Vol. IX No. 4 October-December, 2014

LSA Quarterly

2014 Legislator of the Year Recipient

Rep. Joseph Lopinto

Contents

Meeting of Members and Elections

Saturday, 28 February 2015

The 2015 Annual Meeting of Members and Elections, which will be held on Saturday, 28 February 2015 at Cabela's, 2200 W. Cabela's Parkway, Gonzales, LA in the upstairs meeting rooms. Cabela's opens at 9:00 AM, and we will begin to admit members to the meeting at 9:30 AM. We hope to be done with the meeting by 1:30 PM. You will be allowed to renew or join the LSA at the meeting.

Each year, the Members of the LSA elect a Board of Directors consisting of 15 members and two Alternate Directors. Each Director is elected to a 3-year term and each Alternate Director is elected to a 1-year term. Once the Board of Directors is chosen, the Directors then elect Officers of the Corporation from among the 15 Directors. The Officers of the Corporation, which forms the Executive Committee, are President, Vice-President, Secretary, Treasurer, and Director At-Large.

Paul Prokop (term expires 2015) [Secretary]
Jay D. Hunt, III (term expires 2015) [Treasurer]
Ronald (Buck) Kliebert (term expires 2015)
Ted Torres (term expires 2015)
Dwayne Vidrine (term expires 2015)
1st Alternate Director: Clifford Grout (term expires 2015)
2nd Alternate Director: Bill Biossat (term expires 2015)

Daniel E. Zelenka, II (term expires 2016) [President]
Mark Altazin (term expires 2016)
Paul Angrisano (term expires 2016)
John Laws (term expires 2016) [Vice-President]
Chris Vinson (term expires 2016)

George Petras (term expires 2017) [Director At-Large]
Jim Biermann (term expires 2017)
Gordon Hutchinson (term expires 2017)
Gerald E. (Jerry) Liuzza (term expires 2017)
Dan Plunkett (term expires 2017)

Please consider running for the Board of Directors.

Rep. Joseph Lopinto Receives Legislative Excellence Award

The Louisiana Shooting Association, in recognition of the state legislator who by action has demonstrated the highest commitment to the protection of Second Amendment rights, established the Louisiana Shooting Association Legislative Excellence Award in 2010.

This annual award is presented to the legislator selected by unanimous vote of the LSA Board of Directors based upon that legislators actions during the most recent legislative session. The criteria used in the final selection of the award recipient includes an evaluation of the candidates continued support of responsible firearm use and ownership, their role in protecting legitimate firearm owners from ineffective and punitive legislation, and their support of appropriate law enforcement efforts relative to firearm issues.

With these factors in mind, it is with great appreciation and pride that the LSA announces the 2014 recipient of the Louisiana Shooting Association Legislative Excellence Award, Representative Joseph Lopinto (R, District 80). Rep. Lopinto serves as Chairman of the House Administration of Criminal Justice Committee.

Past Winners of the Legislative Excellence Award include:

2010 Rep. Ernest Wooton
2011 Rep. Cameron Henry
2012 Sen. Neil Riser
2013 Rep. Jeff R. Thompson

LSA Board Member Elected as Constable

LSA Director Gordon Hutchinson was recently elected and took office as Constable, Ward 3—District 1 in East Baton Rouge Parish. This district encompasses the City of Central and surrounding areas. Justice of the Peace Mark Miley administered the oath of office to his new constable on Tuesday, December 30, 2014 to take office on January 1, 2015. Hutchinson was elected to take the position of retiring constable Don Thompson, who served in that position for 18 years.

The Justice of the Peace court system serves an important role in communities with no court system, or for persons living outside city limits with no access to city courts. These courts serve as civil and small claims courts in cases up to $5000.00. Cases involving garnishments, unpaid debts, evictions, and many other civil cases are heard by the justice. The constable serves as security for the court, and enforces the edicts and orders of the court.

Both the Justice and his constable serve for six-year terms, the new term beginning January 1, 2015. Gordon is a long-time resident of the Central area, and has been a member of LSA for a number of years.

He is the senior concealed carry permit instructor in the state.

CONCEALED PERMIT NEWS

PROCESS STREAMLINED—CARRY IN RESTAURANTS OK'D

By Gordon Hutchinson

Some interesting things came out of the last year's legislative session and the Louisiana State Police that positively impacted concealed carry permit holders.

