



“Too Long Have I Hunted Mammoth Alone!” Rick McWhorter

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We send our greetings from the wilds of Wyoming and our welcome to the far-flung atlatlists of the world. It will be our humble pleasure to host the 27th Annual Meeting of the World Atlatl Association here in Cheyenne on August 7-10, 2014. We are few in number but dedicated to the art, science, and camaraderie of the atlatl. This will mark our 7th year as the Wyoming Atlatl & Social Club, our 16th year hosting the Foothill-Mountain Atlatl Open, and most importantly, the 32nd consecutive year of atlatl competition in our state. We are steeped in our local tradition and lore but eager to see new faces and learn your exotic customs. It is our fervent hope you will make the long journey to join us in filling the air with darts, stretching our bellies with feasting, and gorging our memories with laughter and warmth.

The event will be held at the Trail's End Subdivision (Covered Wagon Road), which is a mobile home park. For a map of the location, please visit our web-site, wyasc.com. We will be conducting the contest in a discreet wild space within an urban environment. This location offers us a clubhouse with a kitchen and meeting/dining space as well as access to Crow Creek for the competition but we will be required to forebear annoying the residents. Here are some of the most pertinent details:

Accommodations- there will be camping on-site limited to four or five tents available on a first-come basis (or contact me for a reservation). Facilities (but no shower) will be available at the clubhouse. There are also several local campground/RV parks in Cheyenne as well as free primitive camping in the nearby Medicine Bow National Forest (30 miles). Use this web link to see a listing of campgrounds (<http://www.cheyenne.org/places-to-stay/campsites-and-rv-parks/>) and this one to view a listing of all hotels/motels in the area (<http://www.cheyenne.org/places-to-stay/all-hotels-and-motels/>). If you need additional information or recommendations contact me directly (contact information below).

Travel- arrivals can be made via interstate (I-80, Exit 362), plane (either Denver or Cheyenne), bus (Cheyenne) or train (Denver). Parking on-site is very limited but additional parking is close by, when you arrive you will be directed to a location.

What to bring- this will be a Blanket Prize event, you bring a prize to lay on the blanket and you take a prize from the blanket. Bring a prize (anything you think is desirable) and everyone wins. Bring money for a souvenir T-shirt (limited edition) and the silent auction, a chair if you can, your trade goods, your musical instrument, your good humor, and your very best throws. The schedule of events (if everything goes according to plan) is as follows:

Thursday August 7- arrivals, fun contests, Moche Toss, ISAC, silent auction begins.

Friday August 8- Depart Cheyenne at 9am and travel to the Lindenmeir Folsom site for a tour, then travel to Laramie for lunch and a tour of the UW Anthropology Museum, followed by an excursion to the Laramie Range where we will conduct an ISAC at 8,000 ft (probably the highest ISAC location in the world this year). We will have a 12-passenger van but some may need to drive their own vehicles. After returning to Cheyenne and a BBQ dinner the evening's entertainment will consist of an open-mic opportunity for presentations of atlatl-related topics. A laptop and projector will be available for slide shows, bring your presentation loaded on a thumb drive and please strive for a 15-20 minute show. Note: anyone not wishing to make the grand journey will be accommodated in Cheyenne with alternate activities.

Saturday August 9- Following a pancake breakfast the Crow Creek Challenge begins at 10am (registration begins at 9am, ISAC before and after the contest at your convenience). This will be a two part competition, the first part will be a 3D animal hunt consisting of three rounds of approximately 15+ targets (including Little Eric, our resident mammoth). You will be assigned a hunting group according to random choice. **Please note: the animal hunt will be a peg-shoot, meaning your foot must be in contact with the**

peg while throwing. If you are unaccustomed to this type of throwing then practice is suggested. **This part of the contest will be handicapped according to your last year's ISAC score** (men: 90+ = 6 points, 80-89 = 4 points, 70-79 = 2 points; women: 80+ = 6 points, 66-79 = 4 points, 50-65 = 2 points; youth: 70+ = 6 points, 56-69 = 4 points, 40-55 = 2 points).

The second part will consist of one round of the Coyote Contest, a series of challenging throws requiring all of your dexterity and derring-do and giving you the chance to make (or lose) a lot of points. Following the completion of the contest will be the WAA meeting, a catered chuckwagon feast with a yet-to-be-named home-brewed beer, the ending of the silent auction, and the awards ceremony/prize blanket. We will wrap it up with the dulcet tones of Cody and the Nighthawks (who may grace us with a rendition of 'Throwing in the wind') and s'mores toasted at the fire.

Sunday August 10-Final chance for glory with the last ISAC, fun throws, handshakes, hugs, and tearful goodbyes.

In addition to the scheduled activities Cheyenne and the surrounding area offer several activities and sights if you can find the time to avail yourself of them. Contact me for any specific inquiries.

There you have it, this is what we offer you at the end of the long trail to where we live, the chance to throw your darts at a mammoth in the state where it began for all of us, maybe the opportunity to meet the Grandfather, Rod Laird, a few good meals, time to see old friends and make new ones, and a guaranteed prize (as long as everyone remembers to bring one). We will be honored by your presence, enjoy you while you are here, and be saddened to see you leave. Bring your smiling face to Wyoming to support the World Atlatl Association and to help us celebrate the sport (and people) we all love.

See you soon,
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Russell on the back of his mammoth steed, Erik-AAAAA!

Reproducing the Atlatl from Spring Creek Cave, Wyoming

By Devin Pettigrew and Justin Garnett

The Spring Creek Cave atlatl is a small, curious device. The addition of some hypothetical attachments and a little experimenting could help explain the ancient weapons kit.

Setting: Spring Creek Cave is located high in the cliffs on the western edge of Wyoming's Big Horn Mountains, in a narrow, environmental transition zone between the mountains and the Big Horn Basin to the west. Such *ecotones* provided a larger variety of animal and plant resources for ancient peoples than the neighboring environments. While the mountains are fairly gradual and receive more precipitation, the basin has been likened to an arid, Great Basin-like environment. Just a few kilometers to the south is Daugherty Cave (Frison 1968), which housed similar cultural deposits, while approximately 27 kilometers to the north is

