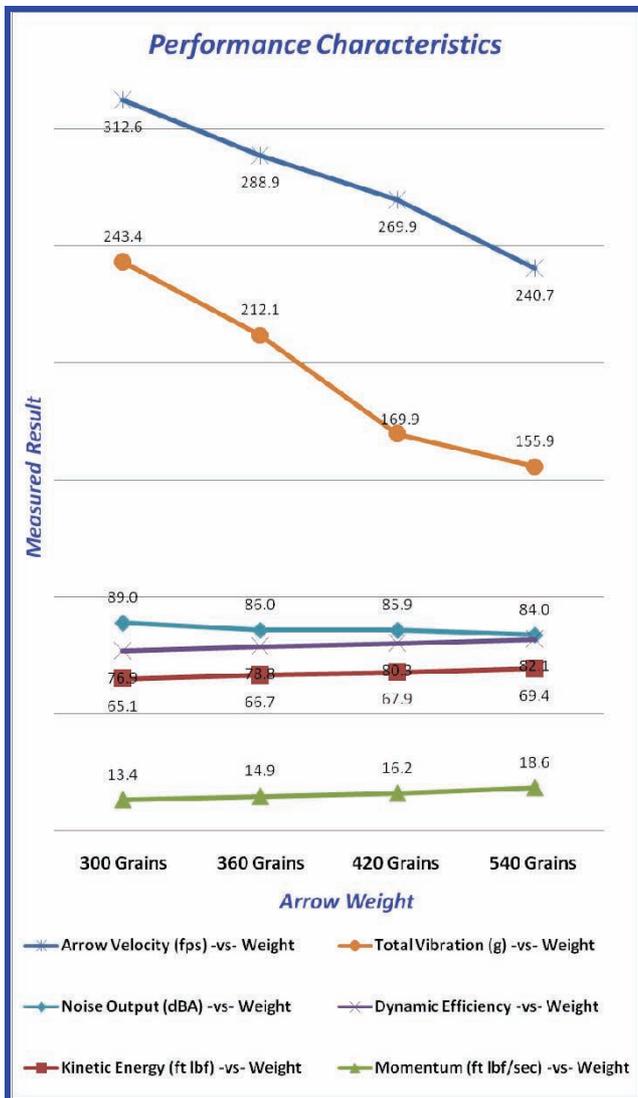
SPEED / PERFORMANCE MEASUREMENTS:

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: 79.5%

Draw Cycle Efficiency: 92.0%



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: 56.5 g

Negative X-Vibration: -60.6 g

Positive Y-Vibration: 181.9 g

Negative Y-Vibration: -172.7 g

Positive Z-Vibration: 106.9 g

Negative Z-Vibration: -112.3g

Total Vibration: 195.3 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: 3.0%

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: 103.5 dB

A-Weighted Sound Output: 86.2 dBA

C-Weighted Sound Output: 95.1 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: 0.3%

Strother Wrath

INTRODUCTION:

Strother Archery continues to keep their foot on the accelerator in the development of high performance compound bows with the introduction of the Wrath, which is their flagship model for 2012. At the heart of the Wrath is the new slaved dual cam system called the Badger cam. This new cam system offers modular draw length adjustment in 1/2 inch increments, but a bow press is required to change the modules. Numbered laser etched let-off indicators (selectable between 70 percent and 80 percent) are provided making it easy to select the desired let-off corresponding to the module that you have installed. In addition, dual adjustable draw stops allow the archer to fine-tune both draw length and let-off while providing an extremely solid back wall. The eccentrics are paired with PLT Split Limbs to store the energy needed to produce speeds up to 330 fps, which is quite impressive considering the Wrath's 8 inch brace height. Also new for 2012 is the Super Glide cable slide, which is a simple but unique approach to reducing the amount of torque transmitted to the riser during the draw cycle. This solution provides a pair of tapering grooves that work with the natural tendency of the cables to pull toward the centerline of the bow to help reduce the lateral load on the cables. One advantage to this approach is that there are no moving parts, which should increase reliability and minimize failure in the field.

OUT OF THE BOX ASSESSMENT:

The Wrath sample that was provided for this evaluation was measured to have a brace height of 8.155 inches, while the axle-to-axle length was measured to be 32-1/16 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 62.7 pounds. When shot by hand with a 300 grain arrow, the Wrath achieved an average speed of 307.4 fps in the out of box configuration with only a brass nock added to the string. Per request from Strother, the limb bolts were adjusted to bring the draw weight into specification.

SUBJECTIVE TEST RESULTS:

FIT & FINISH:

As was the case for Strother bows I've evaluated in the past, the fit and finish on the Wrath sample provided for this evaluation was excellent. It appears as though Strother has continued to push the envelope for the quality of their fit and finish. The only imperfections I was able to find were on the interior portion of the string loop cutouts on the Badger Cam eccentrics. Otherwise, the RealTree AP riser was crisp and detailed while black limbs and limb pockets exhibited tight tolerances. The rest of the machined parts were also without blemish.

GRIP:

The Wrath utilizes the same two piece side plate grip as found on past flagship models from Strother Archery, and exemplifies the craftsmanship that is found throughout the bow. The tolerances on the grip are excellent and the side plates are both well contoured and aesthetically pleasing. The contact point of the grip has smooth, rounded edges that fit nicely in my hand and seems to be quite resistant to intentionally applied torque.

DRAW CYCLE:

With an advertised brace height of 8 inches, the Wrath has to store a lot of energy over a relatively short distance to reach its advertised speeds of up to 330 fps at a 70 pound setting. As such, the draw starts out smooth but stiff for the first half of the draw cycle, but has a smooth transition into let-off without the dreaded "hump" that many bows exhibit before settling into the valley. Once in the valley, though, the back wall is extremely solid due at least in part to dual draw stops that contact the limbs. On average, the Wrath stores 3.84 ft-lbs. of energy for each inch that you draw it back.

SOUND & VIBRATION:

At the shot, the Wrath wants to twist counterclockwise (when viewed from above) ever so slightly and the top tends to tip back toward the archer just a bit. There is only minimal jump or "hand shock" and residual vibration is felt for only a very short duration after the shot. To my ear, the Wrath seemed to be below average for sound output.

Strother Wrath

Contact Info: Strother Archery

www.strotherarchery.com

MSRP:	\$839	Draw Length:	27"-31½" *
Cams:	Badger Cam	Draw Weight:	40-80*
Limbs:	PLT Split Limb	Brace Height:	8" *
Grip:	Torqueless 2-piece	Axle to Axle:	32" *
Let-off:	80%*	Mass Weight:	4.0 ^
String:	Crackers string & cables		
Damping:	No-Glove Oscillation Reducer		*Advertised
Finish:	Realtree AP, Predator Deception, Black Death		^Measured

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

Arrow	Speed	K.E.	Momentum	
300 Grains	301.6	60.6	12.9	
360 Grains	277.7	61.7	14.3	
420 Grains	258.8	62.5	15.5	
540 Grains	230.2	63.5	17.8	
Arrow (Grains):	300	360	420	540
Dynamic Efficiency:	82.6%	84.0%	85.1%	86.5%
Speed Per Inch of PS:	15.8	14.5	13.6	12.1
Noise Output (dBA):	88.1	86.7	86.1	82.8
Total Vibration (G):	342.4	296.0	263.6	212.9



Strother Wrath

OBJECTIVE TEST RESULTS:

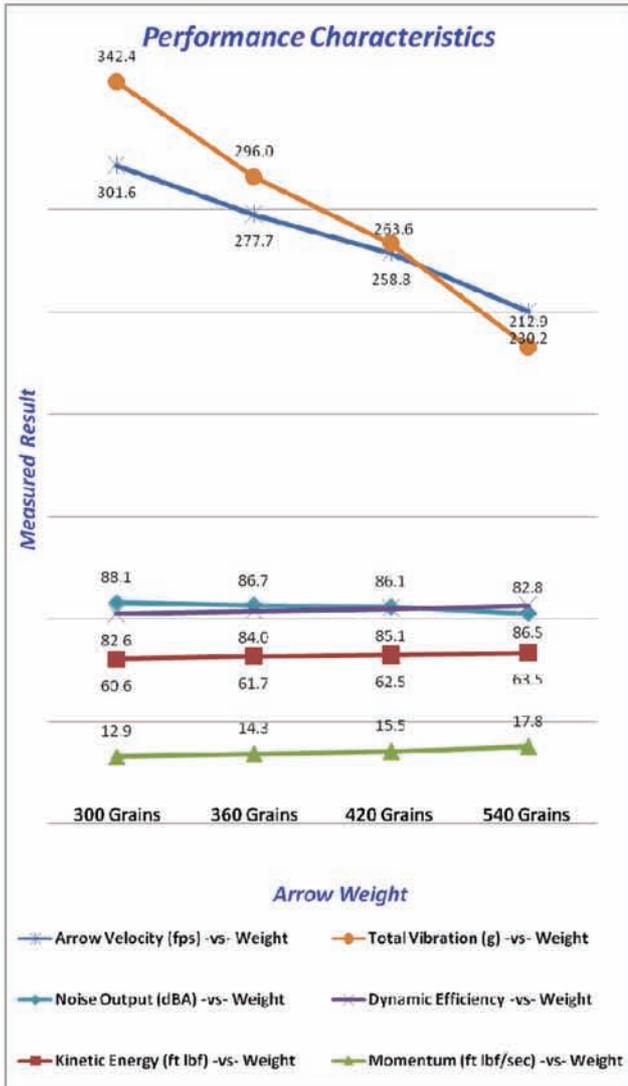
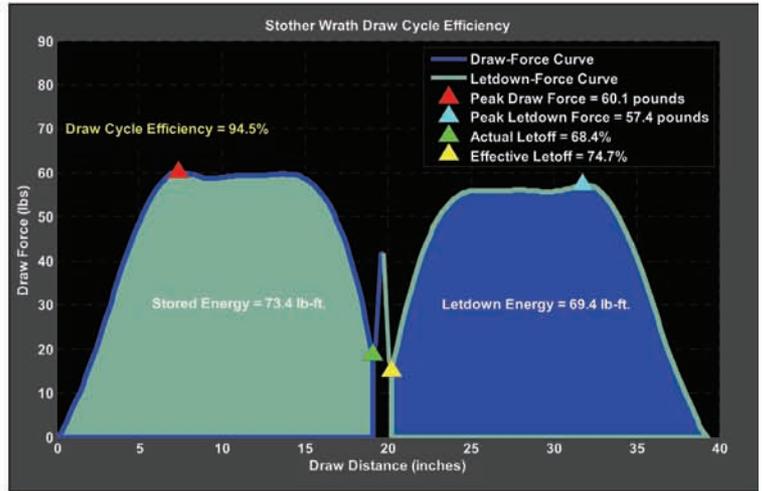
SPEED / PERFORMANCE MEASUREMENTS:

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: 14.0

Dynamic Efficiency: 84.5%

Draw Cycle Efficiency: 94.5%



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: 156.9 g

Negative X-Vibration: -172.0 g

Positive Y-Vibration: 224.8 g

Negative Y-Vibration: -222.6 g

Positive Z-Vibration: 132.9 g

Negative Z-Vibration: -138.3 g

Total Vibration: 278.7 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: 35.7%

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: 101.9 dB

A-Weighted Sound Output: 85.9 dBA

C-Weighted Sound Output: 93.5 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: 3.3%

Sponsors continued from 78

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 work done for *ArrowTrade*.

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. ←

Gander Mountain Backs Soles4Souls Charity Effort

Gander Mountain was proud to announce a unique arrangement with Soles4Souls which aims to supply 500,000 pairs of shoes to those in need. One of the nation's premiere outdoors retailers and the Nashville-based charity have joined forces once again, helping promote multi-platinum selling country artist Billy Gilman's new charity single *The Choice* while working toward the goal of supplying shoes to needy children.

Starting on April 16, Gander Mountain customers who purchased a pair of shoes in stores could receive a free download of Gilman's new single. In addition to Gilman, the song features 18 of country music's top artists, including Alan Jackson, Reba McEntire, Josh Turner, and Keith Urban. Gander Mountain then donated \$1 from every pair of shoes purchased to Soles4Souls, which is able to supply a pair of shoes to someone in need for every dollar that is donated.

"We are proud to be able to partner with Soles4Souls once again to help reach the goal of 500,000 pairs of shoes for those in need," said Steve Uline, Gander Mountain's executive vice president of marketing. "It is a great opportunity for Gander Mountain customers to help those less fortunate while getting a free download of some great music from Billy Gilman and other popular country artists."

Gilman, who has sold more than six million albums worldwide and garnered a wide range of awards, was in the process of writing material for his upcoming music project with two of his co-writers, Dan Murph and

Philip Douglas, when the idea for *The Choice* was born. In a YouTube video, Soles4Souls challenged people from all across the country to start their own shoe drives in their communities and do something to benefit those living in adverse poverty and in need of footwear. Instead of setting up a collection bin on a crowded street, Gilman, Murph and Douglas got the idea to do what they do best, write a song. They agreed that every penny generated from the song, including the songwriters' and publishers' shares, would go to Soles4Souls. Within one week, the trio penned *The Choice* and pitched the idea to the charity organization.

"Great success and countless pairs of shoes donated have been the results of our past collaborative efforts with Gander Mountain, so it made perfect sense to work together once again, giving shoppers the opportunity to provide great footwear for themselves and for those less fortunate, while getting great music for free," said Kevin Goughary, CEO of Soles4Souls, which has donated more than 17 million pairs of shoes across 129 countries since its inception in 2004. "For every pair of shoes purchased at a Gander Mountain store, a life somewhere around the world will be changed with the gift of shoes. It doesn't get any sweeter than that."

The Choice was co-written by Gilman to bring attention to the worldwide plight of children in desperate need of shoes. All of the proceeds from the digital download of *The Choice* go directly to Soles4Souls. The song came to life through the contribution of the voices of Gilman and fellow country

artists Rodney Atkins, Montgomery Gentry, Amy Grant, Steve Holy, Alan Jackson, Wynonna Judd, Richie McDonald, Reba McEntire, Vince Gill, Ronnie Milsap, Craig Morgan, Kellie Pickler, LeAnn Rimes, Diamond Rio, Kenny Rogers, Randy Travis, Josh Turner, and Keith Urban. The Gander Mountain special offer ran through May 14.

About Gander Mountain

Gander Mountain Company headquartered in St. Paul, Minn., is the nation's largest retail network of outdoor specialty stores for hunting, fishing, camping, marine and outdoor lifestyle products and services. Since 1960, Gander Mountain has offered the best selection of outdoor equipment, technical apparel, active casual wear, and footwear featuring national, regional and specialty brands at competitive prices. Focused on a "We Live Outdoors" culture, Gander Mountain dedicates itself to creating outdoor memories. There are currently 114 conveniently located Gander Mountain outdoor lifestyle stores in 23 states. For the nearest store location visit www.GanderMountain.com or call 800-282-5993.

Gander Mountain is also the parent company of Overton's (www.overtons.com), a leading catalog and Internet based retailer of products for boating and other water sports enthusiasts.

Scientific Crossbow Test

Arrow Precision Outdoors is a relative newcomer to an ever growing crossbow industry. The Pennsylvania based company isn't just a crossbow company. They have been a player in the paintball industry as well. Their first products associated with the outdoor industry were released approximately seven years ago. The company is growing its presence in the archery industry. Their product lines span several areas and include bowfishing, hunting and shooting.

Arrow Precision's 2012 product catalog is marketed to experienced, novice and youth archers. Many companies are trying to sell to youths, and rightfully-so, they are the future of our sport. The product offerings for younger archers are plentiful for 2012. Arrow Precision has released youth crossbows, slingshots and small compound/recurve bows. With a vast selection, most, if not all, youths will find a fitting product.

Just five years ago Arrow Precision released their first crossbow. As of today, a fairly hefty line of products is available. For this year, four new crossbows have been released. The most recent crossbows are offered as either a recurve or compound design. With many entry level/novice archers in the market, a diverse production offering is essential to making a sale. Further, many consumers are quite price sensitive these days, and are looking to make sure their money goes a long way. Arrow Precision is mindful of the cost-conscious consumer and is determined to bring consumers a product that doesn't cost an arm and a leg. The company has specifically marketed their current and past designs to fit into the lower-to-mid-price quadrant. Dan Welker, sales director, explained that value goes a long way when making a sale. He wants both those who are familiar with crossbows and new

archers, to walk away feeling fulfilled with their purchase. Dan believes that you don't have to pay excessive amounts to be satisfied with your purchase.

Testing Background

The Inferno Hellfire II went through a standard and regulated performance test. The focus of these types of tests is to determine, for a specified product, the performance characteristics. Additionally, the goal is to provide those archers



that enjoy shooting and/or hunting with appropriate objective information, as well as some subjective commentary, for aiding in the purchase process. With that said, this evaluation is by no means conclusive. Each archer should assess what is important to him or her and interpret the results within the context of this article. As always, I recommend that anyone who is

considering a crossbow should shoot as many different makes and models as possible to determine what best suits their individual needs and desires.

Please note: due to the lack of testing methods and procedures available publicly for crossbows, testing guidelines were developed and published in 2009. These testing guidelines remain unchanged since 2009, and I continue to use these methods to evaluate crossbows.

Introduction

Arrow Precision has introduced several new products with names that focus on fury and fire. The Inferno Hellfire II is a quad limb designed compound crossbow. It's not a premier offering, yet remains one of the company's most balanced products. The balance comes in value. Those that want fair performance and good features, at a fraction of the cost, will find this product to be a good fit.

The Inferno Hellfire II is designed with a powerful 185 pound draw weight. The riser holds the quad limbs in place, resulting in precision shooting. The company recommends and provides 20 inch, carbon fiber arrows with 100 grain field points. The crossbow is designed to push the 400 grain arrow at approximately 300 fps. The crossbow is not intended to be a speed demon like its brother the Inferno Firestorm. The upshot of less draw weight and speed, at least with this design, is lower sound output.

Inferno Hellfire II			
Contact Info	Arrow Precision Outdoors www.arrow-precision.com		
MSRP:	under \$500	Finish:	Fully dipped CAMO
Limbs	Compression Fiberglass	Riser:	CNC Machined Aluminum
Barrel:	Extruded and Machined Aluminum		
Performance at a Glance:			
Arrow	Speed	K.E.	Momentum
425 Grains	282.3	75.2	17.1
475 Grains	270.7	77.3	18.3
525 Grains	259.8	78.7	19.4

Dimensions						
Model	Axle to Axle (inches)	Axle to Axle (full draw) (inches)	Powerstroke (inches)	Overall Length (inches)	Mass Weight (including scope)	Mass Weight (without scope)
Inferno Hellfire II	25.9375	23.0625	11.5	36.625	8.6 lbs	7.8 lbs

The product has several other components that support productive shooting. The Inferno Hellfire II includes a weaver style scope mount with gang adjustment and offers an adaptable design for fiber sights or scope. The model tested included a 4x32 multi reticle illuminated scope. Other attention-grabbing components of this model are the anti-dry fire mechanism, ambidextrous auto-safety and quick detach quiver.