Each year it seems the legislature and the LSP, through the efforts of the Louisiana Shooting Association and other involved and interested shooters, makes the concealed carry permit application process easier to maneuver and the actual permit more attractive to the average permit applicant and holder.

For instance, as of August 1, 2014, it is now legal for a CCP holder to carry his or her concealed handgun in a restaurant that serves alcohol by the drink. This cleared up a contradiction in the state statutes that has caused confusion and contention since our state law on concealed carry was formulated and passed. It is still illegal to carry a firearm of any type into any establishment such as a bar or night club—but it is legal to carry concealed in a restaurant that serves alcohol.

The state police have now made it easier for concealed permit holders to renew by allowing one to file one's applications online. A permit holder still has to take a renewal course every five years, and supply the state police with a certificate of completion from a state-certified course—but that can be scanned and submitted with the online application. If a person has to be fingerprinted, or cannot scan an item, the online application process supplies the applicant with an identifying code sheet to turn in with their hard copies, and this allows the LSP Concealed Permit Section to "marry up" the hard copies that were brought in with the electronic application form.

By filling out the application form online, the applicant is helping the concealed permit section by actually entering their own information—and saving the section valuable time. This allows the LSP Concealed Handgun Permit Section to expedite processing of the application, and online applicants receive special consideration, and receive their permits in a more timely manner.

Finally, at long last, permit applicants can pay for their concealed applications with a credit or debit card! Until recently, persons making application for a concealed handgun permit could only pay the application and fingerprinting fees with cashiers checks or money orders. The section will now take credit or debit cards when a person delivers their application personally—a much-needed streamlining of the process, and one that is most welcome.

Every year, it seems as if the process for obtaining a Louisiana concealed handgun permit becomes more streamlined and less obstructed with bureaucratic exercises. Certainly, with well over 100,000 people already having been issued permits in the state, even more interest will be forthcoming in gaining a permit. The fact that applicants will have to jump through even less hoops to obtain a permit should increase the numbers exponentially.

Junior Shooter News

Two Louisiana Junior Shooters Go Distinguished!

The prestigious Distinguished Badge program began in 1884 when the U. S. Army first awarded the Distinguished Marksman Badge. In 1891, the program expanded to offer a Distinguished Rifleman Badge and a new Distinguished Pistol Shot Badge. Eventually, there were Distinguished Badge programs for each service and for civilians. The Distinguished Rifleman and Distinguished Pistol Shot Badges are the highest honor that most military and civilian rifle and pistol shooters can aspire to earn. In 1963, the program was expanded to include the International Distinguished badge, which because points can only be earned in Olympic, World Championship, World Cup and Continental Championships, is perhaps the most difficult Distinguished Badge of all to earn. In 2001, a Junior Distinguished Badge for excellence in three-position air rifle competitions was added. The CMP is proud to recognize all shooters who have "gone Distinguished" from the program's inception in 1884 until today.

Points are earned toward towards the Distinguished Badge by competing in Excellence-in-Competition Matches. In this type of match, all shooters compete at the same level without the benefit of classes or sighting shots. For those members not familiar with the CMP Excellence-in-Competition Match, these matches are the competition for points toward earning a Distinguished Rifleman's Badge. Excellence-in-Competition Matches are also known as "leg" matches because the top 10% of the shooters are awarded points ("legs") on the road to becoming a Distinguished Rifleman. To become a Distinguished Rifleman, one must accumulate 30 points in Excellence-in-Competition matches. Earning the badge or "going distinguished" has a long history and is one of most coveted awards in Service Rifle competition. If you would like to learn more about Excellence-in-Competition matches or the Distinguished Rifleman's Badge