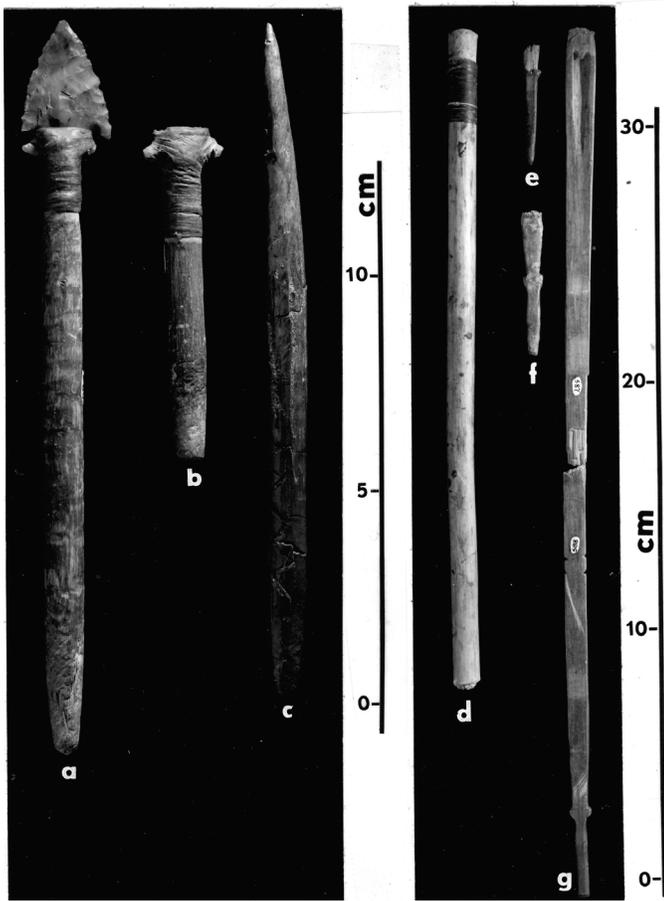
the Medicine Lodge Creek site, with extensive occupation and impressive rock art. (A visit to the latter is recommended.) Spring Creek and Daugherty Caves are suggested to have been seasonal campsites for mobile hunters.

Spring Creek Cave (SCC) was excavated by George Frison and crew in the 1950's (Frison 1965). The cave yielded a number of atlatl and dart artifacts, including 4 proximal (handle end) fragments, but only one distal fragment, which matched one of the proximal fragments to represent a nearly whole atlatl shaft. The wood of the atlatl was well-worked, painted with ochre and polished. While the SCC atlatl has many aspects of Basketmaker II atlatls from the Southwest—in the plano-convex shaft, square distal end, short loading groove and raised spur—it may also have characteristics of atlatls from the northern Great Basin and Northern Plains. Current research in Wyoming archaeology suggests a period of higher activity in the Bighorn Basin during the Late Plains Archaic (2000-1500 BP), with

the construction of pit-houses and a greater reliance on edible plants; similar to cultural remains from the Great Basin (Kornfeld et al. 2010:125-129). However, linkages with the Northern Plains are also suggested. Fittingly, artifacts from the Black Hills may represent the same weapon tradition (Weathermon 2010).

Bison bones make up the primary faunal deposits in SCC, with lesser numbers of antelope, sheep and deer. Hunters were likely taking advantage of game trails leading to isolated water resources in the mountains. Frison says of the whole atlatl from SCC:

Numerous people, avocational and professional archaeologists alike, questioned that an atlatl I recovered from a dry cave in the Big Horn Mountains of northern Wyoming was well enough designed and large enough to be effective on animals the size of deer and pronghorn, let alone bison. However, the one nearly complete specimen and the parts of three others were of similar dimensions, suggesting a commonly used weaponry type rather than an aberrant one (2004:209).



Atlatl artifacts from Spring Creek Cave. Image courtesy of the Paleo-Indian Research Lab at the University of Wyoming.

Experimental Reproduction: Both authors of this article have independently produced replicas of the SCC atlatl and thrown with them over a period of some years. Dimensional replicas have been produced and tested in a number of woods, including bush honeysuckle (*Lonicera spp.*), coyote willow (*Salix exigua*), Osage orange (*Maclura pomifera*) and white ash (*Fraxinus americana*); as well as skunkbrush (*Rhus trilobata*), the presumed material of the original. While one might imagine this slight atlatl would be best paired with abnormally light darts, this is not the case. Replicas throw well with darts of average Basketmaker II dimensions, and dart fragments from the caves are of similar materials and dimensions. Darts tested weighed between 30 to 85 gr, and most test throwing was done with willow darts weighing approximately 70 gr.

Presumably the artifact originally had no lower handle, simply a set of fingerloops affixed to lugs set above a tapered shaft at the proximal end. As a result of this handle-less condition, a very snappy throw is required, as levering from the wrist is difficult without a lower handle. To throw, the index and middle fingers are placed through the loops and the dart shaft is gripped between the middle, ring, and pinky fingers and the thumb. The actual throw is a fast, snappy motion terminating in the rapid closing of the hand, which swings the atlatl over quickly and enables a clean release. Dart velocity does not appear to be reduced relative to more “conventional” assemblages. This throw feels awkward at first, as it is quite different than most throwers are used to, but practice will allow one to get the hang of it rather quickly.

Hard finger loops seem to work best on the test replicas, as they enable a more solid connection between the fingers and the atlatl. Softer hide loops allow greater “play” in the system, and have a less responsive “feel” in the cast. The best performing finger loops in testing have been wooden, with designs based on the McClure atlatl from Oregon, in which sheep horn loops were fitted to a peg at the proximal end (similar examples are the Quiltanton Lake atlatl from BC Canada, and the whale bone atlatls from the Par-Tee site on the Oregon coast; see Pettigrew and Whittaker 2012). Essentially “8” shaped pieces of wood were drilled between the finger holes to receive the tapered proximal end of the atlatl shaft. Hard plastic loops were also tested

with good results, and presumably osseous materials would also work well. (Debris from working sheep and buffalo horn were common in the caves [George Frison, personal communication, 2012; Frison 1968]).

Experimental testing has shown the atlatl from SCC not to be an ineffective or miniature weapon. By adopting a throwing form more centered on the shoulder and hand, this short and fragile appearing tool can be used to great effect with darts typical of Archaic calibers found elsewhere in North America. The result is a light weapons kit more convenient for foot travel over great distances. With that said, this type may have had certain limitations due to a combination of formal and material constraints. The originals were made of the heartwood of skunkbrush—by stripping off the sapwood in order to achieve the plano-convex shape. This wood is tougher than the limited selection of others in the basin, yet still not especially hard, nor does it grow to sufficient sizes for a wider shaft. The presence of several broken handle ends could indicate a weakness in the design. The five handles and only one distal fragment may also suggest that the broken atlatls were being brought back to camp for removal of “expensive” accouterments—especially finger loops.

More aspects to consider: • A small 3cm long oval patch of resin on the bottom face below the double notches may indicate the attachment of a small weight or charm stone, as elsewhere in the arid West resin was used to aid weight attachment. Possible belemnite, calcite and steatite atlatl weights were found in the caves. • The double notch set may have been the location of a decoration or fetish, as were attached to some Western atlatls such as the Nine Mile Canyon atlatl with a deer tail attached above the weight, the Roaring Springs atlatls with feathered cords (see Pettigrew and Whittaker 2012), and hanging appendages in rock art (Whittaker et al. 2008). If the resin patch is incomplete, however, the notches may have been used to attach a longer weight (e.g. Kornfeld et al. 2010:Figure 8.7a, b). • The distal end of the atlatl shows wear best reproduced by grinding the end of a replica made of skunkbrush against concrete and stone, indicating the atlatl may have seen an ulterior function as a grinding implement for

pigment, plant fiber, etc. • Finally, testing has included velocity measurements, which indicate that these calibers are comparable with approximately 50lb traditional bows (see Whittaker 2013). Their effectiveness against bison in conventional penetration/hemorrhage hunting scenarios is questionable, but we have plans to test this further.

Measurements will be available in the online version at Basketmakeratlatl.com—or see Frison 1965. To see the Spring Creek assemblage, visit the Washakie Museum in Worland, WY.