The crossbow dimensions and weights as measured out of the box were checked first and appear at the bottom of the previous page. Next, the crossbow went through a thorough inspection. The review focused on string/cables, eccentrics, limb and limb pockets, rail, stock, butt plate, trigger housing, trigger and trigger guard. After a thorough review of the Inferno Hellfire II, I found only a few blemishes on the stock. A few film dipped areas had voids; otherwise, I did not find any significant blemishes. Overall, I would rate the product average in the workmanship section.

Thereafter, I put the product through a 100-150 shot cycling to verify functionality. Some minor testing is performed, but the focus is to detect any issues or concerns with the product before starting the actual performance testing. The Inferno Hellfire II performed well in this segment. I was pleasantly pleased to see no changes in bolt tension after rechecking all the hardware to confirm that nothing loosened during the initial and final testing. There was some wear and tear on the product sticker logo located close to the trigger mechanism, which had no effect on performance, only impacting aesthetics.

The crossbow is next evaluated on the five criteria outlined in the copy and chart below.

Detailed Test Results

Dynamic Efficiency: The dynamic efficiency portion of the test utilizes a Revere Load-Cell controlled by a winch device; the load-cell connects to the crossbow with a cocking aid. The crossbow is mounted in a shooting platform that controls any movement that might be experienced as force draw curves are taken. The stored energy obtained from the force draw curve is used in conjunction with speed measurements to calculate dynamic efficiency.

Speed per inch of Power stroke: Speed measurements were taken with three projectiles. A Pact Chronograph XP and a Competition Electronics Pro-Chrono IR are set in

tandem to record results. The average speed measurement is divided by the power stroke to determine the speed per inch of power stroke.

Noise Output: Sound measurements were recorded with three projectiles. The measurements were averaged and the sound meter was set to take measurements with the A-weighted filter (which mimics the human ear).

Trigger Force: The Trigger Force measurements were recorded in pounds and averaged. An Imada Digital Force Gauge is used to determine the peak Trigger Force.

Precision Measurements: This provides an indication of how close groups were shot together when shooting by hand from a bench rest or other supportive device. Extreme spread is the method used to calculate group size.

shot	Weight (grains)		Chrono 1	Chrono 2	shot
1	425		282.7	281	
2			282.5	280	
3			282.1	280	
4			282.1	280	
5			281.9	280	
avg (fps)			282.3	280	avg

ArrowTrade Scorecard	
Evaluation Criteria	Score
Adjustability	
Craftsmanship	
Design Integrity	
Features	
Performance	
Sound	
Trigger	
Vibration	

Note: The ratings are based on the following color codes:
 Blue = exceptional,
 Green = above average,
 Light Green = average,
 Yellow = marginal,
 Red = unacceptable

The Initial Review

The Inferno Hellfire II was received in a normal sized box. Upon opening the box, I was pleased to see a neatly laid out package. Each component fit precisely into its individual compartment. The product did not come assembled or bore sighted. After reading through the owner's manual I quickly put together the product. Assembly of the

Test Category	Assessment
Dynamic Efficiency	Provides an indication of the amount of energy output by a crossbow relative to the energy expended through drawing the crossbow back. An assessment is made with multiple projectile weights.
Speed per inch of Power-Stroke	Provides an indication of the amount of speed output by the crossbow over the distance from the full-draw position to the static brace height position. An assessment is made with multiple projectile weights.
Noise Output	Provides an indication of the noise output characteristics of a crossbow at the "point blank" range utilizing a series of shots with multiple projectile weights.
Trigger Force	Provides an indication of the amount of force required to discharge a given crossbow.
Precision Test	Provides an indication of how close groups are shot together by shooting from a bench rest or other supportive device.

Speed Information

Weight (grains)			shot	Weight (grains)			
Chrono 1	Chrono 2	Chrono 1		Chrono 2			
1	475	271.3	269	1	525	260.4	258
2		270.8	269	2		259.5	257
3		270.3	268	3		260.1	258
4		270.7	268	4		259.5	258
5		270.6	268	5		259.7	258
(fps)		270.7	268	avg (fps)		259.8	258

Speed per inch of Powerstroke (PS)	Weight		Speed Per Inch of PS
	425 grains	475 grains	
	425 grains		24.5
	475 grains		23.5
	525 grains		22.6
	Average		23.6
Powerstroke	11.5	inches	

Performance Information

Peak Force		169.4	lbs
Stored Energy		111.8	lb-ft
Dynamic Efficiency	425 grains	67.3	percent
Dynamic Efficiency	475 grains	69.2	percent
Dynamic Efficiency	525 grains	70.4	percent

prod (riser), cable slide and foot stirrup took less than 15 minutes. Mounting the scope took approximately ten minutes. Overall, the setting up was made simple, mostly due to the good layout of the owner's manual.

After assembly was completed, I perused the warranty requirements and safety information. Both sections provide a good understanding of the company's approach to sales. I would recommend that the archer reads through the owner's manual, and reviews all the fine print related to the warranty services.

There were several key takeaways related to the Inferno Hellfire II that resulted from the assembly, manual review and initially shooting. First of all, a product that is designed simply, yet has precisely machined components, makes for easy assembly and use. The quiver setup is a prime example of a simple component that was designed properly and is easily installed and detached. Next, lubricant, lubricant, lubricant! Lubricant on the strings, cables and rail is essential for product longevity. The

Sound Measurements

Weight (grains)	425	475	525
Parameter	Peak A -Weighted Noise		
1	94.3	92.7	91.9
2	94.4	93.0	92.4
3	94.5	93.1	91.8
4	94.4	92.9	92.5
5	93.5	92.8	92.2
6	94.2	92.9	92.1
7	94.6	93.0	92.3
8	94.2	93.0	91.9
9	94.0	92.6	92.0
10	94.3	93.1	92.1
Average	94.3	92.9	92.1
Total Avg Max (dBA)	93.1		

manual mentions lubricating the string, serving and rail. Failure to following these guidelines will ultimately result in premature string serving deterioration. The final item relates to shooting. The rope cocking device looks similar to most that are available. However, it's distinctly designed to create separation from the rail and allows the "auto-safety" to be engaged. Even though I like product accessories that can be interchangeable from company to company, the cocking aid does its job with this model.

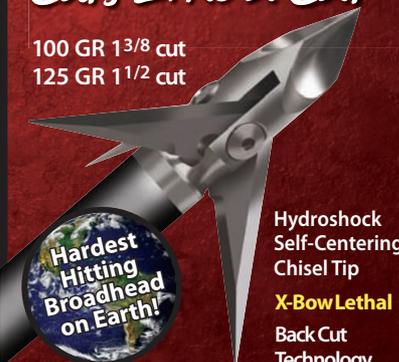
In The Field

I had a lot of time to take this product in the field. The Inferno Hellfire II is marketed as a product that gets people fired up. I like the excitement that comes with the advertising. At the onset of my field testing I put aside the hype to focus on how this product functions. While shooting, much of my attention is put on the fit and feel. As expected, I don't enjoy products that are unbalanced - at least based on my standards and shooting technique. This product fit my shooting style well, especially from a control standpoint. The balance point was located more toward the trigger guard, which can be a big plus for many archers.

The design of the stock is a big plus to precise shooting. A thumbhole stock is quite common amongst competitors' products. However, this design is slightly different. There are raised panels on each side of the stock, known as a comfort grip. These panels allow for increased comfort and control. A similar raised panel is located on the forearm. The other

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125 GR 11/2 cut



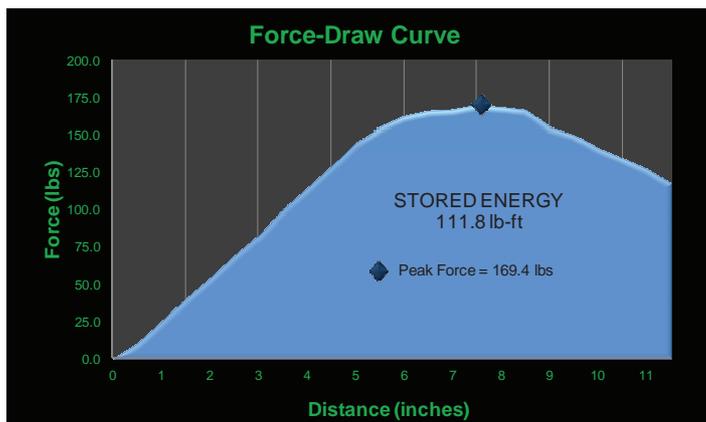
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component that is not stock related, yet benefitted my shooting, is the illuminated scope reticle. This is another common product feature, but is still something you normally don't see in a mid-range priced product.

Noise and vibration can be a major issue for those looking to purchase a crossbow. We all have to face the facts that crossbows are designed to some degree differently than the modern compound bow. The result is more noise and vibration, at least based on the testing I have done. Nonetheless, the Inferno Hellfire II did very well in both the noise and vibration department. In fact, the product produces noise that is several decibels lower than most competitors' products that have undergone the same testing.

Hot Features

Earlier I mentioned that I like crossbows that are designed simply, yet effectively. I prefer a product with an anti-dry fire component. The design of this component is normally not so simple; however, this design lends itself to be much more straightforward. With that said, an anti-dry fire feature is not something I feel all shooters must have.

Trigger Analysis	
	Trigger Pull (lbs)
1	2.02
2	2.02
3	2.32
4	1.96
5	2.04
6	2.03
7	2.09
8	2.06
9	2.01
10	2.11
Average Trigger Pull (lbs)	2.05
Distance Traveled (inches)	0.3265

For those who are new to the sport or consumers that need additional reassurances, this component can go a long way, and may become a crossbow lifesaver.

Another component that was not mentioned in the field testing, but something that I felt created a good impression, was the

Projectile Precision						
	Model/ Brand	Arrow Weight	Distance (yards)	Spread 1 (inches)	Spread 2 (inches)	Average (inches)
Shooting by Hand	arrowprecision carbon arrow	402.5	40	2.886	2.001	2.444
Shooting By Hand	arrowprecision carbon arrow	403.7	40	2.743	2.897	2.820

trigger. The trigger is lighter than some and many will find that aspect appealing. The facet of the trigger that I found beneficial is the additional distance it takes to reach the "breakpoint." This distance adds some control over the trigger, and has a similar feel to the famed Accutrigger by Savage. I also enjoyed the subdued camouflage pattern since I don't like many of the common, flashy camouflage patterns of today. I found this pattern to be distinct and easy on the eyes.

The final features that are "hot" remain tied to good design and manufacturing. The Inferno Hellfire II sample provided possessed tightly tolerance limb pockets and riser/barrel connection. These components were precisely created, the riser/barrel was easy to install and benefits of both are significant to the archer when it comes to precise shooting.

The Off-Shoot

As with most products, I do find things that can be improved upon. I found three areas I'd like to see the company focus on with the Inferno Hellfire II. The retention spring did not provide adequate downward pressure on the arrow. I assume this is an anomaly, and I suspect additional quality controls should limit these product imperfections. The second concern, the stickers that were around the trigger housing eventually detached or were scraped off while shooting. It's recommended that these stickers could have better adhesive and be designed to be less susceptible to friction. My final concern is related to the axle-to-axle length. The product is not grossly larger than most, however, a reduced width would help maneuverability in the field.

Overview

Arrow Precision is looking to burn up the market with their new selection of crossbows. The company believes their key to success comes from the fact that they are constantly considering final costs to the user as they design and produce products. In addition, the company executives are hell-bent on the point of not sacrificing quality in order to maintain lower costs. The leaders of this company are constantly seeking customer feedback and relay this information to their designers. This approach to product feedback many times results in the development of better products.

The Inferno Hellfire II did well in many areas of the objective testing. The scorecard indicates respectable scores in all categories. It's great to see a product that costs under \$500 is able to achieve scores in the exceptional range under some subjective categories.

To sell the Inferno Hellfire II focus on value. Many new or experienced crossbow consumers should relate well to low-priced products. If your sales approach combines

economics with the features offered, it's a much easier sale. If this product doesn't fit the archer's requirement, the firm has several less and more expensive models with differing features.

Scientific Target Test

McKenzie, a Delta Sports company, is amongst the names at the top of the leader board in the target manufacturing arena. McKenzie seems to be best known for producing 3-D targets. Most archers can attest to the popularity of these targets in their local 3-D circuits. The company produces a multitude of products outside of their 3-D line, including decoys, bag targets and foam targets.

In 2007, McKenzie introduced the ShotBlocker Bowhunter. The ShotBlocker series falls within the company's layered foam line. The ShotBlocker series has grown to include seven offerings all using foam that is welded together at multiple spots. The more popular targets within this line are the nine spot models. This sub-segment includes the Utility, Backyard, Crossbow, and already mentioned Bowhunter model. McKenzie also offers a foam target that is smaller in stature, but equal in design to the nine spot models, called the TravelPro. The TravelPro is an easy sell to customers that have space restrictions or need a portable target.

The ShotBlocker Bowhunter is no doubt an eye-catcher. The vibrant blue body and black reference points create an excellent contrast for shooting. The other offerings within the foam line have a similar appeal. The company has a solid approach to designing these layered targets. The most noticeable is obvious - aesthetics. The targets produced by McKenzie, and available online or at my local pro shop, display a very clean look, present clear-cut faces and fall in a range of easy-to-carry sizes. The company remains keen on producing targets with simple, yet effective designs. However, the Bowhunter model isn't necessarily as simple as one may think. The company has included a wrap over two faces, which should increase curb appeal and test an archer's proficiency. The wrap is a simple addition, nevertheless beneficial, and for a short while this will provide added protection from the elements.



The concept of simple and effective goes a long way with most people, and as mentioned above, the Bowhunter model exudes these qualities.

The Test

There are very few technical reviews on targets, which has made developing test parameters a little difficult. With that said, evaluating targets is not as easy an endeavor as some may think. I am hopeful that this test 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 for velocity during the test and included in this article. In addition, the target's distance from the bow is standardized.

Penetration Test

Parameter (Shot)	Front of Target
1	23
2	22
3	26
4	27
5	25
6	28
7	22
8	29
9	32
10	27
Average Shots*	26

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

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

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

McKenzie ShotBlocker Bowhunter

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 ShotBlocker Bowhunter. 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 when 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 the previous one, since 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 arbitrarily. The remaining 10 or so inches of arrow gives an archer enough room to grip the shaft without making contact with the fletching as the arrow is pulled from the target.

The ShotBlocker Bowhunter is mounted to a hydraulic lift table. The table allows the target to be raised and lowered and moved left and 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 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 target's ability to endure heavy

hits from an arrow at close range. On average, it takes 26 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 measure when dealing with many variables. The test that has been created allows me to measure the amount of force it takes to remove an arrow with some of the equipment I mentioned earlier.

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 to a typical hunting or 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. Do not

be put off because of this difference. The typical penetration of the fiberglass arrow into the ShotBlocker Bowhunter 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 and clean fiberglass and carbon surfaces are very similar; therefore, it is difficult to say those differences create any disparity.

As mentioned in the previous segment of the test, 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 the 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.

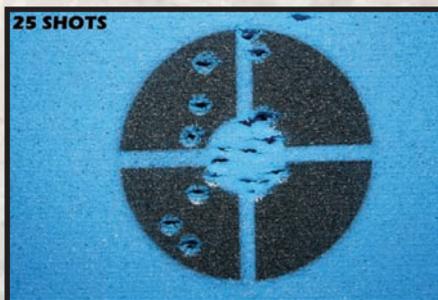
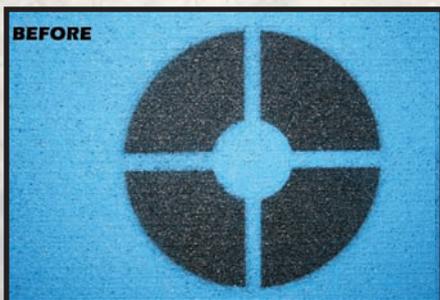
The results confirm that it takes on average 58.7 pounds of peak force to remove an arrow from the ShotBlocker Bowhunter. The test represents data from 10 shots, and the results are based on the bow and arrow setup mentioned in this segment of the test.

ArrowTrade Scorecard

Evaluation Criteria	Score
Craftsmanship	Green
Design Integrity	Blue
Ease of Pull	Light Green
Features	Light Green
Performance	Green

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

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



Bow Setup and Distance from Target - Arrow Removal	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

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 2 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 as shown.

Pros/Cons

The ShotBlocker Bowhunter is designed first and foremost to stop arrows; this includes broadhead and field point tipped arrows. As indicated on the company website, the ShotBlocker model features Welded-Core Technology. The technology creates uniform foam compression. The benefit to the user is both internal and external foam consistency. We can agree that soft or weak spots on a target are a major concern. The testing indicated very consistent foam compression and stopping characteristics throughout. The use of foam has its pluses. Foam can be manufactured to be very uniform and homogeneous. It also is typically less abrasive and has less negative impact on the outer layer of the arrow than some other target materials.

The friction created through the foam/arrow contact creates a force that is difficult to overcome, and the results of the hole-in-hole test demonstrate that the Bowhunter model has ample stopping characteristics. From another perspective, the numerous shots required to penetrate deeply into the target give way to a different concern - difficult arrow removal. This is not uncommon compared to targets I have tested and owned over the years, and the foam does an excellent job of making contact with the arrow, which is what you want. I can personally attest to the fact that I did not struggle to remove arrows during the test, but some archers may have concerns about this aspect. Therefore, I'd suggest that those customers considering a layered foam target from McKenzie also buy arrow lube and/or an arrow puller like the Bednar Perfect Puller recently introduced by TenPoint Crossbows.

As already mentioned, the company designed this target and others within their three lines to be simple and effective. The foam layered line does not have plates, bands, cables, wires or straps. Their lack enhances longevity based on the simple KISS (Keep It Simple) principle we have all come to believe in. The bottom line is that archers are looking for a product that will last, and I am of the opinion that this target should survive as long, if not longer, than most

Arrow Removal Test

Average (lbs)* **58.7**

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

competitors' products. Further, to strengthen mine or anyone's opinion on this target, consider the technology that has gone into the design. The Welded-Core Technology solidifies the interior as well as the exterior because the layers are bonded together at multiple points. People that are familiar with foam targets have at one time or another experienced target chunking or slivering. This Welded-Core construction helps eliminate those issues. Consumers should be aware that with all the pluses there is a negative. The ShotBlocker Bowhunter is porous. As expected, this target is susceptible to the elements - especially water intrusion. For that reason, I recommend utilizing a tarp or some other protective means when the target is not in use, or store the target in a garage or shed.

The other major selling point for the ShotBlocker Bowhunter is the lightweight design. It is by far one of the lightest targets I've tested. I personally do not like lugging around heavy targets, which may in many cases be a factor of size rather than composition. This target is created with a perfect balance of size, weight and stopping power.

Overall

The product has some superb features. The clean, crisp shooting faces and lightweight design are the standout characteristics. The samples tested demonstrated consistent foam density, which is a big plus for archers that shoot as much surface area as possible. The Welded-Core Technology adds greatly to the target's integrity and sets this target apart from the competition. I believe the Iowa-based company is going to continue to refine its line of targets and offer an even larger selection in years to come.