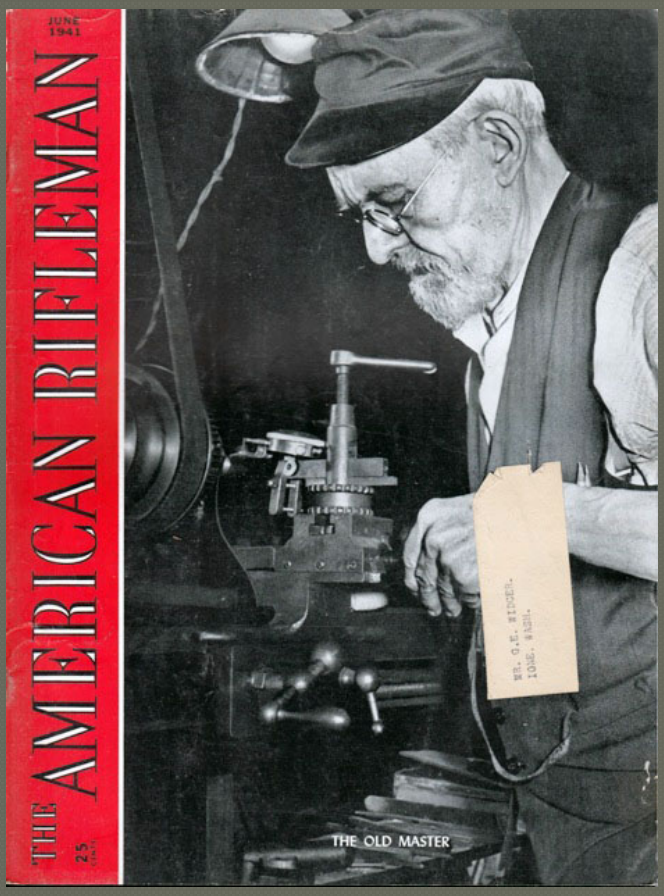
On the left, Bradley W. Petras of Slidell, LA earned Distinguished Rifleman Badge No. 2217.

On the right, Leighton Dempster of Loranger, LA earned Junior Distinguished Badge for 3-Position Air Rifle No. 811

Rifles, ammunition, supplies, match fees, and travel grants help support our junior shooters! Enter the M1 Garand Rifle Raffle today and support junior shooting in Louisiana.

Was Harry Pope Really THAT Good of a Barrel Maker?

By James D. Hudson, III



For the modern rifle shooter who fancies a barrel capable of unerring precision, names like Krieger, Hart, Bartlein, Broughton, or Schneider evoke visions of bug hole groups and absolute perfection in manufacture, with almost mythical qualities. If you want to start one hell of an argument, get into a conversation with today's riflemen over which barrel is the best. Where did this all evolve from? From the first days of rifle competition, we can assume very lively discussions on which rifle maker kicked out the most accurate rifles, from flintlock to cartridge, from Rendevous to Creedmoor, and from Kentucky Long Rifles to Remington Rolling Blocks, ever changing as riflery advanced through the years. However, there was only one man who ever achieved legendary status as a barrel maker, Harry Melville Pope, "The Old Master".

Making of a Legend

Harry Pope was born on August 15, 1861 in New Hampshire. He was orphaned by age 6, and spent most of his informative years with his uncle, working in the Pope Bicycle Factory, where he acquired considerable skill as a mechanic and learned shop and factory methods. The first "Harry Pope" barrel was actually made when he was a boy. The Pope Company manufactured small, spring powered toy

pistols that shot darts. Constantly in competition with the other boys, Harry secretly scraped shallow rifling in his brass pistol barrel to stabilize the darts, securing his place as the champion dart shooter. At the age of 20, he attended the Massachusetts Institute of Technology, soon graduating with a degree in Engineering. It was this training that most likely gave the final polish to a natural mechanical mind that would soon lead to immortality as a barrel maker.

Shooting Observations and a Chance Meeting Influences History

As with most young men growing up during that time period, young Harry was interested in rifles and shooting. Working 6 days a week, he would get up at 3AM, ride to the range and practice for 2 hours with his newly acquired Ballard .32/40 before returning home to start work. Harry was an attentive learner of all things rifle, but his scores just would not improve. He happened to notice one day that his bullets were key holing into the target. His engineering mind determined that the slow twist rifling was not correctly stabilizing the long bullets that came from the factory mold received with his Ballard rifle. (Harry's conclusions may be obvious to the 21st century shooter, but in 1887, bullet stabilization concepts were just not that well known to the average shooter.) This was soon rectified by a shorter bullet, and Harry's scores much improved.