Reproduction of the Spring Creek atlatl with hypothetical hard loops, accessories and willow dart with chokecherry foreshaft.

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Quest for the ISAC Crowns as of Mid-June

By Douglas Bassett

To date, 246 people (145 men, 58 women and 43 youth) have made 760 entries at 32 venues around the world. The top 10 in each division (12% of all the competitors) account for more than 28% of those entries, so let's see how they are doing (* denotes a personal best).

The top 10 youth have made 72 entries and 75% of their scores are in the top 10 scores (53 or above). Five youth have all made 100%. First Place, Chad Winkler (89-X*), has made 100% (10 out of 10 entries);

Score	Person	%	Ratio				
87-2X*	Jordan Ashley	100%	3/3	68*	Will Klumpenhauer	56%	5/9
86	Marlin Bassett	92%	24/26	65*	Peter Oles	100%	1/1
79-X*	Caleb Gates IV	63%	5/8	62	Carter Ashley	33%	1/3
72	Clancy Collins	100%	2/2	55*	Shane Barnett	100%	2/2
				53*	Makenna Coleman	13%	1/8

The top 10 women have made 46 entries and 52% of their scores are in the top 10 scores (57-X or above). Three women have made 100%. First Place, Bonnie Sortore (86-X), has made 67% (2 out of 3 entries);

Score	Person	%	Ratio				
81	Melissa Dildine	100%	6/6	63-X*	Dayna Turner	17%	1/6
70	Sue Mercer	70%	7/10	61*	Cheri Hughes	13%	1/8
69	Shannon Santos	50%	2/4	61	Deanne Weidman	50%	1/2
65-2X	JoAnne Fogelman	100%	1/1	60	Debbie Andrews	40%	2/5
				57-X*	Juanita Downs	100%	1/1

The top 10 men have made 95 entries and 51% of their scores are in the top 10 scores (87 or above). Two men have made 100%. First Place, Douglas Bassett (96-2X), has made 70% (28 out of 40 entries);

Score	Person	%	Ratio				
93-3X*	Jon Wood	25%	3/12	89-X*	James Turner	33%	3/9
91	Bob Kitch	20%	3/15	88	Mike Glenn	100%	1/1
90-X	Kevin Ashley	67%	2/3	87-X	Tom Goble Sr.	17%	1/6
90-X*	Ben Struzynski	100%	4/4	87-X	Teddy Eyster	50%	1/2
				87	Charles Swanson	67%	2/3

2013 ISAC Highlights from the Youth, Top 25, World Ranking and Aggregate Record Books

The complete updated information can be found on the WAA website by clicking to the ISAC page from the Home Page and then scrolling down and clicking on the following documents: "Top 25 List"; "Best Youth ISAC Scores by Age"; "ISAC Aggregate Records - '96-'13" and "2013 World Rankings". Also of note is that most everyone that made "The Board" this year has improved their world rankings amongst the 543 ranked competitors except that there was little change at the top, and alas, the rankings went down for those that did not compete. There are 30 new people that have been added to the Combined World Rankings.

One hundred twenty youth threw ISACs in 2013 and twenty-one threw five or more times. Marlin Bassett (89-2X), age 10 of New York, is this year's Youth Champion (**youngest in history**) – this 10-year old ranked **21st** out of the 595 competitors in 2013!!! He continues to lead as the most active thrower (only youth to throw more than 80 (268) career ISACs). He broke the record by 10 points for any 10-year old in ISAC history with # 8 youth score of all time and he is the most decorated youth in ISAC history at 86 decoration points. Ben Struzynski (88X), age 15 of Ogdensburg, WI - second time in the

Top 10 of five "Board Years" had the sixth highest score ever thrown by a 15-year old and # 10 youth score of all time. Fanny Jamon (84X), age 13 of France - fourth time in the Top 10 of four "Board Years" had the third highest score ever thrown by a 13-year old and # 17 youth score of all time. Jordan Ashley (82X), age 15, of Estill Springs, TN - **seventh** time in the Top 10 of a **record nine "Board Years"** had the thirteenth highest score ever thrown by a 15-year old and # 19 youth score of all time. Hunter Miller (65), age 14, of Brockway, PA is the only youth in ISAC history to have competed for **eleven year**.

Five youth join the ranks of the 46 youth who have averaged 40 or more points for at least five ISAC entries in a single year (with their Top 5 ISAC Aggregate following their names): Chad Winkler (65.64), age 13 of Bayfield, CO; Clancy Collins (62.60), age 15 of Durango, CO; Tim Zeh (61.20), age 15 of Phillipsburg, NJ; Gavin Andrew (58.62), age 15 of Durango, CO and Blake Williams (51.02), age 15 of Trenton, MO. Ten youth joined the ranks of 92 youth that have thrown 5 or more ISACs in a single year (with their game totals following their names): Caleb Gates IV (9), age 11 of Durango, CO; Quin Crist (8), age 12 of Durango, CO; Lance Strickland (8), age 10 of Spencer, NY; Michael Tracy (8), age 11 of Waverly, NY; August Gates (6), age 9 of Durango, CO; Abby Goudreau (6), age 10 of Athens, PA; Matt

Ciarapica (5), age 14 of Leon, WV; Makenna Coleman (5), age 12 of Durango, CO; Dawson Greene (5), age 12 of Ottumwa, IA and Zachary Santos (5), age 9 of Spencer, NY.

One hundred twenty-three women threw ISACs in 2013 and twenty-eight threw five or more times. Bonnie Sortore (89) of Friendship, NY - first time World Champion with all six years of her career in the Top 10 had the fifth highest score ever thrown by a woman, maintaining her career average over 60 (65.29), of only 6 women. Debbie Andrews (85) of Albany, OH - fifth time in the Top 10 of ten "Board Years" had the tenth highest score ever thrown by a woman. Melissa Dildine (83X) of Sayre, PA continues her dominance: the only woman to score more than 500 (576) points in the Total Point Aggregate Standings; the leader in career ISACs (444); the only woman to score more than 26,000 (31,330.2) career points. Ursula Räss (80X) of Switzerland - third time in the Top 10 of seven "Board Years" had the sixteenth highest score ever thrown by a woman. Sue Mercer (80) of Attica, NY - fourth time in the Top 10 of six "Board Years" had the seventeenth highest score ever thrown by a woman. Carey McCormack (78) of Carlsbad, CA - first time in the Top 10 of four "Board Years" had the twentieth highest score ever thrown by a woman. Shannon Santos (75X) of Spencer, NY - seventh time in the Top 10 of nine "Board Years" had the twenty-second highest score ever thrown by a woman.

Carey McCormack (60.06) joins the ranks of the 37 women who have averaged 50 or more points for at least five ISAC entries in a single year (with her Top 5 ISAC Aggregate following her name). Six women join the ranks of 108 women that have thrown 5 or more ISACs in a single year (with their game totals following their names): Cheri Hughes (12) of Durango, CO; Peggy Tracy (10) of Waverly, NY; Liz Reynolds (8) of Spencer, NY; Dawn Wagner (8) of Truxton, MO; Andy Held (7) of Hermann, MO and Sadie Granneman (5) of Cedar Rapids, IA. Also, two women joined the "Top 100 in the Combined World Ranking" with their rank and years on the board and averages as follows: #84 Sue Mercer (6yr - 73.35ave) and #91 Ursula Räss (7yr - 70.01ave).