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What Your Customers Really Want to Know

I attended my first Deer and Turkey Expo in 1986. I had just collaborated with Glenn Helgeland of Target Communications in Mequon, Wisconsin on the release of my book *Tuning Your Compound Bow* and Glenn thought it would be great if I presented some bow tuning seminars related to the book at his Madison, Wisconsin Expo. So I did. I've happily returned numerous times including the past three consecutive years.

I guess what I remember most about that first trip was the display of big buck racks. Having grown up in Pennsylvania I did not get to see such huge sets of antlers, nor so many of them, as I did in Wisconsin. I remember the volume of people also and the vendors' displays.

Now my job at the Expos is a little different. I'm the Archery Answer Man. Three years ago Glenn asked me to be one of his "Tech Info" experts for each of the four expos he owned. I agreed, so along with several other experts I anchor a booth in the "Tech Info

Center" and answer expo attendees' questions about archery.

My fellow experts do the same in their own area of expertise. Dave Henderson, an outdoor writer from upstate New York (www.henderson-outdoors.com), handles the shotgun/slug gun and muzzle loader questions. Mike Faw handles the clothing and boot questions and is newly employed by the U. S. Sportsmen Alliance in Columbus, Ohio. Handling the firearms questions is Ron Spomer, a well-known writer, hunter and television host from Idaho. The turkey talk is fielded by long-time turkey hunter and writer Gary Sefton of Indiana while Judy Helgeland, Glenn's wife, answers questions about the food plot samples she has on display. Mike Brust covers Midwestern predator calling and hunting.

This past winter our expo trips began in mid-February, 17-19, with the 26th Field & Stream Deer & Turkey Expo/Michigan in the Lansing Center in Lansing, Michigan. Four

weeks later, March 16-18, we gathered at the 20th Field & Stream Expo in Columbus at the Ohio Expo Center (State Fairgrounds). The next two consecutive weekends found us at the 22nd Field & Stream Deer & Turkey Expo/Illinois, Peoria Civic Center, and then the 28th Field & Stream Expo/Wisconsin held at the Alliant Energy Center, Madison.

Then, just when my schedule couldn't get any busier my van decided to drop a transmission a week before the Ohio Expo. AGH! What a mess! But as they say, "the show must go on" so on I went. I bought a second vehicle, packed and headed out on the road the next day. Some days ya gotta do what ya gotta do!

Shows Going Forward Under New Ownership

After 28 years of building and managing the Deer & Turkey Expos, Target Communications owners Glenn and



The sign says it all for the 2012 Expos. Field & Stream is present and accounted for at all four Expos along with Remington. The change in ownership was quite evident throughout the show and in all of the advertising. Now Field & Stream is more than just print and digital media; they reach out and touch the consumer in all four Expos.



One of expo manager Glenn Helgeland's key ideas to focus on the consumer was to create the Tech Info Center. He decided to staff it with well-known authorities on guns, bows and turkeys so that attendees had a place to get their questions answered and learn how to improve hunting and shooting technique. This photo was taken during the last few quiet moments before the crowd entered at 9 a.m.



Earlier this year Expo manager Glenn Helgeland was honored with the 2012 Cabela's Lifetime Business Achievement Award. Glenn is joined in the center by wife Judy, Bud Pigeon (left), U.S. Sportsmen's Alliance (USAA) president, Tommy Millner (right) president of Cabela's, and Laurie Lee Dovey (far right) of the Professional Outdoor Media Association. The award is presented by USAA to companies that demonstrate the same passion and commitment to protecting America's outdoor heritage as the Cabela family has shown over so many years. Glenn and Judy built the Expos into what they are today as owners of Target Communications Corporation of Mequon, Wisconsin.

Judy Helgeland decided to sell to the Bonnier Corporation, parent company of *Field & Stream* and *Outdoor Life* magazines. The sale was announced on December 8, 2011 and planning began immediately to align these four highly recognized and well attended sportsmen's events with Bonnier's outdoor publications.

According to the press release on their web site, www.bonniercorp.com, Bonnier CEO, Terry Snow, writes "The power of these top brands, *Field & Stream* and *Outdoor Life*, increases our ability to position them in many different arenas in the media world. We have opportunities to increase our audience beyond magazines, websites and

digital apps. This is a prime example of how we are transforming into a multichannel business so advertisers can place a true value on our brands' effectiveness as an advertising and marketing vehicle."

I couldn't agree more with their strategy. With approximately 90,000 total attendees each year these four expos are a great way to connect with Joe-average sportsman. These are the real guys and gals that get out into the woods and streams to hunt and fish. These are the folks that do the real "buying" and using of outdoor products and ask the basic kinds of questions that most all outdoorsmen have on their minds.



Only moments after the doors open each day the aisles are filled with inquisitive expo attendees. By midday Saturday the aisles are packed and we're swamped with questions, exactly what the boss wants.

Bonnier's main man at the four 2012 Expos was and is Tom Weber of Winter Park, Florida. Tom is the president of the Events and Entertainment Group for Bonnier Corporation which means he is the eyes and ears on the ground at the shows. I got a few minutes with Tom before the Wisconsin Expo opened so I asked

him a few key questions, headed below by my initials and printed in *italic*.

LW: Tom, tell me what you see as the main reason for Bonnier purchasing the four Deer & Turkey Expos.

Tom Weber: We are constantly looking for new opportunities to extend our advertisers' reach to the public. We do lots of trade shows but this is the first we've ventured into consumer expos. These four fit nicely with our magazines and our digital media.

LW: This is your fourth show this season. What have you learned?

TW: These are great shows. I attended some of the seminars and soon came to realize that hunting preparation and equipment preparation go on all year long. Most of the show attendees are serious about their hunting and spend time outdoors scouting, tending tree stands, shooting and making food plots. I've not done much hunting so learning how much avid hunters do year-round is certainly an eye opener and very helpful to me in planning for future events.

LW: You're working with my publisher and good friend Glenn Helgeland. What do you see as Glenn's biggest challenge?

TW: Glenn has been fantastic to work with. He really knows this end of the business and is highly skilled in running these shows. His biggest challenge this year is dealing with all the corporate issues. As a large corporation we have fiscal rules and policies that have to be followed which slows things down a bit and add lots of work for Glenn. He's doing a great job of adapting - he's great to work with.

LW: What's been your biggest challenge so far?

TW: I think learning how Glenn and Judy get all of these events organized, scheduled and then opened for attendees. They do so much and eventually someone else from Bonnier will have to take over and do all of it. After all, they want to retire in the next few years and we have to keep it going on our own. It's quite a challenge for us but we do have some big advertisers on board to help us relate to the consumer, Remington and Yamaha. They are interested in supporting their local dealers and helping with show

promotion in the four event states and surrounding areas. This is where all of our magazines, digital media and other programs will all work together to connect with and support the consumer. This is an exciting time for all of us with Bonnier Corporation.

THE ARCHERY ANSWER MAN

Glenn has been my book publisher since I wrote my first book, *Tuning Your Compound*, way back in 1985. So when he decided to incorporate a Tech Info Area into his consumer shows he picked me for the archery booth. I thought that was a great idea and still do. It gives me a chance to connect with what the consumer is thinking and what information they need; that's good for a writer to know. Shows are all about face-to-face, instant feedback one-on-one. This is intensely personal. This helps bring products to life and solve shooters' problems faster.

My job at the Field & Stream Deer & Turkey Expos is to answer any and all questions that attendees ask me. That means I get questions from individuals of all backgrounds and all levels of archery interest. Some have no archery experience while others have shot archery all of their lives and a few are friends that are currently shooting professionally.

I gather new product catalogs at the ATA Trade Show in January and keep them available at my "Answer Man" booth so I can have access to current

and correct information. I depend on this source and my Lancaster Archery Catalog to help me answer many of the product related questions with the facts people need to make informed buying decisions.

When it comes to shooting and hunting questions, I rely on my own research, writing and experience. I've been bowhunting and shooting tournaments since 1958 so that experience is invaluable in helping others. I have my books and DVDs available for sale at my booth and use them to instruct archers about their shooting.

Much of my in-booth teaching centers on operating release aids correctly in an effort to help archers improve their accuracy and consistency. It takes only a few minutes to demonstrate how to hold an index trigger release aid properly and then have the archer actually learn and perform that skill. When they get the release aid in their own hand and at full draw with the Saunders Firing Line practice aid they get a skill they can put to work at home and shoot better.

At the same time I can teach them how to stand at full draw so that their drawing forearm and elbow are in line with and behind the arrow. This allows them to use their back muscles properly to hold the bow and execute the release consistently. My hope is that they feel the level of control they have in their back and then reset the draw length of their own bow so they can

reproduce that same correct full-draw-position.

I get to see most of the show but on a very limited time budget. Usually I get 20 minutes before the show opens in the mornings to look around and talk to a few vendors about their product. I also use that time to take a few pictures of the big buck contest areas which are always impressive. Plus, I get to visit a few of the friends I've made at the shows over the years.

At the urging of Editor Tim Dehn I began a question log at this year's shows. When an interesting question came my way I recorded it along with the person's first name and state of residence. We both thought this information could help you gain some insight into the thoughts of the average consumer. Maybe you can use what you see here to reformulate your product line or to incorporate a new program to help educate customers. In any case you'll get to read actual consumer questions and my responses.

THE QUESTIONS

GROUP A: SHOOTING SKILLS

How high should I hold my release arm and elbow? (Deb, OH). Ans: You should be holding your elbow and forearm at least as high as the arrow nock or slightly higher. This enables your shoulder blade to be positioned the proper distance from your spine so your back muscles can hold the bow efficiently. Keep in mind, however, that the draw length of your bow must allow your holding arm to be in line with the arrow as seen from a top view. Your bow has to fit you in order for you to get



My Answer Man booth is where I reside for the three days of each show answering all the questions about archery. I get a chance to teach proper release technique to anyone who wants to improve their skill level. I've been known to also sell a few of my books and DVDs in an effort to educate the archery public. I get to talk to over 1,000 people at every expo.



Judy Helgeland spends her expo days at the food plot booth answering questions and providing sound strategies for planting your own plots.



This is what the big buck wall looks like by late Saturday afternoon. The owners bring them in to the measuring area staffed by volunteers from the Pope & Young Club and they register for the prizes available. Every mount is then displayed for all to see. There are hundreds of them, including some real whoppers of over 200 inches!

lined up properly – too many people try to fit into their bow instead and can't get their arm lined up correctly.

I'm left-eye dominant but have been shooting my recurve right-handed. What should I do now that I'm switching to a compound? (Andy, OH) Ans: I recommend you try a left-handed compound so you can take advantage of your dominant eye. You'll be using a peep sight along with a front sight on your compound and your dominant eye will work the best. Start with a light 40 pound draw weight to gain skill first

then move up in weight. If you plan to hunt with your compound then you'll be able to aim with both eyes open. If you shoot left-handed, I highly recommend that approach when you are in the woods.

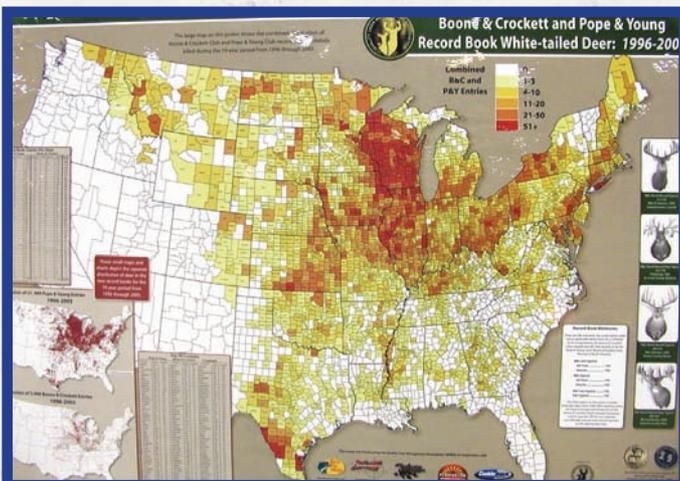
I shoot my longbow with fingers. What release can I use with my old, tired hand? (Tom, WI) Ans: Try a wrist strap style release aid. The strap will help hold the bow behind your wrist so your "old" fingers don't have to do so much work. Put a D-loop on your bowstring just like the compound guys do

– it's more accurate and saves wear and tear on the serving. I have one here so let's give it a try and I'll help you learn how to surround the trigger up to the second joint in your index finger.

My right eye is failing, how can I aim with my left eye but still shoot right handed because I can't draw left-handed due to a shoulder injury?

(Jim, WI) Ans: I helped a guy with this same problem last year, honestly. What he was able to work out involved drawing to the left side of his face and chin. It required a large peep hole and a longer D-loop on the bowstring but he was able to achieve reasonably good full-draw-position and aim with his left eye. He had good accuracy at 20 yards. It will be a challenge for you but it will work if you stick to it. Call me if you need more help.

I shoot 295 to 298 on the NFAA 5-spot target. How do I get that elusive 300 score? (Bill, MI) Ans: 295 is a good score but I understand why you want that 300. You're looking for a little more consistency and you know you have the skill to do it. First, page 7 in my book "Core Archery" shows the top view of an archer in full-draw position with his holding arm in line with the arrow. Are you in this position? Most people I work with are just short of this which means they are holding the bow with their arm and not their back. Start by checking your own position by having a friend take a picture of you at



There are lots of information stations around the expo. This one displays the country-wide density of trophy bucks by county. How's your area doing?

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full draw. Then adjust the bow's draw length until you are able to match the page 7 illustration and then enjoy the consistency of holding and releasing with the help of your back. Secondly, how are you holding your release aid and what release aid are you using? I of course recommend that you at least practice with a true back-tension release aid so you train the proper muscles to hold and release the bowstring. Practicing the most consistent release process is vital to your consistency in tournaments.

My niece shoots NASP at her school but loses focus in competition. What can I do to help her? (Ron, OH) Ans: Keep in mind that she is young and may not yet have a very long attention span but there are still a few things you can do to help. One big thing you can help with is to take her to a nearby club to shoot some scoring rounds. Then take her to a new location where the surroundings are strange and have her shoot there as well. Secondly, you can

discuss with her that she is most likely thinking too much about score instead of on her shooting process. Most adults do this as well which means their conscious mind is thinking about a future result instead of staying in the present by thinking about their process. I prefer that my students think about controlling the shot from their back muscles and relaxing their holding forearm and, thereby, keep their thinking on the most important aspect of the shot. This also helps keep a youngster's mind off of "what other people are thinking about them"!

I've heard so much about gripping the bow so how do I correctly place my hand on the bow grip? (Tony, OH) Ans: I can appreciate where you're coming from on this concept. I've seen and heard so many theories myself but when it comes to archery shooting form your body, your anatomy, tells you how to shoot correctly. In the case of your bow hand you should place only your thumb pad on the bow riser. In doing so you are placing the bow in front of the radius bone in your forearm and allowing the bones (not muscle) in your arm to resist the force of the drawn bow - your lower and upper arm bones are lined up to resist the bow's draw force. Your hand, therefore, must be rotated so the knuckles are at a 45 degree angle to the vertical bow with your fingers and thumb relaxed. This is the best way to avoid transferring any torque into the bow handle during the aiming and releasing of the bow. It's so hard to learn because you do the opposite with your hands all day, every day. We're so used to controlling

everything we contact but when we try to control the bow in the same way we get poor results - we must "allow" the bow to shoot the arrow and not "make it" shoot the arrow.

How do I aim still? (Ian, age 13, WI) Ans: Well, Ian, at your age you may need to develop some more arm and core muscle strength. I recommend that you begin some strength training with simple stretch bands and some lightweight dumbbells. You can also do calisthenic exercises like push-ups and squats to build your body core so you can first "stand" still. Next, you must have your bow adjusted so you can establish proper full-draw-position in order to transfer the "holding" of the bow into your back muscles. At your age that means you'll be increasing your bow's draw length every three or four months to keep up with your growth spurts. Proper full-draw-position allows you to use less arm muscle and that leads to aiming steadier. The "dead still" thing is rather elusive and we're all trying to find it; do what I told you and you'll get closer to it.

I have target panic so bad that when my sight pin gets anywhere near the target I punch the trigger. I can't even sight in my bow. I don't want to quit so what can I do? (Skip, IL) Ans: Well, Skip, I have good news, there's



One of the biggest attractions at the Expos is the live animal exhibit by Awesome Animal Attractions, LLC, of Ohio. Owner Adam Sawmiller always has two or three bear cubs small enough to hold - they're only six weeks old by mid-March. The waiting line is long for those who want a picture holding one of the cuddly little cubs. Shortly after the expos are over they get too big to hold but are still fun to watch.



One of the most impressive displays I've ever seen at the Expos is the locked antler collection of Ron Foss of Michigan. Ron is holding a pair of record book bucks that died with their antlers locked together. I've never seen one 180 inch buck in the wild so it's hard to imagine two of them locked together; but then again I guess the six-pointers I see can't get locked together!

hope for you. There is a way to learn to shoot a bow without experiencing the problem you're having. You and so many like you have developed a very crippling mental thought disorder that no longer allows you to complete your archery shot sequence in a controlled manner. You'll have to scrap your current system, forever! You will have to adopt a new and different mental thought system that will allow you to complete an archery shot with a high degree of consistency and reliability. The system I'm talking about is called Back Tension and it will work for you because it requires a totally different thought process during the execution of the shot.

Your current process involves a trigger and, unfortunately, your conscious thinking has become engulfed by thoughts of the trigger and/or your finger touching the trigger and/or releasing the arrow. Back tension requires that you think about holding the bow with your back muscles and further tightening those muscles in order to execute the shot - there is no trigger on the back tension release aid. I'll teach you how to hold the release, get into proper full-draw-position and how to execute the shot with your back. When you leave my booth then you'll

have to get yourself a back tension release aid. I recommend a TRU Ball Sweet Spot II, and I suggest you continue practicing on a blank bale for weeks until you properly develop your muscles and your thought process. My Core Archery book and DVD show you how to do that and I encourage you to buy them but, regardless, I'm going to give you a free \$100 lesson right here, right now and get you started on your path to better shooting.

GROUP B: EQUIPMENT ISSUES

Why should I number my arrows?

(Mike, OH) Ans: Some arrows are flawed when you buy them but many get flawed after you shoot them awhile. If you don't number them you'll never know that one particular arrow shoots high-right from the others in your set. Number them and you'll be able to know when #6 arrow begins to shoot low; you may mistakenly think that you're shooting form is inconsistent when it's really a bad arrow causing the problem. I number every arrow that I own, even my hunting arrows. I prepare my set of hunting arrows with broadheads and test shoot them all so I know for sure what I'm getting for accuracy; don't set yourself up for a "surprise!"

My sight won't adjust high enough. What's the problem? (Marlow, MI) Ans: Most likely you need to install the sight mounting block in a different set of holes so the entire bow sight will be higher relative to the arrow. You may be able to do this by raising the sight-pin gang-block where it attaches to the horizontal sight extension. Another alternative you may try is lowering the peep sight location on the bowstring. If the peep is comfortable where it is then you may need a different bow sight that allows for a higher adjust range.