After a few years of shooting, Harry was convinced that a lighter caliber bullet would be better for the 100 shot offhand matches, but there were no commercial .25 caliber barrels available without resorting to a very expensive special order. Being a bit light in the pockets, Harry took another route, making one himself. He turned, reamed, and rifled a .25 caliber barrel on a foot lathe to meet his requirements; along with his own bullet mold and casings turned from solid brass stock to take the 100 grain bullet pushed by 25 grains of black powder. The end result was a winning rifle. Later on, Stevens produced a practically identical cartridge, the .25/21/86.

Not long after Harry's first adult foray into barrel making, he attended a Schuetzenfest match in Newark where he met William Hayes. Hayes was a wealthy jeweler who was a top shooter that demanded only the best in equipment. Hayes showed Pope a George Schalck rifle that had been custom made according to specifications requiring a breech/muzzle loading system, whereby the bullet was started and rammed from the front with a false muzzle, and a powder filled cartridge inserted in the breech. This was very unique and cutting edge at the time. Pope was primarily impressed with the Schalck rifling system, utilizing eight narrow lands and fairly shallow grooves, which displaced less metal from the bullet when rammed, keeping bullet mutilation to a minimum. In young Harry's mind, this was a SUPERIOR method of rifling and loading. Soon thereafter, Harry began fabricating his own breech/muzzle system in .25 caliber, and refined Schalck's system into a perfection that was all his own.

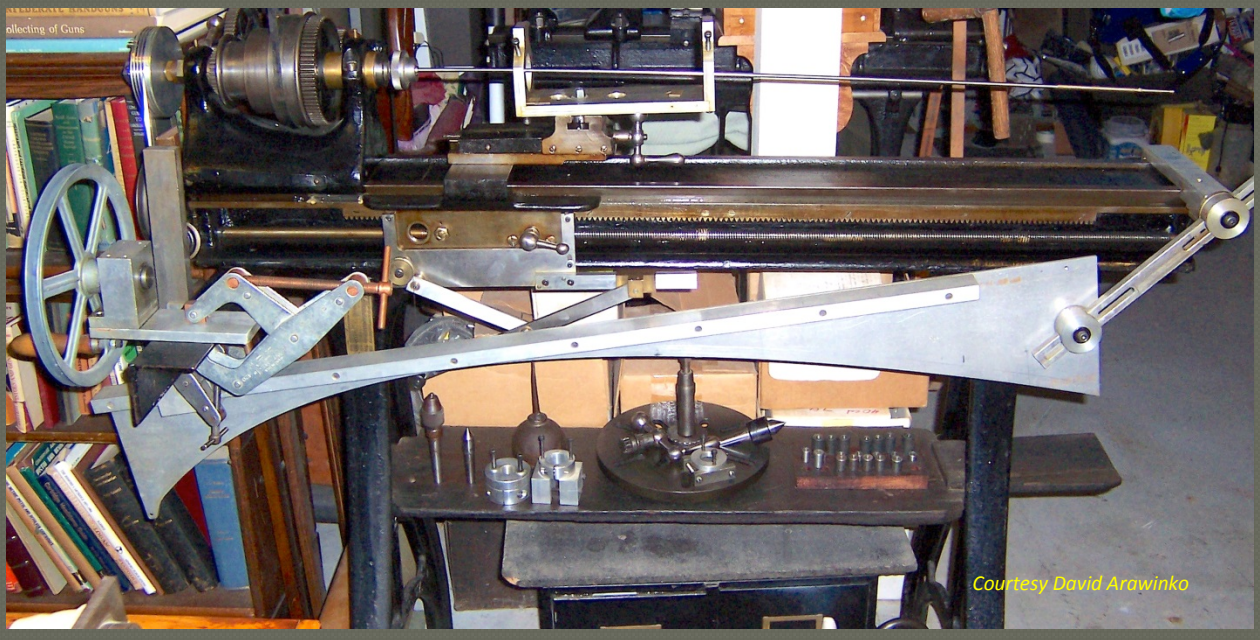
No Secrets to Perfection

Harry continued shooting and soon became one of the top offhand competitors in the nation. In the meantime, he also adopted Schalck's method of gain twist, but modified the form of rifling by cutting grooves that were 8 times as wide as the lands, but only ½ as deep as Schalck (.004"). Harry also adopted a tapered bore and improved upon cast bullet design, adopting a cannelured bullet of 3 diameters, with only the first 3 bands making contact with the grooves to keep the lead bullet from

stripping the lands. **As a testament to his integrity, Harry always credited George Schalck and William Hayes as the purveyors of the breech/muzzle loading system, even after he became so iconically associated with it.*