Three hundred fifty men threw ISACs in 2013 and seventy-seven threw five or more times. Douglas Bassett (98-3X) of Warsaw, NY - fourth time as World Champion and seventh year with a top-five average over 95. Ryan Grohsmeyer (96X) of Rolla, MO - first time in the Top 10 of seven "Board Years". Ray Strischek (95X) of Athens, OH - thirteenth time in the Top 10 of a **record eighteen "Board Years"** and still ranked #2 in the world in ISAC History. Mark Bracken (94-2X) of Saegertown, PA - tenth time in the Top 10 and still ranked #3 in the world in ISAC History. Gary Fogelman (93X) of Turbotville, PA continued his leadership as the only man to score

more than 1775 (1889) points in the Total Point Aggregate Standings and is still ranked #1 in the world in the Combined World Ranking. Matt Grahm (92-2X) of Boulder, UT - first time in the Top 10 of two "Board Years" and he also threw a 90-2X from his knees. Jon Wood (90X) of Madison, MO became the 72nd person in history to score 90 or more.

Five men joined the ranks of the 142 men who have averaged 70 or more points for at least five ISAC entries in a single year (with their Top 5 ISAC Aggregates following their names): Roger Granneman (82.04) of Ottumwa, IA; Ben Struzynski (81.46) of Ogdensburg, WI; Nathan Rorebeck (81.06) of Trenton, MO; Jerry Nevins (76.54) of Jefferson City, MO and Jim Hughes (74.32) of Durango, CO.

Ten men joined the ranks of 330 men that have thrown 5 or more ISACs in a single year with the number of games that each threw in parentheses: Kevin DeChant (11) of Holts Summit, MO; Brian Wagner (8) of Truxton, MO; Robby Bornemann (6) of Kettering, OH; Tom Bornemann (6) of Kettering, OH; Mori Costantino (6) of Berkley, CA; Mike Greene (6) of Ottumwa, IA; Chris Lawson (6) of Chemung, NY; Carl Demuth (5) of Oxford, NY; Caleb Gates III (5) of Durango, CO and Darel Ransford (5) of Durango, CO.

Six men joined the "Top 100 in the Combined World Ranking" with their rank and years on the board and averages as follows: #76 Matt Graham of Boulder, UT (2yr - 91.15ave); #78 Michael Frank of Woodbridge, WV (6yr - 85.12ave); #85 Gary Sipila of Hewitt, NJ (5yr - 85.48); #94 Lawrence Ariel of Huntland, TN (8yr - 81.53ave); #96 Christophe Jamon of France (5yr - 85.26ave) and #97 David Sheppard of Cheyenne, WY (5yr - 85.86ave).

And hats off to Ray Strischek of Athens, OH who is the only person to throw five or more ISACs every year since the beginning in 1996 and has excelled each year, also, by being in the top five every year of the Total Point Aggregate Standings! Keep it going Ray!



Summary of the World Atlatl Day – 2014

By Douglas Bassett

From the first Saturday of June, June 7th this year, 92 people summited scores from 9 venues representing 10 states and making 135 entries as 45 teams with the results as follows:

Top Five States

Ohio	244-2X	New York	235-3X
Pennsylvania	240-2X	Wisconsin	232-2X
West Virginia	227-2X		

Because there were two different distances and various combinations of team members there are 58 possible combinations of team composition with the top teams as follows (Note that in three person teams of combined division and, or distance - the first noted combination means that there were two people in that particular division or distance):

Team Rank

State Rank

Single Division and Single Distance Teams

1	Men 25 meters	244-2X	1	OH – Ray Strisczek (96-2X), Mamerto Tindongan (87), Doug Owens (61)
4		234-X		OH/WV – Randy Whaley (83-X), Mamerto Tindongan (81), Doug Owens (70)
6		232-2X	4	WI – Ben Struzynski (84-X), Glen Oechsner (75-X), Len Riemersma (73)
7		231-3X		OH/WV – Randy Whaley (80-2X), Ray Strisczek (79), Mamerto Tindongan (72)
9		225-2X		WI – Ben Struzynski (87-2X), Len Riemersma (77), Gordy Behrendt (61)
		213	6	MO – Blake Williams (78), Scott Rorebeck (72), Steve Spencer (63)
	Men 15 meters	208		WI – Jerry Prahel (70), Ryan Prahel (69), Joe Struzynski (69)
	Women 15 meters	146		CT/MA – Linda Nolf (58), Sarah Manstan (38), Leslie Masson-MA (50)
	Youth 15 meters	112-X		AZ – Kade Brown-15 (62), Gunnar Brown-13 (44-X), Tristen Jansen-13 (6)

Three Division Teams

8	Mix 15/25	227-2X	5	WV – Matt Ciapapica-14 (92-X), Nisa Holbrook (66), Randy Whaley (69-X)
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Combination Teams

5	M/W 25	232-7X		PA – Jack Rowe (87-3X), Gary Fogelman (83-2X), JoAnne Fogelman (62-2X)
10	M/Y 25	223-X		NY – Douglas Bassett (83), Tom Goble Sr. (64), Marlin Bassett-11 (76-X)
3	Men 25/15	235-3X	3	NY – Douglas Bassett (97-3X), Dave Santos (77-X), Richie Beavers (61)
2	W/M 25/15	240-2X	2	PA – Melissa Dildine (72), Gizzy Rowe (73-X), Jack Rowe (90-X)
	M/W 15/25	183-3X		WI – Glen Oechsner (81-2X), Ryan Prahel (50), Patsy Newmann (52-X)
	M/Y 15/25	210	7	CA – Teddy Eyster (90), Evan Larson (72), Parker Godfrey-12 (58)
	M/W 15	199		CA – Eric Ahnmark (86), Mark Dellings (69), Katy Griswold (34)
		182	8	AZ – Bob Sizemore (83), Charles Tadano (72), Helene Dammen (27)
		177	9	CT – Tyson Nolf (72), Josh Feeney (49), Rachel Cooke (56)
		175-2X	10	CT/MA – Tyson Nolf (71-X), Josh Feeney (62-X), Leslie Masson-MA (42)
	M/Y 15	66		AZ – Jordan Bratt (14), Aaron Bratt (7), Kade Brown-15 (45)
	W/M 15	35		AZ – Claire Finley (7), Mona McEuen (7), Pete Huerta (21)
	W/Y 15	96		CT/MA – Leslie Masson-MA (48), Sarah Manstan (38), Amanda Hopkins-6 (16)
	Y/M 15	77		PA – River Pisarchick-8 (26), Austin Tami-8 (13), Tom Grover (24)

Top Individual Scores

25 meters

Men - Top 10

97-3X	Douglas Bassett (NY)
96-2X	Ray Strisczek (OH) <i>(last shot was 6)</i>
91	Mamerto Tindongan (OH)
90-X	Jack Rowe (PA)
90	Teddy Eyster (CA)
88-2X	Lenny Riemersma (WI)
87-2X	Ben Struzynski (WI)

84-X	Dave Santos (NY)
83-2X	Gary Fogelman (PA)
83-X	Randy Whaley (WV)