How should I fletch my hunting arrows? (Ben, IN) Ans: I always recommend fletching your arrows with a hard helical curve on each fletch. I do that for every arrow that I personally shoot whether it's for target or for hunting, so that the fletched end stabilizes the arrow and causes it to rotate about its axis during flight. The whole idea of installing fletching on an arrow is to create stabilizing air resistance so why not maximize that by using a curved helical clamp on your fletching jig?



Mark McDaniel of Illinois is demonstrating his skill at knapping flints. Victoria Kennedy watches as Mark turns a piece of flint into a finished arrowhead ready for display and for sale. This was one of the many demonstrations taking place at the Expos.

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Installing fletching straight in line with the shaft actually minimizes air resistance and allows the arrow to fly much like a non-spinning knuckle ball does in baseball; its flight is unpredictable making it difficult for batters to hit.

Why do I keep breaking my D-loop? (Jim, PA) Ans: What I see most often as the cause of breaking or fraying D-loops, Jim, is a sharp edge on your caliper release jaws. I see this quite often in August when the local guys are bringing me their bows for repairs. I use some emery cloth to round and smooth the edges of the jaws. I test them by scraping my fingernail perpendicularly across the edges to be sure they don't cut anymore. You can fix that yourself and eliminate your problem.

When aiming my bow the sight pins are always blurry. What can I do about my glasses to correct this situation? (Joe, IL) Ans: Looking through corrective lenses and using a sight pin/scope is always tricky. Because of the great distance between the sight pin and the target only one is going to be in focus. Focus on the target and use the corrective lenses that do that and allow the sight pin to be fuzzy or blurry. Switch to one pin and choose the largest pin you can get of the color that you see clearest in low light conditions. I use the .019 inch green fiber optic with a battery-operated sight light for after sunset and before sunrise. I'm thinking about switching to the .029 inch pin myself

but for now the light on the pin is doing the job. Another option would be to try one of the tiny Verifier lenses Specialty Archery makes for its threaded peep sights. The company web site can help you find a pro shop with a Verifier lens display you can try with your bow.

GROUP C: CROSSBOW

Why do the vanes come off my crossbow bolts? (Alex, IL) Ans: There could be several reasons. First, perhaps they were fletched without the bolt shaft or vane base being cleaned. I use acetone and a paper towel to wipe the surfaces to be glued. Second, the vanes may be making contact with the crossbow rail and that rips them off the shaft. I think the first case is the most likely so re-fletch your arrows being sure to clean them first. Shoot-test and if they stay on the bolt you're good to go. If they come off again then you may have to use a different spine shaft to eliminate the contact.

I'm using 22 inch bolts; can I switch to 20 inch? What about point weight? (Will, IL) Ans: In all probability you can. Check to be sure that the point of the 20 inch bolt will extend beyond the end of the arrow track and/or rest. The large majority of crossbows have only a 12 to 13 inch draw stroke so I'm reasonably sure you can safely make the switch. The point weight should not be a problem; however, the shorter bolt will act stiffer and may need a slightly

heavier point to get the very best arrow flight. So, if you are currently using a 100 grain point you may need to switch to a 125 grain point.

Can I switch to a lighter weight bolt that is less than 400 grains? (Jim, OH) Ans: I'd be careful with this one, Jim. Your crossbow's peak weight is at least 150 pounds and that is a serious "kick-in-the-behind" for the bolt. If the bolt spine is too weak then its flight will be very erratic just like with a handheld compound. I'd stay with the heavier bolt over 400 grains; get the good arrow flight and accuracy. Remember this, at 300 fps your arrow or bolt is only 1/4 the speed of sound (1125 fps) and beyond 30 yards the deer hears the sound and has sufficient time to "drop under" the arrow. We're still using a primitive weapon so your effective range is still under 30 yards. Don't worry about those long shots!

My groups are good to 30 yards and then they open up significantly. What can I do? Ans: I hear this often from hunters with all kinds of bows so you're not alone with this problem. Most of the time the problem can be found in the matchup between your broadhead and the arrow or bolt fletching. Far too many bolts and arrows have little or no angle on the fletching. To do its stabilizing job the fletching should be installed with as much angle to the shaft as is possible. I recommend that



I made two new friends at the Expos this year. This is Barb Terry of Ten-Point with Drake Taylor of Little "D" Designs (littledesigns.com) showing off his specially adapted Ten Point crossbow. He's really good with it as evidenced by the big gobble in the background. Wish I could kill a turkey like that!



Here's Dave Schroeder, Expo Sheriff and problem solver, holding a pack of 1980 Savora broadheads to match the six-times enlarged version I have on display at my Archery Answer Man booth. During the four Expos this year only three people could identify my big broadhead. Of course Dave knew because he had a pack of them in his collection.

you use a "helical curve" clamp so that the vane or feather can create sufficient air resistance at the back end of the shaft to allow it to control and guide the flight. Too little air resistance on the back and at some distance the broadhead takes over the steering, in your case beyond 30 yards.

FINAL QUESTION: This is a real question asked by a dad with no archery experience but wanting to help his son. We can't assume that our customers know the basics so keep teaching them every chance you get.

My son shot a deer but the point barely stuck in it and we never found the deer. A guy told us that my son used the wrong broadhead - he used a Guillotine. What can you tell me? Ans: I can tell you that he indeed did use the wrong broadhead. The head he used is designed specifically for hunting turkeys and not for deer. You need a broadhead that has a point with angled blades so that it penetrates the deer's body. There are many available that have fixed replaceable blades or that open on contact. If your son is shooting under 50 pounds peak weight then I'd recommend a smaller fixed-blade broadhead that weighs about 85 grains. Have him practice and sight-in with two or three of them and then replace the blades and use them for his hunting arrows. Use the practice blades in several other broadheads for his in-season shooting practice. Oh yes, make sure he restricts his shooting range at



Of all the taxidermy displays this was my favorite. It's so realistic that it looks alive. I hope the owner emails me so I can know who to credit for this magnificent work. See more at next year's Expos.

deer to under 25 yards. Have your son do this and he'll find the next deer he shoots. Good luck.

CONCLUSION

Consumers have all kinds of questions. I was amazed at them myself as I went over my notes from each expo. Archers come in all shapes and sizes with questions (and misunderstandings) all over the map. As a classroom teacher for 35 years I have learned to ask the right questions to help me understand each archer's knowledge level after he asks his or her question. A good policy is to assume they know nothing and begin educating them with accurate information.

I still get a kick out of breaking a nock or two when I'm shooting and I still get a great deal of satisfaction out of giving an answer and getting a "Thank you, I'll try that" as the archer leaves my show booth. Each expo is three days of hard work, but worth it!

Keep well. Shoot straight.

Larry

Editor's Note: Larry Wise is also available to conduct one and two day Core Archery Academies on shooting form. Reach him by email at larry@larrywise.com or call him at (717) 436-9168.

Larry has completed his new DVD titled Core Archery Back Tension: Defined and Demonstrated. The DVD is available at 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. 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.



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Equipment Focus

SELLING SIGHTS THAT FIT MOST ANY BUDGET

Let's face it. Many hunters who buy a new bow don't look to dress it out with the highest priced accessories. On the other hand, they don't want the least expensive rest or sight either. For most of them, the middle of the road is good enough and fortunately rests and bow sights in the middle price range provide excellent value.

Bow sights have seen drastic improvement since I first taped a stamped metal bracket with three adjustable sight pins on the riser of my bow more than 40 years ago. To see the pins better, I dipped them in white model paint and after it dried, dipped them again in fluorescent orange. My innovation was a big improvement over the unpainted pin ends and it helped me bag several deer.

The first time I saw a fiber optic pin sight I was ecstatic. Finally, I could easily see the pins on my sight but that convenience came with a price. The early fiber optic pins were fragile and I can't count how many I replaced because I often managed to bend or break one or even several during the

course of the season.

Over time, individuals and companies saw the need to produce a rugged, easily adjustable bow sight with highly visible pins. Today, shooters have dozens if not hundreds of sights from which to choose and even moderately priced bow sights are stronger and more easily adjustable than those produced in the past. Since a moderately priced bow sight is arguably an easier sell than one costing nearly \$200, we decided to take a look at what the major bow sight manufacturers are offering in what we might call a moderate price range. What we found are numerous high quality sights being offered at a reasonable price and they are stronger and often brighter than those previously offered. This translates into a more accurate aiming system for your customers and more success for them in the field. For this article we've purposely left out the higher end bow sights since these were featured less than a year ago in the September 2011 issue. Let's take a look now at what's available in that middle of the road price line.

Apex Gear

Apex Gear, a related company of TruGlo, produces high quality, affordable bow sights with features appealing to many shooters. The company's new Gamechanger Series offers a five pin sight system with a pin design that minimizes pin gaps. Extra long optic fibers are routed through the sight bracket providing increased durability and maximum exposure to ultra violet light. The Gamechanger also offers ultra fine click adjustments for both windage and elevation without



Hunters will like the ultra bright pins, and large, 1.8 inch inner diameter aperture with a glow-in-the-dark shooter's ring of the Axim Series pictured here. An adjustable third axis level with two vertical bars aids in precise bow alignment.



Apex Gear's new Gamechanger Series features the new Tru-Zero pin design that minimizes pin gaps. Extra long fibers are shown here routed through the mounting bracket for increased durability and exposure to ultra violet light. An adjustable second and third axis level is incorporated into this sight and the bracket is reversible to allow greater vertical adjustments. It is available in a five pin configuration and an adjustable micro push button light is included.

The new Axim Series by Apex Gear offers shooters a four or six pin model with either .010 or .019 inch diameter pins.

The unique dual end fiber design allows for increased pin brightness and compact size. Shooters will like the ultra fine windage click adjustment and the soft feel of the Tru Touch coating. A new Lens Kit is available that includes a 2x magnification lens, two O-rings and a cleaning cloth.



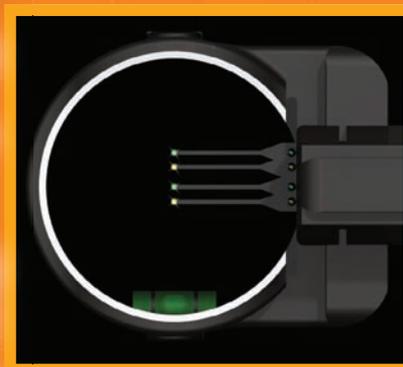
Mid-Priced Bow Sights

by Mike Raykovicz

Tool free adjustability, a Tru-Zero pin design, and a new extended bracket are just three of the features found in the Accu Strike Pro Series by Apex Gear. The Accu Strike Pro is CNC machined for toughness and its special light location allows for more effective light distribution to the .019 inch fibers. The Tru Touch Soft Feel Technical Coating adds durability and quiets sound. This sight is available in black, Realtree APG, Realtree AP, and Lost Camo patterns.



The aperture of the Accu Strike Pro by Apex Gear has a 1.8 inch inner diameter and a glow in the dark shooter's ring. Extra long fibers routed through the bracket provide maximum brightness while an included micro push button light aids in pin placement under low light conditions.



the need for tools. The 2 inch inner diameter of the aperture gives shooters a large field of view while a glow-in-the-dark shooter's ring assures quick aiming under low light conditions.

Jeff McNail, vice-president of product development, told *ArrowTrade* even though the Gamechanger is loaded with features, its biggest asset is once it is sighted in, the pins can be reconfigured for color combination without taking the sight apart. "A junction connection at the base of the pin allows the shooter to disconnect the fiber at the pin and then reattach it in any color combination they choose," McNail told us. He also noted the innovative design of the Tru-Flo fiber allows quick and easy fiber replacement if it ever becomes damaged.

McNail explained the sights in the Axim Series are moderately priced and

loaded with features that include micro stainless steel tubes to protect fibers, an ultra-fine click adjustment for both windage and elevation, an aperture with a 1.8 inch inner diameter that will accept a 1.87 scope lens and an included micro push button light. The sights are available in either four or six pin models and are available in black, Realtree APG or Lost Camo.

The Accu-Strike Pro Series has several features not found on the Accu-Strike Series including the new Tru-Zero pin design that minimizes pin gaps, an extended mounting bracket and tool free adjustability. The Accu-Strike is available as a four pin model while the Accu-Strike Pro comes with a five pin configuration. Both models feature the Tru-Flo fiber design that provides a brighter pin and easy access to the fibers.

McNail noted the new Tundra Series is low in cost but high in value.

The Tundra features a compact design coupled with an ultra-tough composite construction. The sight has an innovative pin design that improves the sight picture and protects the fibers. If by any chance a fiber is damaged it can quickly and easily be replaced. The Tundra is available in Black, Realtree APG, Lost AT, and Realtree AP camouflage colors. Contact Apex Gear at (972) 437-9181 for more information.

TruGlo

This year TruGlo introduced the new TSX Pro Series sight based on the original award winning Tru-Site Extreme Series. The TSX Pro Series Micro Adjust models offer ultra fine click adjustment for both windage and elevation while the pins are enclosed in durable steel tubes that ensure they won't be damaged regardless of hunting conditions. To aid in quick target acquisition, the aperture has a large, 2 inch diameter. An adjustable two axis level with two bars aids in precise bow alignment. The TSX Micro Adjust

The CNC machined TruGlo TSX Pro Micro Adjust Model features a reversible bracket for greater vertical adjustability and tool-free micro adjustment. This sight includes an adjustable rheostat light to reduce pin glare and a second and third axis level that is illuminated by luminescent tape for added visibility. The pin diameter of both the five pin and seven pin models is .019 inches in diameter.



The TSX Pro Series sight by TruGlo is only available in a five pin model with .019 inch pins. It offers tool free adjustability and comes in Black, Realtree APG and AP as well as Lost Camo.



model comes in five or seven pin configuration and is adjustable for left and right handed shooters.

The second model in the TSX Pro Series offers tool free adjustability and a unique stainless steel tube pin design for increased durability and brightness. The 2 inch inner diameter of the aperture, surrounded by a glow-in-the-dark shooter's ring, provides shooters with a large circular field of view. Windage and elevation adjustments are clearly marked and an included rheostat light adjusts to reduce unwanted pin glare.

The Standard is TruGlo's last new offering in the TSX Pro Series and like the other sights in this line it features Tru-Touch, a soft feel coating that adds durability while reducing noise. The Standard model is available in a three or five pin configuration and features an adjustable second and third axis level illuminated with luminescent tape. The Standard is just as rugged as the other models in this line and is CNC machined to be ultra strong and lightweight. It is adjustable for both right and left handed shooters.

The TruGlo Range Rover may be one of the brightest single pin archery sights on the market. An extra long optic fiber is wrapped in a non-glare housing for greater visibility and the aperture has a 1.8 inch inner diameter. A glow-in-the-dark shooter's ring helps center the peep sight while the glow-in-the-dark yardage tape aids in placing the pin at the exact shooting distance. The Range Rover has a CNC machined

ultra-light and compact frame, while the vertical adjustment allows it to fit virtually all bows. This sight is adjustable with one hand while an incorporated bubble level with two vertical bars aids in precise aiming. Reach TruGlo at (972) 774-0300.

HHA Sports

HHA is noted for offering high quality movable single pin archery sights and according to HHA's National Sales Manager, Chris Hamm, all models in the Optimizer Lite Series are constructed from 100 percent machined aluminum to make them lightweight as well as extremely rugged. These sights offer tool free adjustability, micro windage adjustment and a green sight ring for easier target acquisition. Hamm noted the OL-5019, OL-5519 and OL-5219 are the company's best selling models and have been for a number of years. All of them can be fitted with a lens kit and Blue Burst light to aid in shooting under low light conditions.

Hamm said models XL-5519, XL-5019, and OL-3019 are moderately priced and lightweight. The XL-5019 and OL-3019 weigh only 8 ounces while the XL-5519 weighs only an ounce more. The XL-5019 and



The new Flash Point by Black Gold is constructed from 6061 T6 machined aluminum and has vertical calibrated gang and horizontal micro gang adjustment capability. The sculpted base has an oversized clamping dovetail to ensure things stay in place. The Flash Point is available with 4, 5, or 7 machined micro grooved pins and comes in black or an anodized camouflage pattern.

XL-5519 models accept a lens kit and a Blue Burst Light for pin illumination but the OL-3019 does not. Hamm noted all HHA sights include 43 color coded tapes designed to accommodate today's fastest bows. By simply sighting in at 20 and 60 yards, the fool-proof sight-in tape assures the shooter the correct tape selection for any draw length, bow speed or shooting style. Hamm said the yardage tapes are accurate within 1/4 of an inch at point of impact. Contact HHA at (715) 424-8080 for additional information.

Black Gold Sights

Black Gold hunting sights are popular among hunters because of their pin brightness. The exclusive SkyCoil technology used on Black Gold sights gathers 300 percent more light, while the patented PhotoChromatic Technology automatically manages pin brightness during bright daylight



HAA's model 5019 Optimizer Lite features a CNC machined aluminum frame with A.M.O.R. pin technology. This sight offers 3 feet of wrapped .019 inch fiber optic enclosed in a 1-5/8 inch housing and tool free micro windage adjustability. It is available in right and left hand models.



HHA's Optimizer Lite model 5519 has 6 feet of fiber optic and a large 2 inch sight housing. An exclusive mechanical rheostat feature allows a shooter to adjust pin brightness in seconds. It is available with .010, .019 or .029 inch fiber.



With Black Gold's Rush, shooters have a choice of either a four pin model with a Standard 1-3/4 inch guard or, for those who prefer shooting with an oversized peep, a three pin model with the new 2.0 inch BigDog pin guard. The Rush provides shooters with many of the innovative features found on other Black Gold sights but at a more modest price. Interchangeable fluorescent sight rings offer quick and positive peep alignment even under low light conditions. This sight features a compact head and Black Gold's pin brightness managing PhotoChromatic shell.

hours. Managing pin brightness is critical for accurate shooting because most bowhunting opportunities occur early in the morning or toward evening as dusk approaches.

According to Dustin Wardell, Black Gold's national account manager, independent tests show the pins on Black Gold sights are 20 percent brighter than the pins on the next brightest bow sight tested. Wardell said a hunter will be able to see the pins on a Black Gold sight when the pins on other sights have faded away.

SkyCoil Technology used on Black Gold sights has the coiled fiber optics residing in a housing mounted on top of the sight where more visible light naturally falls. According to Wardell, this system is three times more effective at gathering and transferring light than other wrapped fiber bow sights.

Another innovative feature of Black Gold sights is the PhotoChromatic shell that manages pin brightness. This patented shell covers the fiber optic strands and turns purple when it is subjected to natural ultraviolet light. This automatically dampens the light and eliminates pin flare if the light is too bright. As the natural light dims, the shell becomes clearer to allow for maximum light penetration and brighter pins.

Wardell said the FlashPoint HD may be the best sight for its price on the market. It features an adjustable level for more accurate shooting and inch wheel windage micro adjustment.

The Rush SD is built for those with a short draw length and is made of 6061 T6 machined aluminum. It offers vertical as well as horizontal calibrated gang adjustment and is available in black or an anodized camouflage pattern.

It has a low profile PhotoChromatic shell and a light gathering SkyCoil

that provides super bright pins. The FlashPoint HD offers fluorescent interchangeable guard rings and shooters can pick their color from five different color offerings. This sight has a vertical calibrated gang adjustment and horizontal micro gang adjustment. It is available this year in a four, five or

seven pin configuration.