Women - Top 3

72	Melissa Dildine (PA)
62-X	JoAnne Fogelman (PA)
45	Shannon Santos (NY)

Youth - Only one

76-X	Marlin Bassett - 11 (NY)
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15 meters

Men - Top 10

86	Eric Ahnmark (CA)
83	Bob Sizemore (AZ)
72	Evan Larson (CA)
72	Tyson Nolf (CT)
72	Charles Tadano (AZ)
70	Jerry Prah (WI)
69	Mark Dellings (CA)
69	Ryan Prah (WI)

69 Joe Struzynski (WI)

69 Tom Wax (AZ)

Women - Top 3

73-X	Gizzy Rowe (PA)
66	Nisa Holbrook (WV)
58	Linda Nolf (CT)

Youth - Top 3

92-X	Matt Ciarapica - 14 (WV)
62	Kade Brown - 15 (AZ)
44-X	Gunnar Brown - 13 (AZ)

Many people participated in several teams and Ray Strischek (OH) & Mamerto Tindongan (OH) were the most active as members of four teams. Also 28 people made 45 entries with scores of 70 or more with their combined average scores for each distance as follows (Note that an X was tallied as 10.1):

5M – 90 attempts	10M – 108 attempts	15M – 108 attempts	20M – 72 attempts	25M – 72 attempts
9.82 (21 X's)	8.91 (12 X's, 1 miss)	7.75 (8 X's, 9 misses)	7.11 (3X's, 8 misses)	6.17 (1X, 12 misses)

In other words, if you intend to hunt, hunt close for the kill shot.

Arizona World Atlatl Day

By: Robert Sizemore

What a difference a little publicity makes. Atlatl Day in Phoenix, AZ was overwhelming! We counted over 325 people that came out to the Pueblo Grande Museum to experience the atlatl. Even with temperatures that reached 104 degrees, the turnout was amazing. I believe that we have the publicity from local media to thank for that.

First, the S.A.L.T. group, a local primitive skills organization, contacted Pueblo Grande Museum and asked if they would host the event. They agreed, and added it to their schedule. The Arizona Republic Newspaper picked up on the event and contacted us for an interview. Charlie Tadano and I spent about 2 hours doing interviews and a video. The result was a midweek front page story about the atlatl and the upcoming Atlatl Day. They also posted it on their online version of the newspaper, which included a video and a TV spot on the morning news.

Other news outlets picked up on this and we conducted another interview with a smaller paper, a radio interview, and finally a live video the morning of the event with another TV station. I thought that the purpose of World Atlatl Day was to promote the atlatl and give people a chance to experience atlatl firsthand, not just another local or group meeting. I believe that we accomplished that through the good fortune of media outlets looking for a different story.

So in the future, we won't just leave it to chance. We will contact the local TV and newspaper and let them know about upcoming events.

If you are fortunate enough to get media coverage, then brace yourself for a big turnout.



Charlie Tadano demonstrates for participants at the World Atlatl Day event in Phoenix.

The World Atlatl Association, Inc.

International Standard Accuracy Contest (ISAC)

12-Jun-14

2014 ISAC Results for Men (70 and above)

Place	* Tie Placement	Score	Name	Home	St	Date	Contest
1		96xx	Douglas Bassett	Warsaw	NY	3/29/2014	Jim's Pro Shop, Shortsville, NY
2		93xxx	Jon Wood	Madison	MO	2/16/2014	Columbia, MO
3		91	Bob Kitch	Husum	WA	2/15/2014	Winter Count, Maricopa, AZ
4		90x	Kevin Ashley	Estil Springs	TN	5/2/2014	Old Stone Fort, Manchester, TN
5		90x	Ben Struzynski	Ogdensburg	WI	6/7/2014	Glen Oechsner's, Campbellsport, WI
6	*	89x	James Turner	Durango	CO	2/13/2014	Winter Count, Maricopa, AZ
7		88	Mike Glenn	Lucasville	OH	4/26/2014	Leo Petroglyphs State Memorial, OH
8	*	87x	Tom Goble Sr	Emira	NY	2/11/2014	Groundhog Shoot, Elmira, NY
9	*	87x	Teddy Eyster	Oakland	CA	5/10/2014	Walnut Creek, CA
10		87	Charles Swanson	Knoxville	TN	5/2/2014	Old Stone Fort, Manchester, TN
11		86xx	Jack Rowe	Sayre	PA	6/8/2014	Atlats in Action, Elmira, NY
12	*	86x	Greg Maurer	Vergennes	VT	1/11/2014	Jim's Pro Shop, Shortsville, NY
13	*	86x	Gary Fogelman	Turbotville	PA	6/7/2014	Atlats in Action, Elmira, NY
14		86	Ray Strischek	Athens	OH	6/7/2014	Athens Library, Athens, OH
15	*	85xx	Lawrence Ariel	Huntland	TN	5/2/2014	Old Stone Fort, Manchester, TN
16	*	85xx	Jim Gnapp	Abbotsford	BC	2/15/2014	Winter Count, Maricopa, AZ
17	*	85xx	Mamerto Tindongan	Albany	OH	4/26/2014	Leo Petroglyphs State Memorial, OH
18	*	85	Austin Fisher	Grand Island	NY	1/18/2014	Jim's Pro Shop, Shortsville, NY
19	*	85	Albert Kressig	Seewis	SWITZERLAND	6/8/2014	Saint Hubert, Belgium
20	*	85	Scott Rorebeck	Trenton	MO	5/3/2014	Raging Cow, Grinnell, IA
21		84	Michael Hermann	San Clemente	CA	3/14/2014	Valley of Fire, NV
22		83xx	Steven Spencer	Trenton	MO	5/17/2014	Osage Knap-in, Boonville, MO
23		83x	Pascal Chauvaux	Cerfontaine	BELGIUM	6/8/2014	Saint Hubert, Belgium
24		83	Jim Hughes	Durango	CO	2/9/2014	Winter Count, Maricopa, AZ
25		83	Erich Zeh	Phillipsburg	NJ	4/25/2014	Earth Day, Elmira, NY
26		82	Steve Barnett	Pomeroy	OH	4/26/2014	Leo Petroglyphs State Memorial, OH
27		82	Ryan Grohsmeyer	Rolla	MO	2/16/2014	Columbia, MO
28		82	Randy Whaley	Leon	WV	4/26/2014	Leo Petroglyphs State Memorial, OH
29		81	David Santos	Spencer	NY	6/7/2014	Atlats in Action, Elmira, NY
30		80xxx	Jerry Nevins	Jefferson City	MO	3/22/2014	Jake's Day, Hermann, MO
31		79x	Russell Richard	Cheyenne	WY	3/17/2014	Valley of Fire, NV
32		79	Kevin Verhulst	Ottumwa	IA	6/7/2014	Granneman Field, Ottumwa, IA
33		78x	Scott Van Arsdale	Otego	NY	4/26/2014	Earth Day, Elmira, NY
34		78	Jim Fisher	Grand Island	NY	1/11/2014	Jim's Pro Shop, Shortsville, NY
35		78	Jesse Martin	San Marcos	CA	3/13/2014	Valley of Fire, NV
36		77x	Terry Ashley	New Market	TN	5/3/2014	Old Stone Fort, Manchester, TN
37		77	Chris Henry	Palouse	WA	3/17/2014	Valley of Fire, NV
38		77	Lenny Riemersma	Cascade	WI	5/3/2014	Wausau School Forest, Mosinee, WI
39		76	Glenn Purpura	Moab	UT	2/13/2014	Winter Count, Maricopa, AZ
40		76	Bruce Weidman	Walnut Creek	CA	5/1/2014	Buckeye Gathering, Lake Concow, CA
41		75	Tim McAllister	Leon	WV	4/26/2014	Leo Petroglyphs State Memorial, OH
42		74	David Sheppard	Cheyenne	WY	1/26/2014	David/Mariah Lot, Cheyenne, WY
43		73	Thomas Chauvaux	Cerfontaine	BELGIUM	6/8/2014	Saint Hubert, Belgium
44		73	Berg Berg	Candor	NY	6/7/2014	Atlats in Action, Elmira, NY
45		72	Martin Chauvaux	Arlon	BELGIUM	6/8/2014	Saint Hubert, Belgium
46		72	Brian Wagner	Truxton	MO	2/16/2014	Columbia, MO
47		71	Dave Patterson	Ashland	MO	1/26/2014	Columbia, MO
48		71	Scott Sharp	Trenton	MO	5/17/2014	Osage Knap-in, Boonville, MO
49		70	Favien Beauquel	Fagnieres	FRANCE	6/8/2014	Saint Hubert, Belgium
50		70	Justin Garnett	Kansas City	MO	5/18/2014	Osage Knap-in, Boonville, MO

2014 ISAC Results for Women (50 and above)

Place	* Tie Placement	Score	Name	Home	St	Date	Contest
1		86x	Bonnie Sortore	Friendship	NY	5/2/2014	Sortore Farm, Friendship, NY
2		81	Melissa Dildine	Sayre	PA	6/8/2014	Atlats in Action, Elmira, NY
3		70	Sue Mercer	Attica	NY	5/25/2014	Spearfishing Derby, Letchworth St Park, NY
4		69	Shannon Santos	Spencer	NY	6/6/2014	Atlats in Action, Elmira, NY
5		65xx	Joanne Fogelman	Turbotville	PA	6/7/2014	Atlats in Action, Elmira, NY
6		63x	Dayna Turner	Durango	CO	5/22/2014	Durango, CO
7	*	61	Cheri Hughes	Durango	CO	2/11/2014	Winter Count, Maricopa, AZ
8	*	61	Deanne Weidman	Walnut Creek	CA	5/10/2014	Walnut Creek, CA
9		60	Debbie Andrews	Albany	OH	4/26/2014	Leo Petroglyphs State Memorial, OH
10		57x	Juanita Downs	Cadiz	KY	5/3/2014	Old Stone Fort, Manchester, TN
11	*	57	Gina Lunn	San Clemente	CA	3/16/2014	Valley of Fire, NV
12	*	57	Gizzy Rowe	Sayre	PA	4/26/2014	Earth Day, Elmira, NY
13	*	57	Nisa Holbrook	Charleston	WV	6/7/2014	Athens Library, Athens, OH
14		51	Andy Held	Hermann	MO	1/26/2014	Columbia, MO

2014 ISAC Results for Youth (40 and above)

Place	* Tie Placement	Score	Name	Home	St	Date	Contest	AGE
1		89x	Chad Winkler	Bayfield	CO	2/14/2014	Winter Count, Maricopa, AZ	14
2		87xx	Jordan Ashley	Estil Springs	TN	5/3/2014	Old Stone Fort, Manchester, TN	15
3		86	Marlin Bassett	Warsaw	NY	5/18/2014	Jersey Rock & Shoot, Washington, NJ	11
4		79x	Caleb Gates IV	Durango	CO	5/30/2014	Durango, CO	12
5		72	Clancy Collins	Durango	CO	5/22/2014	Durango, CO	15
6		68	Will Klumpenhauer	Durango	CO	2/14/2014	Winter Count, Maricopa, AZ	13
7		65	Peter Oles	Durango	CO	5/22/2014	Durango, CO	13
8		62	Carter Ashley	Estil Springs	TN	5/2/2014	Old Stone Fort, Manchester, TN	11
9		55	Shane Barnett	Sonoma	CA	4/30/2014	Buckeye Gathering, Lake Concow, CA	12
10		53	Makenna Coleman	Durango	CO	5/22/2014	Durango, CO	13
11		46	Quin Crist	Durango	CO	2/13/2014	Winter Count, Maricopa, AZ	12

*indicates ties which have been placed in their proper order, using the tie breaker rule

TIME TO VOTE

WAA CANDIDATE STATEMENTS 2014

PRESIDENT

Courtney Birkett (VA)

I first got involved with the atlatl as one of the first members of the Grinnell College atlatl team in 1997. (A childhood drawing of atlatls that I recently rediscovered suggests it may in fact have always been my destiny to be an atlatlist.) In my almost ten years as Executive Secretary I've seen all the inner workings of the WAA. The ensuing familiarity with WAA procedures was excellent preparation for any future positions on the Board. I'm committed to promoting the atlatl and especially to having fun with it. I would be honored to serve as president of the WAA.

EXECUTIVE SECRETARY

Regina Dodson (WY)

I would be honored to give back to an organization and membership that has helped fulfill many Atlatl adventures for me during the past 16+ years. I believe my past work experience in both the private and governmental sector helps me bring a set of skills to the secretary position that will enable me to fulfill this position as set forth by our by-laws. I am well versed in non-profits, their structure and boards. I am a Wyoming native, mother of four and grandmother of seven. All my children were atlatlists at one time or another. My eldest daughter and her husband are still avid throwers. I look forward to seeing the next generation throwing and carrying on the tradition.

BOARD OF DIRECTORS

European Member

Bernard Bouffier (FR)

I would like to serve on the WAA Board as the European representative. I am a prehistorian, passionate about the atlatl and I have promoted prehistory to the public for about 20 years. Visitors are throwing spears there every day since 20 years. Since 20 years I participated at the *European Championship of Prehistoric Archery and Spear throwing*. On the championship at first I did not draw the bow because I am passionate about the atlatl. Pascal Chauvaux introduced me to the ISAC. I encourage organizers to use the ISAC to know more about the spearthrower. I am a member of WAA past few years and I found other members in France who can validate ISAC because I do not always go everywhere in Europe. I'm up to publicizing the atlatl media:TV, newspapers, radio producing events. I circulate an exhibition created by Chauvaux, Cattelain, and Stodiek that I updated. I have written three articles for archery magazine in France who know the atlatl, regarding shooting techniques, materials, and manufacturing. Here is the great interest that I have for the spear thrower.

US Members

Anita Lukes (IN)

Thanks for considering me for the WAA Board. I would be pleased to serve again and now that work and home moves are over Frank and I will be able to get to a number of events this year.