For less than a hundred dollars, the Rush offers hunters all of the innovation and durability built into Black Gold sights, including PhotoChromatic Technology and SkyCoil light gathering capability. The Rush features a new BigDog pin guard for use with oversized peep sights and tough one piece Micro Groove pins. This sight is available in a three, four, five or seven inch pin configuration and comes in

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The aperture of the Cypher Micro 7 and Micro 5 (shown here) is surrounded with a contrasting Glo Ring with spectral distribution technology that helps the shooter effortlessly align the peep to the ring. The Cypher Micro 5 comes in black or a Realtree APG camo pattern.

either black or an anodized camouflage pattern.

For women, youngsters or anyone with a shorter draw length, the Rush SD is the sight to show them. This sight has all the premium features of other Black Gold sights but is designed with a “drop bracket” that lowers the sight housing a full 1-1/2 inches. For shooters with a short draw length, this design allows them to locate their pins in the middle of the sight and not run out of room with their long range pins. The Rush SD is made of 6061 T6 machined aluminum and comes with three, four, five or seven .019 inch pins. To find out more contact the company at (406) 388-9060.

Trophy Ridge

The Cypher series of sights from Trophy Ridge utilize a revolutionary Ballistix CoPolymer material

that provides the strength of aluminum with 25 percent less weight. These sights feature Zero Pin Gap spacing for perfect pin alignment even from the fastest bows. The sights in the Cypher Series also include a reversible sight mount so the sight can be utilized by both right and left hand archers and has enough adjustment for archers with extremely high or extremely low anchor points. According to Trophy Ridge Marketing Manager Jason Pickerill, the sights in the Cypher series are lightweight, yet ultra



Shooters don't have to spend a lot of time sighting in because Cypher Micro Series sights have ultra precise micro adjustment and handy tuning reference marks (shown here) to precisely adjust each pin. No tools are required because the large thumb knob makes windage and elevation adjustments possible even when standing in a tree stand.

tough. “Ballistix CoPolymer is a material very similar to what is popular on high-end assault rifles right now. We don't introduce a new product just to have a new product, it has to be better than what it is replacing, it has to be more advanced than the previous



The moderately priced Outlaw bow sight by Trophy Ridge has all the essential features shooters are looking for to have a successful hunt. Aluminum brackets and a composite pin guard makes this sight lightweight yet strong.



The Trophy Ridge Hitman series offers some really innovative features in an inexpensive sight. The Hitman comes in 7, 5, and 3 pin models, with all aluminum construction for extreme durability. The clear front fiber optic ring provides ultra bright pins and a rugged hunter friendly design. The Sight Light Housing accepts the exclusive Trophy Ridge Rheostat Sight Light (included) and channels the light through the fiber optics. This Micro Hitman 7 and the Micro Hitman 5 offer micro pin adjustment using nylon bushings for smooth movement and to prevent binding.



Trophy Ridge Hitman 3 offers three ultra bright fiber optic sight pins and a sight level with third axis adjustability. A rheostat sight light is included.

year's product," Pickerill told us.

The seven pin Micro Cypher 7 and the five pin Micro Cypher 5 come with a rheostat sight light and ultra bright .019 inch pins. Both feature tool free ultra precise micro adjustment for quicker sight-in sessions and tuning reference marks for accurate and consistent pin adjustment. Hunters will appreciate the No-Snag fiber routing that keeps fiber optics protected from damage.

The Cypher 5 and Cypher 3, available in black or Realtree APG, have all the features of the Micro models, except micro-adjustability. They weigh only 6 ounces and feature a soft touch coating that helps keep the sights quiet while dampening vibration. Multiple pin holes in the mounting bracket allow for customization of pin gaps and provide the correct peep sight to sight pin aperture fit.

The Trophy Ridge Micro Hit Man 7, Hit Man 5 and Hit Man 3 horizontal pin sights provide hunters with precision, stealth and accuracy. These sights are packed with features including a reversible sight mount designed for use with right and left hand bows and a rheostat sight light with 100 percent aluminum construction. The five or seven pin Hit Man models offer Micro Adjustment and are available with .010 or .019 inch fiber optic pins. All three sights in this series have zero pin gap spacing and third axis adjustability.

When it comes to matching



The ultra bright sight pins of the Trophy Ridge Outlaw are wrapped around the sight housing to allow maximum light exposure and to keep the fiber safe from snags in the field while a high contrast glow ring aids in precise pin placement.

performance to price, the Outlaw by Trophy Ridge may be hard to beat. According to Pickerill, no other sight in this category can match the Outlaw's ultra-bright pins and other added features. Each pin has 8 inches of .019 fiber optic while the built-in sight light housing channels light directly into the fiber optic pins. This sight is designed for use with left or right hand bows and a sight light is included.

Pickerill said the Punisher 5 and

Punisher 3 may be considered entry level sights, nevertheless they offer shooters field replaceable pins and lightweight aluminum brackets. Both sights surround the .029 inch Fiber Optic Pins with a Contrast Glo Ring for easy sight acquisition while rock solid lock down features ensure the sight will remain in place regardless of hunting conditions.

Some shooters like vertical rather than horizontal pin sights because they

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The Vertical In-Line Pin technology of the Micro Alpha V3 by Trophy Ridge offers shooters a 98 percent unobstructed field of view. The fiber optic ring surrounding the aperture soaks up every bit of available light, while the No Snag fiber routing system keeps sight fibers safe from damage. An adjustable sight mount allows the shooter to adjust the distance of the sight from the riser for optimum shot accuracy and clarity.

provide a less obstructed view of the target. The Alpha V3 Series sights with exclusive Trophy Ridge Vertical In-Line Pin Technology provide a 98 percent unobstructed view of the target and, according to Pickerill, it is the clearest, most unobstructed view available on any sight. In addition, the distance of the sight from the riser can be adjusted for optimum shot accuracy and clarity. The Micro Alpha V3 comes with a rheostat sight light. Both the Alpha V3 Micro and the Alpha V3 have an aluminum sight housing and ultra bright .019 fiber optic pins.

The Trophy Ridge Firewire V3 is an ultra lightweight design with Vertical In-Line Pin technology. It features the same rugged precision as the Alpha V5 including ultra bright .019 fiber optic pins and a sight level with third axis adjustability. A front Fiber Optic Ring soaks up every bit of available light while the No-Snag Fiber Routing System keeps pin fibers safe from damage that can occur in the field. There is no need to tighten or loosen set screws to adjust a pin because each pin can be

adjusted individually using a hex wrench. This feature can be found on all Vertical In-Line Pin sights offered by Trophy Ridge.

Rounding out the company's line of moderately priced bow sights is the single pin Pursuit. This sight offers shooters smooth, silent adjustment and limitless pin settings. The indicator pin is adjustable, allowing a shooter to make the small tweaks necessary to compensate for various environmental conditions. Delrin bushings provide smooth, quiet movement because there is no metal-to-metal contact. A rheostat sight light is included and the pin contains 14 inches of .019 fiber optic. Trophy Ridge can be reached at (812) 467-1200.

Extreme Archery

Extreme Archery Products has a wide line of bow sights including several that are priced to retail



The Firewire V5 is a moderately priced, durable bow sight. This sight features the same rugged precision of the Alpha V5 including the exclusive Trophy Ridge Vertical In-Line Pin Technology that gives the shooter a 98 percent view of the target. Each pin can be micro adjusted individually using a hex wrench.

under the \$100 mark.

The Diablo is a four pin all aluminum sight priced to retail at \$39.99, a price level where sights typically are made of plastic. The pins are mounted in a single vertical plane and are powered by extended length fibers in the popular .019 size. There are laser engraved indicator marks for windage and elevation, and a Blue Flame light is included in the package.

For just \$10 more, you can sell customers the three pin Tundra with its adjustable rheostat controlled Purple Haze light. The bright fiber optic pins



The 100 Rubicon from Extreme Archery Products has its Purple Haze light mounted on the side to illuminate both the fiber optic aim points and the orange centering ring.



The new Raptor DT from Extreme Archery Products combines the popular Raptor wireframe housing with a 6 inch dovetail mount. This 911DT model offers tool-free adjustability.



Extreme Archery Products has been licensed by Mathews to use the Z-Lock. The mounting bracket is machined to match the Gridlock risers from Mathews. The sight snaps on and off the bracket under the tension of precisely machined metal mounting surfaces: There is no thumbscrew to loosen on this system.

are sized at .029 for close range shots, then .019 for the middle and bottom pins.

In the \$55 range Extreme offers the new 100 Rubicon. Again an adjustable Purple Haze light is part of the package but here the light illuminates not

only the four pins but the bright fluorescent orange centering ring as well. Designed for sale through Mathews retailers, the Rubicon can be ordered with either .019 or .029 inch pins. The fiber optics are shrouded by tough stainless steel and are easy to change if replacement is ever needed. Finish options include a satin black anodize, Mathews Lost Camo or the Lost A/T Camo used on Mission bows.

The Z-Lock sights from Extreme Archery were developed under license from Mathews and are designed to mate perfectly with the Gridlock risers from the Wisconsin bow builder. "When the Z-Lock is viewed from the side it looks like it was machined with the bow riser itself," Extreme Archery Products President Mark Whitt said. "We've even added the interchangeable Harmonic damper to the sight housing to complete the package." The Z-Lock has tool free adjustments for windage and elevation and a retail price starting at \$89.99.

Any retailer can order the Raptor DT, a new model which uses the popular Raptor series wire frame housing along with a 6 inch removable dovetail mounting system. Here the adjustable light is located to feed the fiber optic and illuminate just the tips of the four pins, which are a full-capture style. The fibers run in a clear tube all the way to the rear of the dovetail mount and into the Purple Haze light where the rheostat control faces the hunter and is easy to adjust as he looks through the sight. Dealers can choose the 911DT, a tool-free version designed to retail for \$94.99, or the 950DT micro-adjust model retailing for \$114.99. Extreme Archery also builds a 911 Raptor with many of the same features, including tool free adjustability. The direct



The Fiber Tech sight by Impact Archery has 1 foot of .030 inch fiber optic wrapped in a protective spool and a high impact black polycarbonate pin guard. It is available in right hand only and comes in either black, Realtree AP or Lost Camo patterns.



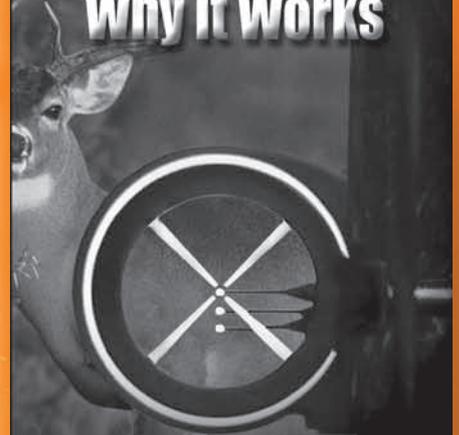
With a lightweight, compact design, the Spirex Series by Impact Archery will appeal to many shooters. This sight features 3 feet of .020 inch fiber optic and CNC machined all aluminum construction. Dovetail windage and elevation adjustments makes changing sight settings easy and accurate. It is left hand adaptable and blue light adaptable.



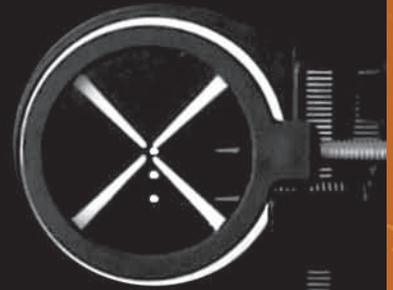
The Air Lite Series by Impact Archery offers CNC machined aluminum construction and contains 20 inches of .020 inch fiber and a metal pin. A dual track slide with three adjustable markers makes adjustments easy while a single lock down knob keeps settings securely in place. An optional sight level and blue light are available as well.

Hind Sight

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Hunters want to be able to see their sight pins under low light conditions and the engineers at Sims Vibration Labs have developed a light collection lens system that loads ambient light directly into the end of the fiber optic material of the LimbSaver Prism-Lite sights. End-loading fiber is by far the most efficient way to transfer the light source to the end of a fiber-optic pin. In addition, the collection lens system is the only technology available that will take natural ambient light, from anywhere above the horizon, not only directing it to the fiber end but intensifying the natural light in the process. This sight weighs only 4.4 ounces and comes in next generation G-1 camouflage or a soft matt black finish.

mount (non-dovetail) means you can retail that model for under \$75. Reach the Kentucky manufacturer by calling (606) 928-9447.

Impact Archery

Impact Archery is constantly challenging the rules of modern archery sight design. According to company owner Bahram Khoshnood, the company takes great pride in its ability to provide their customers with dependable, affordable and precision made products featuring state-of-the-art technology. Currently Impact Archery offers nearly 40 bow sights at a variety



The all new Buckhead sight series from Cobra is available in Lost Camo, Realtree AP and Black. All Buckhead models have a hooded guard and come with a light. This sight is available as a 3 pin, 5 pin or a tool free adjustable model.



The three pin Prism-Lite sight by LimbSaver has a 2 inch peep alignment sight ring with leveling bubble and a durable, non light reflecting sight housing. It is available in black only and comes with .019 fiber optic pins. It also features the LimbSaver Light-Trap Collection Technology that intensifies pin brightness during all light conditions.

of price points.

Khoshnood told *Arrow Trade* that Impact's Fiber Tech sight is moderately priced yet contains many features found on sights priced significantly higher. The Fiber Tech has a standard three pin construction with room to add more pins if a shooter desires. It is the only fiber wrapped pin sight on the market with a five year warranty on the fiber optic pins. The Fiber Tech Sight is a CNC machined aluminum direct



With the Peep Eliminator rear hunting sight there is no need for a string peep or even a kisser button. Hunters can shoot accurately from any angle and can shoot greater distances using fewer pins. The Peep Eliminator can be used with any front pin sight and accepts an optional purple rheostat light. It is made from black anodized 6061 T6 aluminum and weighs only 3 ounces. Tru Glo fiber optic alignment dots are recessed for protection.

wrapped and encapsulated in each spool. Optional accessories include a level, blue light and additional pins.

The new Spirex Sight is another moderately priced model and features a lightweight compact design with three feet of .019 inch fiber optic wrapped securely away in a unique position behind the pins. This sight with 100 percent machined aluminum construction is left and right

hand adjustable. Dovetail windage and elevation adjustments make for easy sight-in and the housing is adaptable for a blue light.

Impact Archery's Air Lite Cosmic Ring Adjustable Sight is compact with a low profile design and comes with a no-play dual lock system. Khoshnood explained an exclusive dual track slide and 20 inches of light gathering fiber optic coupled with CNC machined aluminum components make this sight

one of the best values for the price on the market. More information can be obtained by calling (770) 521-9173.

LimbSaver

According to Simms Marketing Manager, Alan Lotton, Prism-Lite



The Peep Eliminator sight light is an optional accessory and comes with a mounting bracket for easy installation. It's rheostat controlled.

Bow Sights were designed to answer the demands from today's bowhunter. Prism-Lite sights are tough, rugged sights that incorporate the unique Light Housing System that collects light and then super-loads the fiber optics driving the light into the sight pins. Lotton said the system is so efficient the sight pins are highly visible even during the darker hours of early dawn and late dusk, the times when most game are moving.

The Prism-Lite weighs just 4 ounces and is available in 3 and 5 pin models with either .019 or .029 diameter pins. Each model comes with a bubble level and circular pin guard with peep alignment ring for easier sighting and faster sight picture acquisition.

"The Prism-Lite Sight System is high quality, bright, easy to adjust and stresses value," Lotton explained. "With these sights you can have it all and not have to go without dinner. These tough sights are designed to help hunters extend their time in the field and provide the accuracy they need to make that perfect shot. In addition, these sights feature a durable, non-light reflecting surface available in black and camo," he added. To find out more, contact the Washington state company at (360) 427-6031.

Cobra

Cobra bow sights are familiar items on dealer's shelves and for good

reason. The company has been around for a long time and has a reputation for producing high quality sights at moderate cost. Over the past several years Cobra has purchased top quality equipment and hired skilled operators to machine their own parts. Currently, the company manufactures over 90 percent of their parts in-house.

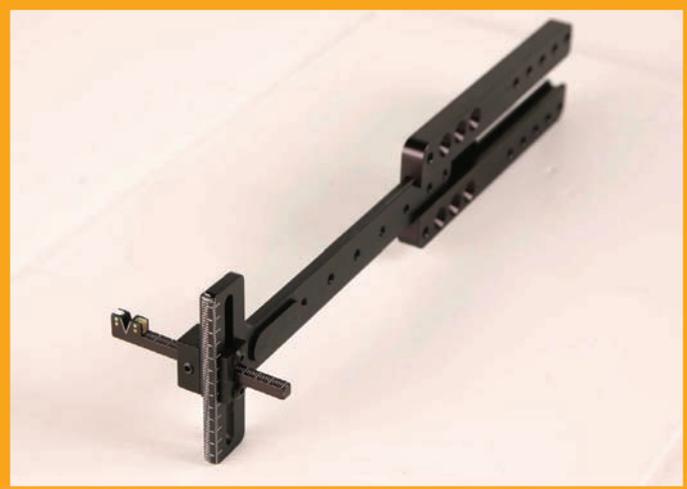
This year hunters can make the most of their buck with the all new Buckhead sight series. The new Buckhead sight features a 2 inch hooded housing for glare reduction and optimal view of the target. It is designed with a reversible mounting bracket for greater adjustability and features a universal design for both left and right hand shooters. Cobra's newest sight is equipped with super bright, protected all-metal pins with .019 inch fiber optics and has a rheostat light for quick pin acquisition in low light conditions. An adjustable third axis bubble level is included for precise bow alignment. Sight options include models with gang or tool free adjustability and three or five pin configuration. All models are available in Black, Realtree AP or Lost Camo. Contact the Eules, Texas headquarters at (918) 366-3634.

Peep Eliminator
When taking

aim at a target the alignment of the eye and sight pin is crucial for accuracy. This eye, pin, target alignment is done almost exclusively with the front pin and a peep sight served into the bow string. Melvin Deien has taken an alternative approach to using a string peep to align the sight pins with the eye and has developed a v-notch rifle sight that mounts toward the front of the bow between the bow riser and the front sight.

The Peep Eliminator comes in three versions. The original design has a T mounting bracket with two slots at the front that mounts between the bow riser and the existing front sight. It has a 1 inch slot with a vibration dampener and a longer slot at the rear to attach the rifle sight. The second version is called the Extender Peep Eliminator model and allows the shooter to extend the front and rear sight to the maximum distance the bow will allow for more rifle-like accuracy.

Finally there is the Dominant Eye sight that allows an archer to shoot a right hand bow and aim with their



The Extender Peep Eliminator rear compound bow sight extends the distance from the front to rear sight to 17 inches for greater accuracy. It has an ambidextrous design for shooting a multiple pin or pendulum sight. TruGlo green dots flanking the v-notch provide rifle like aiming making shots potentially more accurate.