Glen Oechsner (WI)

I have been attending the annual meetings for the last 6 years. At each meeting I have enjoyed the diverse group of people that share the same passion as I do for the Spearthrower. My style has developed into the primitive class. I enjoy making my equipment from natural materials including banner stone counter weights on my throwers. If elected I would like to do my part to run this Association to the best of my ability. I have and will continue to promote the Association by teaching and demonstrating at all our state events. For the last 5 years I have taught the 6th grade camping event at our local school the history and dynamics of using the spear thrower.

Devin Pettigrew (AR)

I feel that the position of board member for the WAA would enhance my new position as editor of *The Atlatl quarterly* newsletter by providing me with a better understanding of the inner workings of the Association—a nice addition since a key role of the newsletter is to provide its members with information about developments within the association. I also feel that my role as board member would be good for the association directly. I have been experimenting, studying, and enjoying atlatls for about 15 years, and have written a thesis and several articles about the atlatl. Additionally I have been to numerous events, including annual visits to Cahokia and the Valley of Fire. I also host an informative website along with board member Justin Garnett (Basketmakeratlatl.com).

Robert Sizemore (AZ)

I've been a member of the WAA since the late 90s and previously served one term as a board member. For most of those years since joining WAA I have organized events in Arizona. If I'm elected to the board I will work to promote the atlatl and increase membership of the WAA. In addition, I will help the president and other Board members move WAA's agenda forward.

James Turner (CO)

I have been a member of the World Atlatl Association for about 2 years. My friend Jim Hughes and I run an after school atlatl club at the school where we work in Durango, CO. Our school is an alternative school that uses a lot of hands-on outdoor skills in the curriculum. Our kids have really picked up atlatl. Last season we hosted 7 ISAC's and this year we have 8. Our kids make their own setups and practice during recess. The atlatl is a great way to connect with kids and our students have put in the time practicing as evidenced by the youth leader board. I love the sport/skill of atlatl and have introduced about 30 people to ISAC tournaments. I feel that I have a good understanding of the philosophy of the WAA and look forward to possibly serving on the board.

**WAA BALLOT
2014**

President _____ Courtney Birkett (VA)

Executive Secretary _____ Regina Dodson (WY)

Board of Directors

European Member _____ Bernard Bouffier (FR)

US Members (Vote for three)

_____ Anita Lukes (IN) _____ Glen Oechsner (WI) _____ Devin Pettigrew (AR)

_____ Robert Sizemore (AZ) _____ James Turner (CO)

(Please Review Election of WAA Board Members)

Mail your ballot(s) postmarked by July 24, 2014 to:

Courtney Birkett (Executive Secretary)
5 Grove Ave.
Williamsburg, VA 23185

WAA NOMINATING COMMITTEE STATEMENT

The WAA Nominating Committee is pleased to present the Officer and Board Candidates for the 2014 election. As has often been the case in past elections, the Committee nominated one person each for the Officer positions and for the European Board position. We have nominated five individuals to fill the three open US Board positions. We feel that any of these five candidates would make an excellent Board member, and each would bring a unique set of skills and/or experience that would allow them to contribute to the viability of the WAA. We note that while no nominations came from the membership, the Nominating Committee consulted with a number of WAA members during the nominating process.

Len Riemersma, Jon Wood, and Ron Mertz, Chair.



ELECTION OF WAA BOARD OF DIRECTORS

Voting for WAA Board of Directors may be done by mail or in person at the WAA Annual Meeting on August 9, 2014 in Cheyenne, Wyoming. To vote by mail you must fill out the ballot and return it to: Courtney Birkett, 5 Grove Ave., Williamsburg, VA 23185 postmarked no later than July 24, 2014.

The back of the envelope must be legibly signed by each person voting and have the word **BALLOT written on it. Use one ballot for each eligible voter. Families voting may print additional ballots as needed and place all their ballots in the same envelope when mailing them.**

To be eligible to vote, one must be a WAA member 18 years old or older with dues current on the date of the WAA Annual Meeting. Members cannot give their ballot to anyone else nor allow anyone else to fill out their ballot.

The following categories of membership have been established and votes designated for each category.

A. Individual: One person - one (1) vote

B. Family: Any member of an immediate family living on the same property: Each member (18) years of age or older will have one (1) vote. If additional ballots are needed for family members, copies can be made or they may be hand written.

C. Institutional: One (1) vote

D. Supporting: One (1) vote

E. Contributing: One (1) vote

F. Fellow-Lifetime membership: One (1) vote

Votes will be counted at the annual meeting and results announced that evening and in the *ATLATL*.



Atlatlists firing darts at Erik-AAAA! Twas a mammoth spectacle. Hell Gap, Wyoming, 2011.

Clovis Atlatls

by John C. Whittaker
for The Atlatl, June 26, 2014

When pursuing pachyderms, prudent prehistoric predators preferred projectiles. Atlatls provide a powerful weapon at a safer distance from angry big game than a thrusting spear. Most of us believe that at least some Clovis points armed atlatl darts. We don't have a lot of direct evidence of Clovis atlatl use, but there are good reasons to expect it. Although some Clovis points are quite large and were likely knives or thrusting lance heads, the small to medium sized Clovis points are a good size for large atlatl darts. They have been found with the bones of mammoths they killed, and some have impact fractures suggesting relatively high-velocity impacts. Frison's experiences with culled elephants in Africa demonstrate that Clovis points on atlatl

darts can produce killing wounds on elephants. Now we have also a handful of atlatl hooks from Florida rivers that are probably of Clovis age. They are not from good datable archaeological contexts, but they are made of bone and ivory from Pleistocene fauna.

Not long ago, I was asked to speculate more about Clovis atlatls. Metin Eren is an archaeologist who works with Clovis and Levallois lithic technology. As well as being an expert flintknapper, he has good connections in the world of documentary film, and has participated in a number of productions. A British film company making a film on early prehistoric America wanted to do a segment on Clovis, filming at a possible Clovis rock shelter in Oklahoma being excavated by Brian Andrews of Roger's State University. Metin was to knap a Clovis point and demonstrate its use on an atlatl. He asked me to produce a suitable atlatl, darts, and foreshaft

hafting for his Clovis points. (I told the film team that if I wasn't going to be filmed for the throwing, I wanted to be in the credits as "Clovis Armourer.")

The atlatl I made is quite simple, but it demonstrates nicely the usual mix of evidence and imagination in any good reconstruction of an archaeological object (Figure 1). I assumed that a Clovis atlatl should be fairly stout and long, as it should be used to throw heavy darts, consistent with the relatively large size of the Clovis points found with butchered mammoth remains. Some Australian spears and spearthrowers provide an ethnographic model - large, long atlatls, and darts that are much heavier than what I usually throw, sometimes armed with very heavy stone or metal points. Clovis atlatls could have resembled Upper Paleolithic atlatls from Europe. There is no evidence of elaborate artistic work on bone or antler from Clovis-era sites in America, but some of the lesser-known atlatl parts from the Upper Paleolithic are fairly simple hooks that could have been attached to a simple rod-shaped atlatl. Or Clovis atlatls could have been ancestral to the Southwestern and Mexican forms, with finger holes or organic loops, but we don't know. As we have no real idea what a Clovis atlatl would have looked like, I kept the form simple, making it comfortable to my hand, sturdy, but with a groove down the center to lighten it a bit.

For the hook, we have a bit more to go on. My hook is not a close replication, but is modeled on one specimen from the Santa Fe River in Florida (Bradley, Collins, and Hemmings 2010:119, 130). That piece is reworked from a fragment of one of the long ivory rods that are sometimes found in Clovis sites. These are considered by some to be lance points, by others to be foreshaft parts for hafting Clovis points, and there are other theories as well, but we don't have to worry about them here. This hook actually tells us quite a lot, and my hook follows the important features. The archaeological specimen is large, 7.5 cm long (3 inches), and stout. It is beveled on the bottom to join it to the atlatl at the proper angle, and the hook that engages the dart has been isolated and shaped to fit. The upper surface is heavily scored to prevent a lashing from slipping off the sloped surface. This tells us that some kind of organic lashing held the hook on the atlatl. Again, we have no examples of Clovis cordage, but it is hard to imagine Pleistocene people surviving without sophisticated understanding of fiber and cordage for lashing, sewing, and making such equipment as nets. I also wanted my atlatl to look nice, so instead of just lashing the hook on with raw sinew, I twisted up a simple sinew cord. I added hide glue to make sure the attachment was

strong, and to prevent the sinew from softening and loosening in the humid weather of Oklahoma.

I already had large cane darts. Were Clovis darts fletched? We don't know, but mine were. The hollow cane made it easy to insert and change foreshafts, which was important, because I had to make foreshafts and haft Metin's points on site, and then fit them to a dart for throwing. In the end, the hafting process was not filmed, but I was pleased to find that with all my materials ready on hand and a foreshaft shaped, I could haft a point in a few minutes. Once again, we are not sure how Clovis points would have been hafted. Many have dulled lower margins, which suggests that lashing was part of the arrangement. Some quite elaborate hafting theories have been proposed to explain the distinctive fluting or the occasional association of points with beveled rods. Some of these theorists want Clovis points to be harpoons, or to loosen from their haftings and remain in the wound, or to be buffered from breakage in some way. I have never felt that Clovis hafting needed that much explanation. Fluting is one good way to thin the base of a large point, and a simple hafting in a slotted foreshaft does the job nicely. Figure 2 shows a fluted point made by Metin Eren, hafted in my foreshaft with tempered pine pitch and sinew lashing.

With the point and foreshaft, my cane dart was 2.29 m (90 inches) long, and weighed 152 grams (5.4 oz). At about 15 m, Metin's throws at one of our usual foam targets drove the dart through it beyond the base of the large point. Hardly a mammoth hide, but it convinced me that a Clovis point on a heavy shaft was real effective. After the filming, we set up on the university campus, since I had my radar gun along. Metin threw the heavy dart at between 46 and 53 mph, a middling speed compared to those I have been measuring from atlatlists at recent events, but quite enough to give the heavy dart a lot of punch. The university dean who had been watching us wanted to try, and sent my dart into the trees while the atlatl bounced on the sidewalk. Another archaeologist then chopped my spare dart in half, while a student managed to hit the target. Be careful who you let use your equipment.

In any case, it was interesting to think about Clovis atlatls, and also to see a small but expert film team assembling footage for a production. Look for something from Wall to Wall films in a year or so.

Bradley, Bruce A., Michael B. Collins, and Andrew Hemmings

2010 *Clovis Technology*. International Monographs in Prehistory, Ann Arbor, MI.

Editor's Corner

Greetings all, I have taken on the role as editor of *The Atlatl* to relieve the stress on our former editor, Ken Faucher. Ken was experiencing some health challenges that were making the job difficult, though he is now thankfully reporting improvements. As some may know I am a fellow atlatl crazy and also a student of archaeology. I am on the cusp of completing a master's with an emphasis on experimental archaeology (the atlatl—of course!). While I am editor, I will attempt to follow in the footsteps of our former great editors (though please be patient as I learn the ropes), and to faithfully report the atlatl news. Due in part to my interests, but also the presumed benefits of higher education, I intend on bringing more 'sciencey' articles into the newsletter, as I hope the articles in this issue will illustrate. I think the ancient cultural heritage of this weapon system puts it in a real perspective that most of us find fascinating and inspiring. Thanks for reading.

~Devin

Experiments with Archaic Beveled Dart Points: Preliminary results

by Devin Pettigrew

In a recent article in *American Antiquity*, a theory was introduced claiming that single bevel projectile points could induce spin on an atlatl dart in flight, thus producing effects similar to rifling (Lipo et. al 2012). The spinning effect was postulated to stabilize the dart and increase accuracy. This theory was tested by mounting beveled points on a small, straight shaft in a wind tunnel and measuring the displacement of air blowing around the point.

Subsequently the theory was further tested by John Whittaker, Justin Garnett and the author by mounting two types of beveled points to atlatl darts and watching their flight with a high-speed camera. The results were the same as those with no bevels (i.e. double bevels—when both faces of a point are beveled). Two sets of stone points and exaggerated wooden points, both sets with and without bevels, were tested. Fletched and fletchless river cane, and reproduction willow Basketmaker darts were thrown with the points at 15m and further.

In typical dart flight three generalized characteristics can be seen: oscillating, spinning and rotating. **Oscillation** occurs as transverse waves travel back and forth through the dart as a result of its compression and launch. (Contrary to spring-theory, our slow-motion films show consistently that the dart leaves the atlatl spur fully flexed, so no spring action is present.) As a result of oscillation the shaft might **spin** irregularly. Atlatlists often use "spine" to refer to the pressure required to cause a shaft to flex, however it can also refer to the side the shaft prefers to bend on; usually a result of it not being perfectly straight, though every shaft has a weak side. As the shaft oscillates, it can quickly spin to align its spine with the direction of flex. Spinning can even stop, or change direction during flight depending on the spine and angle of oscillation. **Rotation** can also be induced through lateral discrepancies in the atlatlist's throw, and appears as a kind of 'crank-shaft' effect. While some dart flights show almost pure oscillation or rotation, most show a combination of at least two, if not all three effects.

The experiment by Lipo and his colleagues showed that a single bevel point like the one pictured here could induce spin on a straight shaft traveling through the air, but did not account for the flight characteristics of an atlatl dart, which have heretofore been under-reported. Our results have shown that any air resistance against the bevels is not significant enough, even with exaggerated bevels, to overcome the wonky flight of an atlatl dart.

We are still testing the effects of single bevels when the dart enters a body. Bow hunters are beginning to use single bevel points due to claims that they spin in prey, thus torqueing and splitting bone, and cutting a larger wound path. This may be the case with Archaic beveled points as well, though we like the common theory that (despite these possible effects) beveling was usually the result of unifacial resharpening, since most of these point types when first made have straight, bifacial edges. The above results, and those to be seen, will be reported in detail in an up-coming publication.



Front, back, side and head-on views of an ancient beveled "Searcy" point from Saltpepper Cave, Searcy Co., Arkansas. AAS Collections.

Lipo, C. P., R. C. Dunnell, M. J. O'Brien, V. Harper, and J. Dudgeon

2012 Beveled Projectile Points and Ballistics Technology. *American Antiquity* 77(4):774-788.

Devin Pettigrew

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The WORLD ATLATL ASSOCIATION, Inc.



Clovis atlatl tackle by John Whittaker—
with spur based on an artifact from Florida rivers.