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The Copper John Mark I micro sight comes with five .019 inch pins and a standard bracket. A black dovetail extension mount, micro adjust lead screw kit, and a second axis bracket are offered as accessory items. The optional Micro Adjust kit moves the entire sight block with a windage and elevation knob in micro movements.



The five pin Mark III standard micro bow sight is available from Copper John with a standard bracket or with an optional dovetail extension mount. It has laser engraved lines for easy sight adjustment and is predrilled for right or left hand shooters. It is available in Mathews Lost Camo or Realtree patterns.

left dominant eye or vice-versa. It too can be extended like the Extender sight. If necessary the Extender and the Dominant eye sight can be removed as a complete unit and, when bolted back on the bow, they will shoot dead on. Deien says all Peep Eliminator rifle sights are designed to obscure the front pin if the shooter torques the bow or has their head in the wrong position. "They know immediately if their form is wrong and can correct their mistake before they shoot. The shooter can correct their mistake in seconds and make an accurate shot," he explained. Other advantages include the elimination of a string peep and sight level and the ability to shoot further using fewer pins.

Deien said he doesn't know of any rear alignment sight on the market that will do this. "With the Peep Eliminator a hunter can shoot with consistent accuracy from any angle or position and the bow will shoot faster and will be quieter," he added. For additional

information about this product contact the company at (618) 526-4427.

Copper John

Last year, Copper John hired ten new outside sales representatives resulting in a huge increase in the company's distribution base and sales volume. According to company co-owner Doug Springer, the company depends on feedback from dealers and shooters to tweak their products and business strategies. Last year Copper John included the new MicroDOT fiber lens technology into their line of hunting sights and it proved to be a big success for the Auburn, New York company.

According to Springer, MicroDot technology offers a precise aiming point while maintaining industry leading fiber durability. "The MicroDot enables an increase in light transfer and eliminates the "halo" effect found in other sights," he told us.

Springer said one of the outstanding features of the Mark I and Mark III hunting sights is the Easy Glide Technology for pin adjustment. "Pin tracks can easily deform when sighting in a new bow and the large, aluminum clamping surfaces on our pin tracks prevent pin track damage. A large Allen head size ensures that the adjustment screw won't be stripped when tightening the pins into position," he explained.

Both the non-micro and micro adjustable Mark I models are outfitted with aluminum pins with IronClad

fibers and MicroDot Technology for extreme durability and brightness. The non-micro adjustable Mark I models come in a three or five pin configuration with either .019 or .029 inch fiber pins and a free After Burner Light. The Mark I micro-adjustable model comes in a five pin configuration with .019 inch fiber and a free light. Glow in the dark tape illuminates the third axis level under low light conditions, while laser engraved lines allow easy and accurate sight adjustment.

The Mark III series comes in a .019 inch five pin configuration with either non-micro or micro pin adjustment capability. The bracket is made from CNC 6061 aluminum for lightness and strength and dealers will like how the pre-drilled holes in the mounting bracket allow for easy conversion for left handed archers. All Mark I, II, III and IV models come with a free After Burner light. For additional information contact the Auburn, New York company at (315) 258-9269.

Hind Sight

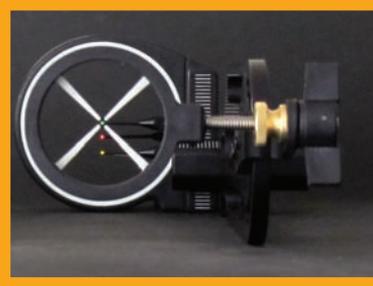
Most archers use a peep sight as an aiming aid but sometimes it can be problematic because a peep sight can rotate on the string or have a very small aperture which sometimes can make seeing the target difficult. Few would disagree a peep sight served into the bow string is critical for shooting accuracy but it can reduce arrow speed and this is important for many shooters. Using a larger diameter peep

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Designed to eliminate the need for a string peep, the Hind Sight Eclipse features a dual sighting system that is attached solidly to opposite sides of the riser, just above the bow handle. When taking aim, looking through the Eclipse feels like looking through a scope. The Eclipse employs Circle Alignment Technology (C.A.T.) that takes the concept of a scope to the next level. The Eclipse is right and left hand reversible, weighs 7.8 ounces and is available in 3 and 5 pin models.



allows a shooter to see the target better but it can diminish the level of shooting accuracy because the front pin is floating inside a larger circle. The Hind Sight, with its patented peep sight forward design, addresses both issues because the aperture created by the open center cross hairs is a very tiny .060 of an inch and provides pin point accuracy. The cross hairs glow in the dark and remain visible even in total darkness. Unlike a string peep, the rear aperture of the Hind Sight is located far forward of the eye so it does not restrict light from entering the eye. This allows archers to take aim under the dimmest light conditions.

Rather than using the string, the Hind Sight securely attaches the secondary sight to the riser making all common peep sight problems disappear. Arrow velocity is increased because there is no more string drag created by jumbo peeps or rubber tubing. The string will now work as intended, launching arrows as it was designed

to do with less wear and tear and longer string life. The Hind Sight is available as a complete sighting unit or as an add on accessory for an existing sight set up.

According to company President Don Priebe, the Hind Sight eliminates the need of a string peep, increases arrow speed, prevents bow torque and forces a consistent bow hold. For additional information contact the company at (734) 878-2842.

Summary

Bow sights have improved a thousand fold since I first taped one on my bow 45 years ago. Bent or broken fibers are almost a thing of the past and adjustments can be made in seconds. What's more, sight pins now gather all available light and are visible under very low light conditions. The sights themselves are rugged and can stand up under severe conditions. All this translates into increased sales for dealers and better equipment for their customers.



The Hind Sight Ghost Rider features a dual sighting system on a compact, 6061 aluminum, CNC machined frame that places the sights about 7 inches apart. The Magnum rear sight is paired with TruGlo's Tru-Site Xtreme, small diameter pin head assembly. This sight features extremely bright, extra long, protected, fiber optic sight pins in a medium .029 inch pin size. Dual pin rails offer precision pin alignment while a glow-in-the-dark shooter's ring and bubble level provide optimum pin alignment. A bonus Ultra Violet LED light is added for less pin glare.

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DEALERS WELCOME

Special Report

Using Social Media to

Social media definitely are “in.” Facebook, Twitter, LinkedIn and YouTube all have millions of followers; smaller sites such as ArcheryTalk, Bowhunting.net and a plethora of blogs have fewer but no less dedicated readers.

If your store doesn't at least have a Facebook page, you're behind the technology and communication curve. Statistics indicate that as many as 53 percent of businesses now are using some form of social media to connect with their customers, and 88 percent of those cite exposure to current and potential customers as the biggest benefit of using social media. In fact, the National Retail Federation has both a Facebook page and a Twitter account, and regularly posts updates to followers on both sites.

Different archery retailers use social media differently, and with different outcomes. Those who are a part of that 53 percent say that being on social media helps them connect with their customers and adds a personal touch to purchases that are increasingly taking place online.

Every archery retailer uses social media differently, according to his or her needs, time, Internet savvy and staff. All, however, say that social media help them connect with other members of the archery community, which can lead to greater sales.

Matt Kargas is one of the owners of Minnesota Archery in Litchfield, Minnesota. He said the store has been open for seven years, and that they've been on Facebook for almost three years.

“I had a personal Facebook page, and I decided to try one for the store,” he said. “Pretty soon we started adding some friends around the area, and it blossomed from there. Now about 2,000 people follow us on Facebook.”

Recently, Kargas said, the store added a Twitter account and linked it to their Facebook page.

“Now, every time we tweet, we're not only hitting our followers on Twitter, we're also

posting to Facebook, so we're killing two birds with one stone,” he explained.

According to Kargas, having this level of communication with the store's customers has been very helpful when Minnesota Archery has had some kind of promotion.

“For instance, we do an archery expo every year,” he said. “This year I spent very little on advertising, but still we had close to 600 people come through the door. We did a couple of radio ads and sent out a direct mail piece, but the majority of people came from our social media contacts.” In fact, he said, that weekend was the highest dollar event the store has ever had.



Minnesota Archery is headed by Matt, Jenny and Barry Kargas. Matt said marketing done through social media helped draw in lots of people to the archery expo the Litchfield, Minnesota business hosted again this past year. Scenes from the expo are at right.



Promoting Your Business

By Carolee Anita Boyles

Improve Your Bottom Line



Pam Brookman (left) started a facebook account for DropTime Archery in South Carolina because customers kept asking if the store had a Facebook page where they could stay updated. The opening page for DropTime's Facebook presence is shown here.

Using Facebook in this way can lead to synergy.

"Jimmy Big Time came to the store that day," Kargas said. "He put our event on his Facebook page too, so it was jam packed in here. There was a line to get his autograph."

Minnesota Archery is also getting into YouTube.

"We're going to upload webinars to YouTube," Kargas said. "After seeing the success we've had from Facebook, we're going to start an account there as well. We're already filming a series of 2-minute webinars on how to fletch an arrow and other little things like that. We've also filmed a lot of hunts over the past couple of years that we're going to put on there so customers can see what some of our staff have shot."

Kargas said all of that will help build the store's credibility as a "go to" place for bowhunters.

"Using YouTube is a way to keep people on your website," he noted. "With YouTube, you can link videos right to your page, and visitors don't

have to leave your site to see them."

Kargas handles the social media aspect of the store himself, with some help from his wife.

"If I'm busy, I may tell her we're having a sale on a particular product and she'll post it," he said. "We both have Twitter on our phones, so she can enter it while I'm driving."

Kargas said Twitter and Facebook are much more immediate than e-mail. "Sometimes with e-mail there's a little bit of a lag," he commented. "But if you're on Facebook, people can instant message you and you can answer right away. If a customer has a question, I would rather they contact us through Facebook." Another advantage of Facebook messaging, he said, is that he doesn't get hundreds of junk e-mail messages to sort through and prioritize.

Kargas is a strong fan of social media, and of the effect they've had on his business.

"It's helped our business quite a bit," he said. "It's one of the best ways

to contact people, and it's growing. The best thing about it is that it's free, so you're spending zero dollars to get information in front of people."

For Sonny Glisson, owner of Glisson Archery Range and Pro Shop in Plainfield, Illinois, Facebook is about making connections with archers and bowhunters from all over the world. He's been open for 20 years, since he retired from the military and started a small shop connected to his home.

"My son started my Facebook page for me," Glisson said. "He's very good with the computer, and I admit that I'm not. Since he started the page, I've had an enormous number of calls from all over the country and from other countries."

Glisson admits he is not particularly Internet savvy. He said his son posts information on his Facebook account for him.

"He asks me a lot of questions about what I'm doing, or about a hunt I've been on," he explained. "People see the posts and call me to ask me questions about archery or about hunting."

Steps to Get Started

Facebook, YouTube and Twitter are very different sites, and function very differently. If you're really on the ball you should do all three, because you can use each one to help feed the others.

Facebook

www.facebook.com

To start a Facebook page, go to www.facebook.com. Scroll to the very bottom of the page, and click on "Create a Page for a celebrity, band or business."

On the next page, choose the "Local Business or Place" button. Click on the Shopping/Retail category, and fill in your basic information. Then click on "Get Started" and begin building your page.

Be sure you create your Facebook page in the correct category. Don't open a personal account and set it up like a business page; set up your page in the business format that Facebook offers. This is in Facebook's terms of service, and if you set up your page improperly Facebook may shut it down with no debate.

That said, you also can link your personal page to your business page. This allows you to switch back and forth between the two from one account.

Twitter

www.twitter.com

Twitter is completely different from Facebook. The messages on Twitter are limited to 140 characters. As a result, everything on Twitter is much faster than on Facebook. In fact, you may get major world news there before you see it anywhere else. As a result, Twitter can be a great source of information for you and for your customers.

Twitter's speed gives you a fast look at what your customers and your suppliers are doing at any given moment. The converse also is true. Twitter is a way of communicating with your customers quickly. Many retailers use Twitter to reach customers about a special they're having that day, or offer specials just for Twitter customers.

You can also use Twitter to listen to your customers. You can get feedback from your customers on Twitter, and it's an excellent place to provide good customer service. All day long, people use Twitter to post the service they get at all levels of commerce, whether it's at the

coffee shop or on an airline. If you have a Twitter account, you can respond to your customers' needs immediately. If your customer says something good, you can acknowledge it. If someone says something bad, you can take care of it, and nip a problem in the bud instantly.

One important aspect of Twitter is engagement. If you aren't going to engage and be a part of the online community, don't bother to get on Twitter. You need to become a part of the community, and talk about more than just the products you're selling. Talk about archery and bowhunting, and engage with other people who are talking about those things.

The best way for a retailer to use Twitter is to find people in your demographic, both in terms of your area and in terms of bowhunting and archery. Don't worry about large numbers of followers, just about followers who are applicable to your business. Then engage with those people; become a part of the community.

Setting up a Twitter account is even easier than setting up a Facebook account, because you don't have the privacy setting issues that you have to figure out like you do on Facebook. Go to www.twitter.com, put in your name and e-mail address, and choose a password. Then click on "Sign up for Twitter" and you're in.

You can search for people and "follow" them, or wait for your customers to find you. It won't take long; you'll start to see people you know following you within a few hours.

Link your Twitter account to your Facebook account and you can post to both at the same time.

YouTube

www.youtube.com

This is the place to really get your brand in front of the public. It's more effort than either Twitter or Facebook, but it's also more lasting.

Go to www.youtube.com and click on "Create an Account." You will be redirected to Google. If you have a Google account, sign in, or create a new Google account. When you sign in, you will be directed back to YouTube, where you can click on "Upload" and place videos online.

Glisson said many people he knew overseas from his time in service have connected with him through the page; today he has more than 1,600 followers in many countries on Facebook.

Jessy Draves, one of the owners of Draves Archery in Effingham, Illinois, said he turned to Facebook because so many people are on it.

"When we run promotions, it's really simple to tell a lot of people on Facebook," he said. "Once you get people following you, you have fans. Then when you make a post or show something exciting that you have in the store, people say, 'I like that.' When they like something, they spread it to their friends."

Draves said he started using Facebook to promote his store almost as soon as it became available.

"We got on Facebook before we even had a website," he said. "I have three employees to take care of all my Internet issues; two are full time and one is part time." As a result, his Internet presence is monitored all the time during business hours, and customers who ask a question get an answer almost immediately.

Social media are a vital part of Draves Archery's business.

"We have people who ask when something is coming in, and it's hard to remember who asked for what," Draves said. "So we just tell them to become our friends on Facebook and we'll let them know when it arrives. That way we don't have to keep track of who wants what, and we don't have to make 20 phone calls. With Facebook, we can post something that says, 'Hey, this has come in,' and everybody who was interested knows we have whatever it is. People who didn't ask about it also see it, and they may decide they're interested in it too."

Draves also uses YouTube to his advantage.

"We have a lot of product

reviews on YouTube," he said. "I have more than 500 videos online, with more than 2 million views. I do a lot of technical videos about how to do things, and that puts my face and my name out there in front of people. As a result of all the videos, my phone rings off the hook. Explaining how to use something in a video sparks interest and gets people talking, and then they want to come in and see it."

Using YouTube as a marketing tool is more than just throwing something at the wall and hoping it will stick.

"You have to produce a quality video and then market it," Draves asserted. "It's a lot of labor, because you have to shoot the video and then edit it. I started out with two cameras, and now I have three cameras and about \$6,000 worth of equipment. It's a lot of work; you really have to get out after it to make it work."

Although Draves Archery is on Twitter, Draves said he's not as active there as he is with Facebook and YouTube.

"We do some posts, but it's overwhelming to keep up with it," he said. "There are just so many different things out there that we don't have time to do them all."

Pam Brookman, one of the owners of DropTine Archery in Advance, North Carolina, said she started using Facebook because so many customers came in and asked if the store had a Facebook page.

"We started our page right around Christmas of 2011," she said. "Now I post something about where we're going to shoot a tournament, and tell people if they're going, they can meet us at the shop and follow us if they don't know where they're going. We also post things that are going on in the shop. People like to see what's going on and be 'in the know.'"

In some ways, communication on Facebook seems to be taking the place of phone calls.

"We still get a lot of calls," Brookman said. "But Facebook is like texting; sometimes you're in a hurry and you don't want to get into a long conversation with someone, so you send them a text real quick. You can just message someone on Facebook and they reply."

Brookman said DropTine

Archery also uses both Twitter and YouTube.

"I don't Twitter as much as I do Facebook, because you can't interact with other people as much," she said. "We just started with YouTube; we've only put one video about the shop on there, so we don't know much about it yet."

Brookman is eager to see where her foray into Facebook takes the shop.

"We've only been on since December, so we only have a couple hundred friends so far," she said. "But it's already brought in customers who

didn't know we existed, because they saw us on a friend's wall."

Wiregrass Archery in Enterprise, Alabama, has been open for three years. Owner Michael Helgeson started



A pro shop vehicle decorated with a unique wiregrass camo finish has a place of honor on the Facebook page of Wiregrass Archery in Enterprise, Alabama.

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a Facebook page at the same time that he opened the store.

"We were on Facebook within a week of opening the store," he said. "The more you connect with people, the more you make them feel like they're connected to the store. We make our posts friendly and stay out of politics. We have people who really connect with us as a result."

Helgeson knows customer come in as a result of his Facebook postings.

"I like to test our new products, and when I do I'll post something about it," he said. "I just recently tried the ThermoCell for the first time, and I couldn't believe how well it worked. I posted about it, and a lot of guys said 'Hey, yeah, duh,' but I also had some people who wanted to try one. So we did very well with them in the first few weeks that we had them."

Except for one ad on YouTube, Helgeson has stuck with just Facebook because he has two businesses and just doesn't have time to keep up with more than one social medium channel.

"Keeping up with just Facebook is enough of a task right now," he said.

Helgeson uses Facebook as a way to update his customers about what's going on in his store, and to tell them about new and interesting products.

"A lot of times someone will come into the store and ask about a new product," he said. "If I don't know about it, I'll get one and try it and then post something on Facebook about it." That often results in sales to customers who see the posts and get interested in particular products as a result.

"Facebook is one of the easiest to manage forms of advertising," Helgeson said. "It's free, and it's already set up for you. It's a much easier way to make contacts than through a website."

Maximum Impact

Putting social media to work for you is more than just starting a page on Facebook or sticking a few videos on YouTube. To get the most from any of these sites means constantly updating, and keeping yourself in front of your followers.

When working with any of the social media, experts say, there are several important issues to address

before you begin. Brad Smith is a marketing consultant and founder of FixCourse.com, an online publication that teaches businesses how to increase revenue with internet marketing.

Smith said there are three important questions you need to ask before you start getting involved in social media.

"First, how will this support your business?" he said. "You need to understand how it's going to increase revenue, decrease costs, or increase customer support."

Second, Smith said, ask yourself if your expectations are realistic.

"It's a 24/7 job, and it's constantly evolving," he said. "You need to have realistic expectations, not only in terms of success, but also what it's going to take to succeed. It may be inexpensive, but it takes a ton of effort and time. You need to be willing to work for the long-term payoff if you want social media to build your business."

Third, ask yourself why your target customers should care that you're on a social media site.

"The key to social media is engagement," Smith said. "Without it, people won't stick around and buy something. People don't interact with you because you're awesome; they do it because it benefits them. To succeed in social media, you need to be laser-focused on your audience and their needs, wants and desires."

Now here are some suggestions for making the most of the three most popular social media avenues.

Facebook

Your profile picture gives you an identity with both existing and potential customers, because it's the first thing they see. Choose a profile picture



Draves Archery uses a staff photo to welcome you to the pro shop's Facebook presence. The pro shop makes sure Facebook users are aware of the videos it runs on YouTube. Amazingly, the pro shop has over 500 of its videos online, helping customers understand how to work on their archery gear as well as highlighting new products available from the store.

that identifies who you are and what you do. Select something that's colorful but uncluttered. Change it up from time to time, being sure that whatever you use promotes your brand.

Don't wait for people to find you. Facebook has a feature that will look for "friends" based on your e-mail address book; use it. Send "friend requests" to all your existing customers (Facebook limits the number you can send in a 24-hour period) and build your friends "base" as quickly as you can.

Post photos and videos. If your customer brings in a picture of a great deer he killed, post it to a photo album on your Facebook page.

Tag customers in your photos. When you upload a picture of a customer, tag him in the photo so others can find him.

Utilize your wall. Your wall is where you communicate with your friends. You can post status updates, photos, videos, or anything else you want people to know. Post regularly but don't spam. Nothing is more tiresome than dozens of status updates that don't say anything.

Create events. On the upper right hand corner of your Home page is a link that says "Create An Event." You can add a sale, opening day of archery season, an in-store seminar, or anything



Here's what anyone can see from their computer when they go to Glisson Archery's Facebook page. Clicking on the tab marked "Wall" under the target on the upper left will take you to the Facebook wall for this business where most information is posted, but to access that customers will need their own Facebook account. Accounts are free and it takes just a minute or two to create one.

else of interest to your customers or your community and invite friends to come or join.

Post on other pages. Find archery and bowhunting groups, organizations such as the Rocky Mountain Elk Foundation or the National Shooting Sports Foundation and "like" them so you can comment on ongoing discussions. Don't dismiss the idea of reaching outside the archery community; you're trying to connect with potential as well as existing customers.

Write for adults. Most Facebook users aren't teenagers; they're adults, many of them busy professionals. Don't "talk down" in your posts; write like you would talk to someone coming into your store.

Be grammatical. Check spelling and usage before you send your post.

Twitter

You have only a few characters to identify you and your business, so select a user ID that describes your brand. If your store name is Main Street Archery, use that. Don't use something generic like "archery nut."

Use your real location.

Put a photo on your profile. Use a closeup shot of you, because the photos on Twitter are very small.

Create a background that promotes

your brand. If you use the plain blue background that Twitter provides, many followers will think you don't take Twitter seriously.

Before you start Tweeting, read what others are saying to get a sense of the tone and cadence of Twitter. Re-tweet entries that you think your customers will find interesting.

Take your time learning how Twitter works. It's much faster and significantly different from its Facebook rival.

YouTube

Understand the difference between YouTube and other social media sites. Because it's visual and auditory, it requires a different skill set

and a different level of technology than Facebook or Twitter.

Make sure every video will appeal to your audience. Don't mix personal videos (vacations, silly dog tricks, etc.) in with your store videos; have a separate account for those.

Keep videos fresh. If a video you put up last year is stale because the new product you reviewed has either become widely accepted or has disappeared for lack of sales, replace the video with something else.

After you post a video, share it on your Facebook page, your Twitter account, and with your e-mail list.

Invite your Facebook and Twitter friends and customers on your e-mail list to subscribe to your YouTube channel.

Working with social media requires a commitment of time and resources. If you can make that commitment and have a clear goal in mind, you can use social media to connect with your customers and drive dollars to your bottom line. ←

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Taking a New Look at Stabilizers

When it comes to accessories many dealers link them primarily to new sales. While it is true that most accessory sales occur when a customer purchases a new bow a unique accessory offers the opportunity for sales at any time to customers wishing to improve the performance of their setup. This requires the dealer to make all of his customers aware of any new item that could improve their overall performance regardless if they are buying a new bow or not. Items such as these also present an excellent opportunity for generating add-on sales and are often substantial profit generators. The products discussed here fit that description.

Because I am older than dirt, I can remember when Hoyt Archery introduced its twin stabilizers mounted on the upper and lower limbs of its target bows. Single rod stabilizers were also quite popular and stabilizers of various configurations quickly became the norm on target bows. The rod length varied and different ball end weights were available allowing the shooter to customize the stabilizer's weight and feel. V-bars followed and additional weights added in an attempt to "balance" the bow. While the stabilizer was born in the target arena, it quickly made a transition to hunting equipment as short stabilizers of varying weights were added to hunting bows to increase stability and customize the feel in the hand.

Stabilizer design remained relatively consistent until the development of vibration absorbing materials which were quickly integrated into stabilizer design increasing overall performance. Stabilizers remained at this plateau until recently when a new and unique design approach again raised the bar giving the shooter increased tune-ability and performance and the dealer an excellent selling opportunity.

Ktech's KP series stabilizers position Harmonic Dampers at angles to each other in order to reduce rotational torque in multiple directions. The end mounted Harmonic Damper and the mounting stud are both totally adjustable rotationally for unlimited orientation.



Ktech Designs

Although they have only been producing archery products for approximately two years Ktech Designs has become a well known name among dealers for its line of high quality and innovative stabilizer designs. Ktech Designs is owned and operated by Kerry Verran and Eric Bidigare. Kerry is a tool maker with an extensive background in mechanical design and automated machining techniques. Kerry established Ktech Designs shortly before the company with which he was employed cut-back severely and he was laid off. While one door was closing another opened as several days later Kerry received a call from Mathews indicating they were granting a license for Ktech to use the Lost Camo pattern and Mathews signature Harmonic Dampers in their product designs.

Ktech incorporated Mathew's harmonic dampers into a gridlock design of its Tech and Hexcor Series that reflected and matched Mathew's risers. This sparked an instant interest among consumers and dealers alike and made these stabilizers instant hot sellers. However, not simply satisfied with offering a popular stabilizer Ktech developed its KB Series which

comes in 2 or 4 rod configurations and in 6, 8 and 11 inch lengths. The KB Series stabilizers also incorporate Mathews Harmonic Dampers and offer a selection of total weights between 6.9 and 10.0 ounces by utilizing the interchangeable weight system. Then Ktech Designs took additional steps with the KB Series that drastically changed the performance of its products.

Stabilizers normally function "in-line" with the bow riser but Ktech's KB



The KSB Side-Bar combines an adjustable string stop with a side bar stabilizing system consisting of a tunable side bar offset weight system. This arrangement allows the shooter who prefers to shoot with a mounted quiver to compensate for the offset load and achieve perfect bow balance.



The Infinity Series stabilizers from Ktech feature individual Infinity Arms that can be rotated 360 degrees and placed facing forward or back to suit the shooter's desired balance and weight requirements. This design allows for an infinite number of position combinations to achieve the perfect bow balance.

Series was designed to work "outside the box" of conventional stabilizer thinking. Personally when I think of "outside the box" in conjunction with archery a name that pops into my mind is Dave Andrews of Andrews Archery located in Frackville, Pennsylvania. Dave is constantly experimenting with everything related to archery to improve equipment efficiency and bring the sport to a new level. (For those that want to learn more about Andrews check out the *ArrowTrade* feature, *No Bow For You*, profiling him in the January 2008 edition.) Therefore it was no surprise when I learned that Dave and Ktech had worked together during the development of the KB stabilizer series. The KB Series contains three Harmonic Dampers, two of which are mounted at 45 degrees to each other and a third which is mounted at the end of the stabilizer and is adjustable through 360 degrees. The entire stabilizer is adjustable 360 degrees around the mounting stud. This design and adjustability allows for the placement of Harmonic Dampers



The Tech Series stabilizer from Ktech combines Mathews Harmonic Dampers with a gridlock stabilizer frame that is not only effective but also complements Mathews riser design.

at various angles to each other and the bow itself. This allows the shooter to fine tune the stabilizer to counteract both vibration and rotational torque that is generated in various planes from the riser and/or mounted accessories depending upon the individual setup.

Ktech's Infinity Series stabilizer offers a different approach to the same problem and comes in 5, 7 and 11 inch lengths with both a single or double totally adjustable Infinity Arm. Again the object is to give the shooter the ability to adjust their stabilizer for the ultimate stabilization, balance and vibration isolation creating a custom feel.

Ktech also offers a KSB V-bar and KSB Side-Bar, both of which combine an adjustable string stop with an adjustable variable weight stabilization system. The KSB Side-Bar also features a tunable side-bar with an offset weight system that allows the shooter to create the desired balance on any bow while significantly reducing residual vibration.

"We feel that although the changes we have made to stabilizer design have been subtle they have proven to make a truly big difference in performance for the archer," said Kerry. For more information call (810) 516-5352 or (810) 309-1582.

Stokerized

The length and physical weight of a stabilizer system are key to minimizing movement while aiming without sacrificing the shooter's ability to handle the weight. This is important during long periods of shooting such as in tournaments or when carrying the bow for long distances afield when hunting. It is also important for the shooter to be able to balance their bow so it reacts consistently as desired on the shot. In addition, it is critical to eliminate or isolate as much radical or aggressive bow movement as possible. Keeping the bow in a solid or fixed position throughout the shot will greatly reduce



The Hunter stabilizer by Stokerized features a solid acrylic rod which comes in three lengths and is available in 12 colors. It is ideally suited for the archer who wants to make a fashion statement.

torque and aid in consistent follow-through resulting in increased accuracy. This desired result can only be achieved with trial and error, which is why it is important to have a stabilizer that is completely adjustable in weight and position.

Stokerized Solid Aiming Solutions is also a newcomer to the stabilizer market making its debut about three years ago. However the folks at Stokerized realized, that unlike baseball caps, stabilizers are not a "one-size-fits-all" product. In order to supply the archer with a stabilizer that provided all of the desired tuning options, Stokerized developed a system of stabilizers of various lengths. These have a selection of interchangeable weights and a Saturn Dampener. To appeal to the fashion conscious archer, the stabilizers are available in a variety of

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The SS1 by Stokerized was designed to eliminate riser torque induced from sights, rests, quivers and bow geometry as well as hand pressure. The SS1 is weight and position adjustable allowing the shooter to achieve perfect bow balance by following the simple directions provided.

camo finishes and colors in its Edge and Hunter lines.

One of the stars in the Stokerized stabilizer line-up is the SS1, which is a



The SS1 by Stokerized is available in a multitude of colors and weight combinations.

truly functional stabilizer design. The company claims the SS1 has soared in popularity since its introduction one year ago. The SS1 is designed to reduce riser torque induced by arrow rests, quivers, sights, bow geometry and hand pressure. Stokerized said it achieved superior performance in a single stabilizing unit by incorporating three primary adjustments into one.

The SS1 slides forward and back and, when combined with the proper weight distribution, can be tuned to provide the desired bow balance. Next, the SS1 can be adjusted from a position tight to the riser to one that is in an upward and outward direction. Moving the weight out from the riser helps offset the weight of the sight and quiver.

Stokerized provides a detailed and easy-to-follow set of instructions explaining each step and the desired bow reaction as well as the required

corrective action. When the instructions are followed completely the shooter can eliminate unwanted radical bow movement by transferring and distributing weight in and around the vertical axis of the bow precisely where required for torque free and repetitive accuracy.

Rounding out the Stokerized stabilizer line is its Nucleus, which is designed to be shot alone as a primary stabilizer or in conjunction with a traditional front-mounted stabilizer. This system works around the bow's vertical axis in four quadrants allowing the archer to distribute and position weight precisely where needed to eliminate asymmetrical forces which induce bow torque. To learn more call (717) 867-1782.

Summary

These new, adjustable stabilizers offer the archer an easy way to fine tune their equipment for increased smoothness, ultimate balance and improved accuracy. While they can be sold to beginners seeking the "best," they are better suited for experienced shooters. This fact opens up excellent sales opportunities and is perfectly suited for those customers who are constantly asking, "What's new." Archers are well known for their desire to constantly "tweak" their setups in an attempt to gain that extra point or tighten their group. Tunable stabilizers, like the ones described above, suit this desire to a "tee" and are a sure sales generator.

However these items do not sell simply by hanging them on the wall. They require making the customers aware of the advantages of adding these stabilizers to their setups. This means outfitting a bow or two with these stabilizers for display or as trial bows. If you have an indoor range, approach a customer and offer to mount one on their bow and have them see the difference it makes compared to their present setup. If they like the addition, you'll not only gain that sale but will probably make additional sales to their friends.



The Nucleus by Stokerized is designed to be shot alone as the primary stabilizer or in conjunction with a traditional front mounted stabilizer. This system works around the bow's vertical axis in four quadrants allowing the archer to distribute and position the weight precisely where needed to eliminate asymmetrical forces which induce bow torque. The increased stabilization results in a smoother shot and increased accuracy.

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Hawke Sport Optics Expands Two Ways

Hawke Sport Optics is proud to announce new sales representation and an expanded U.S. facility.

A supplier of binoculars, spotting scopes, crossbow, rifle, airgun, and shotgun scopes, Hawke will have salesmen covering 21 states as of June 15. Hawke has secured the Outdoor Marketing Alliance (OMA) group to manage sales territories from the Mid-Atlantic to the Upper Midwest.

"All of us at Hawke are excited to see the experience and professionalism everyone at OMA can bring to the table," said Jim Jordan, general manager at Hawke. He continued, "OMA has a tremendous reputation in the outdoor industry as a solid, dedicated, and respected sales organization. We are certain that as our rapid growth continues, OMA will be a catalyst in the 21 states they are now managing for Hawke."

Current dealers will be receiving information of any change in representation that may affect them. Any new account inquiries can be made to Hawke Sport Optics directly by e-mail or toll-free phone call, at which time they will be directed to the proper territory manager. The toll free number is (877) 429-5347.

INDIANA FACILITY EXPANSION

Hawke Sport Optics is proud to announce the Fort Wayne, Indiana facility that Hawke has occupied since 2007 recently underwent expansion efforts to double both the warehouse and administrative areas.

"We are excited to be starting 2012 on such a high note," said General Manager Jordan. "While many companies have had to streamline their operations or even close facilities, the tremendous growth at Hawke in recent years has made it necessary to double our footprint in Fort Wayne. We expect this trend to endure as our staff, product lineup, and brand continue to make

an impact on the American shooting sports industry."

Hawke Sport Optics, with a rich history of doing business in the UK and throughout Europe, is still a relative newcomer to the US market. Since entering the US market in 2007, Jordan said Hawke has established a reputation as one of the best values in sport optics. "A leader in crossbow scope innovation, Hawke is quickly gaining a strong following for our rifle scopes and binoculars as well," Jordan said. "Hawke's

broad product offering coupled with an uncanny ability to deliver more features and benefits at a given price point than any other optics provider on the market has caught the attention of the American Outdoorsperson."

Mr. Jordan said in closing, "We saw tremendous growth and recognition in 2011, and expect much more of the same for 2012. This expansion was the next step in cementing Hawke Sport Optics as a force in the American shooting sports market."

GamePlan Gear Boosts Sales Force

GamePlan Gear, maker of packs, bow cases and accessories, announces the addition of Rob Weletz and Outtech, Inc. to its national sales force.

GamePlan Gear has been growing since its initial product offering seven years ago with products like the BowBat, Spot and Stalk, SnapShot and many others. It now boasts significant shelf space with retailers and key partnerships with premier outdoor television programs. This sparked GamePlan Gear's management to hire Rob Weletz as sales director and Outtech Inc. as the in-the-field sales representation.

GamePlan Gear President and Founder Mike Arajakis had this to say about the additions to his team. "For six years, I've watched as Outtech has put some of the outdoor industry's leading brands on the map. Through the tradeshow we attend, I have gotten to know many of the Outtech reps and have always been impressed with their knowledge of outdoor gear and hoped one day we would have them help us promote and develop our line. We couldn't hope for a better opportunity to work with some great guys and die-hard bowhunters, better yet, the partnership is certain to become one of the best opportunities we have had to market truly-innovative products."

"We learned about Rob Weletz by simply putting the word out to our

friends in the industry that we were searching for an experienced manager to head up our sales group," Arajakis said. "If you talk with Rob about the archery biz for five-minutes, you quickly realize that he knows the game very well. Along with his strong background in soft goods development with a key box-store archery department, Rob is the perfect fit for developing the GamePlan brand... and... the guy is a rabid bowhunter!"



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Arrow Tuning Traditional Bows

Tuning your arrows for perfect flight may seem like a lot of work, but it is well worth the effort. It's like perfecting a super accurate custom load for a high powered rifle. Mike Fedora of Fedora Custom Bows told me once that "accuracy kills." When you think about it, it's true. Shot placement is often the determining factor of whether or not you recover your animal. In addition to the accuracy improvements, penetration is also enhanced when arrows are flying perfectly. Dr. Ed Ashby ranks perfect flight Number 2 on his list of top 12 penetration enhancing factors second only to structural integrity. In other words, do what it takes to get your arrows flying perfectly. You will shoot more accurately and get better penetration.

For all tuning of traditional bows we recommend that you start with your arrows at least a couple inches longer that you think you'll need them and if you really want to do it right, start out with full length arrows. This allows you to cut them a little at a time to stiffen them as you go. If you find that the arrows fly best 2 inches longer than your draw length, don't worry about it. Perfect flight is much more important than an arrow cut to a particular draw length.

Another good tuning tool is a field point test pack. When you have field points from 100 grains to 315 grains you can use the different weight points to adjust the flight characteristics of your arrows. Adding a heavier point will weaken the arrow's dynamic spine and adding a lighter point will stiffen it.

Note: It is recommended that you keep a written record of the tuning process and especially where you end up when you're finished. Record the



Traditional shooters must have near perfect form and crisp clean releases if they intend to bare shaft tune or paper tune.

brace height, the nock point location, plunger adjustments, arrow model/spine, arrow length, and point weight. You will find this information quite valuable the next time you purchase arrows. Some dealers track this same information for their customers.

All tuning methods described here are from a right handed archer's perspective. Left handed archers will need to reverse the indicators for their tuning.

Fletched Arrows

Tuning by simply watching the flight of your fletched arrows as you shoot them is one of the most popular

tuning methods. It is the easiest, quickest, and simplest of all tuning methods. When tuning with fletched arrows you're looking for good clean flight from right out of the bow all the way to the target. If you notice a very slight kick at the shot, but the arrow recovers quickly and flies straight to the mark, don't worry about it. That is simply the arrow recovering from the archer's paradox. Bright colored feathers are best because they allow you see the arrow in flight much better.

If there are any tuning issues you're going to see either a side-to-side motion of your nock which is called fishtailing, or an up-and-down motion



Photo Left: Bow on the left is set up for shooting off the shelf with a plunger. Note the calf hair glued to the tip of the plunger to keep the draw quiet. The NAP Center Rest Flipper on the right is an excellent choice for those shooting vanes or who simply don't want to shoot from the arrow shelf.
Photo Right: Hi-tech, plunger adjustable longbow on the left and a conventional solid riser longbow on the right.



called porpoising. If you have multiple issues you may see a circular motion. Fishtailing is generally a spine (arrow stiffness) issue and porpoising a nock point issue.

Start about ten yards from the target and shoot an arrow. If it exhibits some side-to-side motion and impacts to the right, it is weak. If you started with arrows that were full length, you knew this would probably happen anyway. Cut 1/4 inch off the arrow to shorten and stiffen it and shoot again. Continue shooting and shortening the arrow until it is flying cleanly from the bow and impacting where you are looking. If you started with full length arrows and find that the arrow impacts to the left at the first couple shots, your arrows are far too stiff for that bow and you will need to drop a spine bracket with a different set of arrows. Remember, for right handed shooters, arrows that are too weak will impact to the right of your aiming spot and arrows that are too stiff will impact to the left.

Note: Arrows with very high FOC (forward of center) percentages do not play fair. They do not follow the normal rules of tuning. A quick story... While trying out 315 grain points on a fletched full length tapered GrizzlyStik Sitka (.530 deflection) and a fletched GrizzlyStik Alaskan (.440 deflection) I found that the weaker Sitka impacted to the left of my target a full 10 inches whereas the stiffer Alaskan impacted right on target. I was officially confused. That couldn't be. To verify the results I switched to a 100 grain point

A special thanks to Danny Dupuy of Tri-State Archery in Kendallville, Indiana for his assistance with the content and photos in this article.

on the Sitka and shot again. This time it landed perfectly in the target right next to the Alaskan. The bow was a Hill styled Thin Ram longbow that has a sight window that is cut about 3/16 inch shy of center. The theory: Since the arrow started out its flight already pointing to the left of target, and since so much of the mass weight of the arrow was in the front of the arrow, even though the spine was weak, the mass weight pulled the lighter tail end of the arrow with it to the left rather than allowing the arrow to over flex and wrap around the riser impacting to the right like an arrow with a much lower FOC would do.

Bare Shaft Tuning

Bare shaft tuning is another popular tuning method with traditional shooters. In bare shaft tuning you shoot an arrow with no fletching. The idea is that by eliminating the guiding effect of the feathers, any problems with spine or nocking point location will be magnified and you will be able to see the indicators while watching the bare shaft as it flies toward your target. If you can get an arrow to fly well with no feathers at all, then you know your feathers are not covering up any flight issues.

Bare shaft tuning can be

problematic however. Your form must be nearly perfect during bare shaft tuning or you, the archer, will be inducing flight problems that you will not be able to eliminate with spine and nock point adjustments. If you have bad form, bare shaft tuning will be very frustrating for you and we recommend that you use the fletched arrow method of tuning. (And work on improving your form.)

Start about ten yards from your target. If your bow is already set up with a nocking point, you can leave it where it is. If you're setting up a new bow, you may want to start with the nocking point just a little higher than normal because we don't mind nock high at this point of the process. We are first trying to get the arrow to flex the proper amount so when it is launched from the bow it flies straight away from you, nock and point in straight alignment, as it flexes recovering from the archer's paradox, all the way to the target. Once that is adjusted properly we look to resolving the nock high issue.

Right handed shooters: When you shoot the arrow, if you see nock left, point right, and your arrow impacts to the right of the spot you were aiming at, the arrow is exhibiting a spine that is too weak.

To stiffen the shaft you can either cut it shorter or use a lighter point. (Even if you are using a plunger, since this is early in the game and you're starting with long arrows, you will want to adjust the arrow by cutting it rather than simply adjusting the plunger.)

If when you shoot you see nock

right and point left, your shaft is exhibiting a spine that is too stiff. To weaken it you can increase your point weight, or try an arrow of the same spine that is longer.

Repeat the shot sequence, watching the nock and point of the arrow as it flies to the target and where the point of impact is in relation to your aiming spot. After each shot, make the appropriate adjustment then shoot again. Continue this sequence until you get your arrow to where it is flying straight from the bow, nock and tip in alignment as they fly to the target, and impacting in line with your aiming spot.

Once you get your arrows flying straight and true to the target you can adjust out your "nock high" by slowly lowering your nocking point until when you shoot you see your arrow flying nice and horizontal with nock and point in the same plane.

After all is good, to verify your adjustments, go back to 20 yards and see if the shafts shoot straight all the way to the target. If yes, then you're golden. If not, you should only need very minor adjustments at this point.

Sounds easy, and it is as long as your form is impeccable and your nocks are not too tight on the string.

Group Tuning

Group tuning is taking your bare shaft tuning one step further once you are satisfied with your bare shaft set up. Fletch three arrows of the proper spine and length and keep three arrows unfletched. Start at ten yards and shoot all six arrows. If they all land in the same spot on the target you are good to go. If the bare shafts land to the right of your fletched arrows, they are exhibiting a slightly weak spine and you will need to slightly stiffen them by cutting them just a little shorter. (At this point you should have settled on a point weight so it is assumed that your adjustments will either be to the bow or by cutting the arrow shorter. To stiffen the flight of the arrow on a longbow or recurve bow with a plunger, simply move the plunger further out from the sight window. For bows with no plunger, a small shim, like a piece of a round toothpick, can be placed behind the side plate. That moves the arrow further from center and compensates for that slightly weak reading.) Continue with the process until both the fletched arrows and the bare shafts are grouping together in the target.

Once you are shooting tight groups at ten yards, move back to 20 or 25 yards to verify your adjustments. If your arrows all group together you know you have tuned your bow and arrows perfectly to each other.



Notice the difference in center shot between these two bows. The bow on the right holds an arrow with the point just slightly to the left of the string. The bow on the left holds the arrow well out from center and will require a lighter spined arrow even if both bows are exactly the same draw weight.

Paper Tuning

When paper tuning an archer shoots his arrows through a suspended piece of paper and gets his feedback from the tears in the paper. What you are striving for is a perfect hole with three little feather tears. Start about 3 feet or so from the paper and shoot an arrow. (Once again you should start with an arrow that is longer than you need so you can slowly cut it down until it is the proper stiffness.) When you shoot through the paper if your tear shows the point on the right and a tear to the left, the shaft is telling you that it is too weak. Cut it 1/4 inch shorter and shoot again. If you started with a long arrow and your tear shows point left and tear right, you will have to go to a lighter arrow because that arrow is already too stiff and overly long so it just makes sense to drop to the next lower spine. Continue the process. Each shot, after shortening your arrow, should show less and less left tear. When you get close to where you need to be you might only want to cut 1/8 inch off at a time.



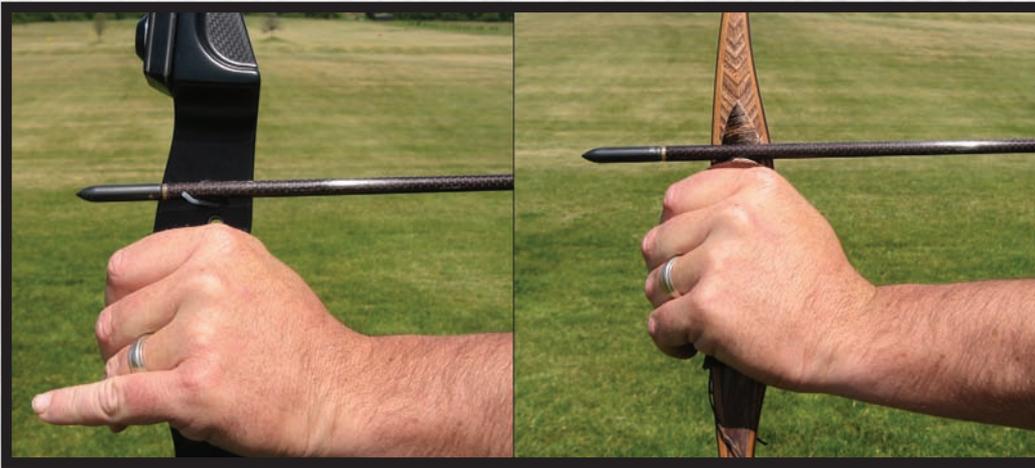
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Same arrow, same anchor point, but notice the difference in the draw lengths in this photo. There is at least an inch difference just because of the handle/grip design.

at ten yards, move back to 20 yards and shoot again, checking to see if you still have a perfect tear. If you do, great! If not, you will need only very minor adjustment to get there.

Traditional bow variables that you should know about and check before tuning...

Center Shot: Many longbows are nowhere near center shot. If a bow is "Center Shot" the side of the sight window is in line with the center line of the

bowstring. Non-adjustable traditional bows vary from 1/16 to 3/16 inch shy of, or short of, the center line where the string lies in the center of the limbs to even 1/8 to 1/4 inch past center. The further from center the sight window is, the weaker the arrow's spine must be to properly launch from the bow and fly directly toward the target. Likewise the closer to center a sight window is, the stiffer the arrows must be to fly correctly. This is

an important consideration when deciding which spine arrows you need to begin your tuning process. Some newer longbows, like the Carbon Nano, and many of the ILF (International Limb Fitting) bows are cut well past center to allow vane clearance and perfect tuning with either a plunger or adjustable elevated rests like the NAP Center Rest. **Draw Length:** Not all bowyers measure draw length the same way. The ATA standard for manufacturers is 26-1/4 inch from the deepest portion of the grip, the pivot point, back to the string. This allows 1-3/4 inch for the thickness of the bow's riser. But most people just measure the arrow from the valley of the nock to the back of the bow. It is interesting to note that different bows drawn by the same archer can yield different draw lengths. A pistol gripped bow with some depth to the riser will yield a longer draw than a small riser such as the Great Northern

Paper Tuning Tear Guide

Point Right - Tear Left
Weak Arrow Indication

Point Left - Tear Right
Stiff Arrow Indication

Point Low - Tear Up
Nock Point too High

Perfect Tear

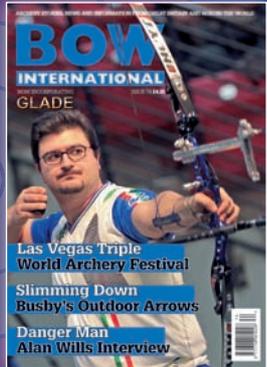
Point High - Tear Down
Nock Point too Low

This paper tear guide can help you interpret the tears your arrows are creating as they pass through the paper.

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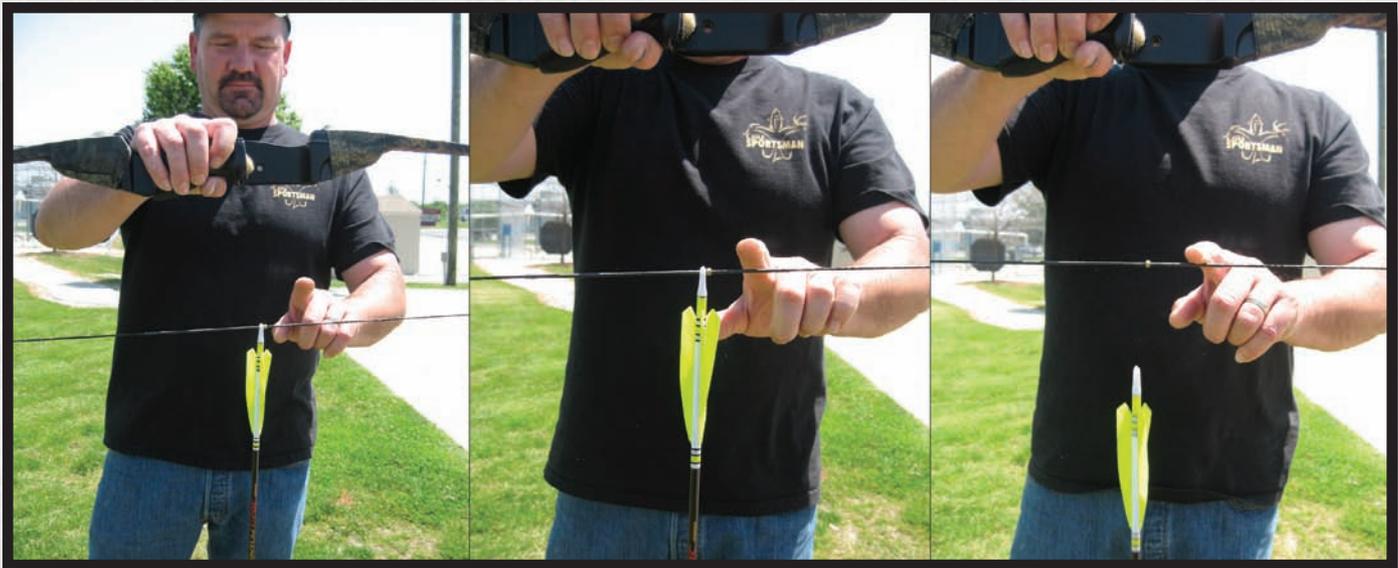


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Nock to string fit is very important. A slight tap on the string should cause your nock to release from the string.

“Lil’ Creep” shown in the accompanying photo.

Bow Cant: Some archers hold their bows very straight up and down, or vertically while others hold it at an angle or what is referred to as “canting the bow.” This will affect the way an arrow flies from the bow. Either style is acceptable, but for consistent flight you

need consistent form.

I have found that most traditional bows shoot quite nicely with a nock point set at 1/2 inch high. At first glance it looks too high, but I have seen literally thousands of longbows and recurve bows that shot great with a nock point set there. It is recommended that you start 1/2 inch high, if you need to make any adjustments at all, they will be very minor.

Nock fit: Your nocks should fit easily on your string without snapping on too hard. If a nock is too tight it will cause all sorts of tuning issues. Until

you have proper nock fit it will be nearly impossible to get your arrows tuned. What we like to see is a nock that will snap on the string, but when you allow the arrow to hang from your bowstring, facing the ground, a light tap on the string by your finger should dislodge the arrow from the string.

Tunable nocks are great. If your arrows come with friction fit, tunable nocks remember that you can adjust how your feathers engage your arrow shelf by slightly twisting the nock. Many traditional shooters leave a gap between their side plate and arrow

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Do your customers use vertical shooting or a slight angle known as canting the bow? Either is fine as long as they are consistent. Note: If using an elevated rest like the NAP Center Rest, they should stick to the vertical style of shooting.



Once you are well tuned, be careful or you may get some Robin Hoods like these. Note how the arrow with a 200 grain head penetrates so much deeper than the arrow with the 100 grain head.

shelf material and position their cock feather going straight up instead of out at 90 degrees from the sight window. When shooting bows with plungers, many times a slight adjustment is needed to eliminate contact with the plunger button.

Brace Height: If your feathers are coming in contact with your arrow shelf before the nock clears the string this will cause a bump to the tail end of the arrow and can also give you false readings on your arrow flight. During the shot, your string actually comes forward of its center line before the nock clears the string. Make sure your bow is braced high enough to allow the nock to clear the string before your feathers have a chance to contact the

arrow shelf and affect flight.

When bowhunting, the last thing you need to be worrying about is arrow flight. Put your work in ahead of time. Tune your arrows to your bow so everything is shooting perfectly and when you get out in the woods all you need to concentrate on is the shot. No arrow flight worries, just concentrating on the shot. Good luck with your arrow tuning, and remember, pick a spot, concentrate, and shoot straight!

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.

For past Traditional Focus columns, see the library of complete issues at ArrowTradeMag.com. That web site requires a high speed internet connection, but the same columns are available in easy-to-download PDF format at ArrowTradeMagazine.com.



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The Family Crest

When I studied history in school as a teenager I was intrigued by the crest medieval knights had on their shields and proudly displayed on the walls of their castles. The family crest normally reflected a statement about the heroic adventures of the knight and the history of the family. The crest varied from knight to knight but most contained images of lions, dragons, swords and giant birds with fiery eyes and outstretched talons. They were filled with brightly colored and exciting symbols of power and strength. Often as a child I tried to image a family crest of my very own, but somehow crossed BB Guns and a dead chipmunk did not seem to capture the spirit. As the saying goes, as I grew I put away the things of a child and soon I forgot about a family crest, that was until recently, but let me start at the beginning.



example, someone explain to me why my hallway closet light doesn't work anymore since I painted the inside of the closet? The doors on my kitchen pantry that used to get along just fine with each other no longer want to close and I haven't seen the keys to my ATV in six weeks. I took off all of the wall switch plates to make it easier to paint. I cleaned them and put them back on and guess what? Wrong! I'll bet you thought I would be missing one. Nope, I have an extra one. Unless they were breeding in the bag I kept them in how in the world did I get an extra one?

There is only one explanation for these ghostly happenings, the house hates me and doesn't like being painted. For my part I would be just as happy to call it a draw and quit right now even though half of my doors are still in the garage waiting to be sprayed. Personally, I have gotten used to not having any doors in the house. As a matter of fact it has speeded things up considerably as I find I am not spending as much time in the bathroom. It just seems kind of unnatural sitting there reading with a big hole in the wall.

Oh and if you don't believe me about the house doing some strange things why is it that since I painted the downstairs bathroom the commode won't flush? Over the past few weeks I have made so many trips to the basement for the plunger that I painted it pink, stuck it on the wall and put a roll of toilet paper on the handle. At least it serves a useful purpose and it's there when I need it.

Several weeks ago my wife wanted to paint the spare guest bedroom and somehow in a weak moment she talked me into helping her. I guess I should have closed the door to the rest of the house because somehow the paint from the spare guest bedroom flowed out and soon we were in the process of painting the entire inside of our home. I say in the process because I have come to realize that painting the entire inside of your house at one time is like eating an elephant with a small spoon. It seems to take forever and by the time you are half way through you are sick of it. That is where I soon found myself with this paint job, sick of it.

The interesting part is I don't think the house liked it either. I truly believe that objects like a house, a car or a bow can actually have a personality. You do something to them that they don't like and they do something to you that you won't like. I should have known better when my wife said as she started this painting project, "This won't be hard and it shouldn't take any time at all. As a matter of fact it should be fun." Compared to painting, having a kidney stone is fun. Having your release go off halfway back during the draw and you wind up punching yourself in the mouth is fun. Painting is not fun.

After we started this painting job, a whole lot of stuff at my house decided to stop working for no reason. For

All of this brings me back to my family crest. How you might ask does any of this relate to a family crest. I firmly believe that a family crest is something that should reflect on great achievements or life-altering events. I would have hoped that mine would have featured a Pope and Young record animal between crossed bows but alas such is not the case. Based upon the fact that I will never be done painting the inside of the house and my commode refuses to flush, I see my family crest showing crossed toilet plungers and a paint brush pointing skyward. Not as exciting as a lion or dragon but it seems to fit my accomplishments to date. I wonder if it is painful to commit hari-kari with a paint roller?



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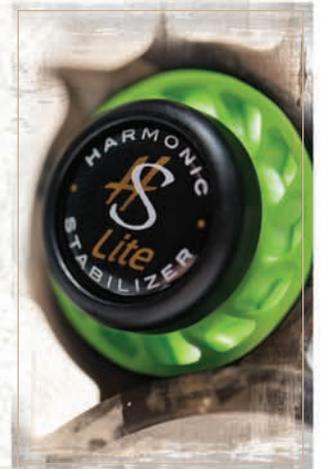
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