So, what did all of this mean? Anyone could have done this and built a barrel. The difference: WORKMANSHIP. During Harry's tenure as a barrel maker, he didn't rely upon technological breakthroughs or fancy machines to turn out gilt edge barrels, he merely worked hard and accepted nothing but absolute perfection. At each stage of the process, he developed exacting methods to ensure extreme tolerances. He utilized a nut bore style of long drill to cut to exact center for entire length of the bore. Special care was always taken during the reaming process, making smaller material cuts to ensure true bore diameter and minimize or eliminate machining marks.

The sum of the effort was always perfection to the minutest of detail, but perhaps it was his rifling that set him apart from so many others. Harry actually chambered his barrels BEFORE he rifled the bore to ensure no damage to rifling. His M.I.T. education allowed him to conceptualize and configure various cams to cut gain twists with his rifling machine, and his shop was filled with sheets of mathematical calculations to determine correct arc sets. He may have relied upon high level calculations and engineering to help his set up, but he always cut his rifling by hand. He liked to be able to feel how the cutter was performing, and identify any hard spots, slag, or other discrepancies. There are several types of cutters that one can use to cut rifling, but Pope always used a scrape cutter, much slower than the other types, but producing superior results. Pope cut each groove with 50 passes of the cutter. As each groove was .004" deep, he was only taking .00008" of steel per pass, barely enough steel removed to even discolor the pure lard oil that he used for lubrication. For each 8 groove barrel, he made a total of 400 passes! Harry utilized a left hand twist on almost all of his barrels. Left or right twist matters not to bullet stability, but in his mind, the torque from a left hand twist would push the cheek piece of the stock uniformly against the rifleman's cheek every time. Again, small things that add up to performance.



Harry Pope's Rifling Machine

Analysis of Perfection

To truly gauge how good Pope's barrels were, we will let the shooters of the day give this analysis. Just like today, shooters strove for the best equipment, and the predominant manufacturer names told of the highest quality and performance. Poll the line at Camp Perry and you'll come up with Krieger, et. al. Poll the line at Walnut Hill in the late 1800's and early 1900's, and you consistently found a litany of Pope barrels and accoutrements. Shooters like John Kelly and C.W. Rowland used Pope barrels to high accord. Perhaps one of the most legendary bench rest groups was fired by Rowland in 1901. He utilized a Pope barreled .32/40 to fire a 10 shot group at 200 yards that measured .722 inches!! This record for a single shot Schuetzen style rifle stood until 2011 when it was broken by Jim Borton's .707 inch group. By Harry's own account, he shot a group that was smaller than Roland's group by some margin, but that target has not been found or validated beyond his own descriptions.

C.W. Roland's Record Group

Dr. Franklin W. Mann, the godfather of modern ballistics and perhaps an even more exacting rifle crank, relied heavily on special ordered Pope barrels and sundry items during his ground breaking rifle experiments. Dr. Mann tested all barrels with a rotation test, wherethe barrel and action were placed in a Mann V rest, fired, and then rotated 90 degrees and fired again, through 360 degrees. As a testament to Popes accuracy in drilling on centers, this 4 shot rotation test resulted in a group of only .56" at 100 yards! To put that into perspective, some of Dr. Mann's other rotation barrel tests resulted in as much as a 16" group for other manufacturers. In Pope's own words, "that one was damn near straight, wasn't it".

Pope was not just a one trick pony that had broken the code on old single shot black powder cartridge type rifles. He evolved his barrel making to modern high powered rifles, maintaining the same dedication to precision and perfection. In 1924, the proof house at Frankford Arsenal tested 40 barrels to determine the best for use by the U.S. International 300 meter Free Rifle Team. Due to the notoriety of possibly having their firms represented in international competition, Winchester and Remington submitted specially made barrels, along with one Harry Pope. The submitted barrels were mated to 1903 Springfield actions, and tested with a machine rest at 300 meters. Barrel performance was calculated through a "figure of merit", which was determined through adding the maximum vertical group spread and the maximum horizontal spread, in inches. The top tested barrel was a Remington barrel with a 2.29" figure of merit. The second place barrel was a Pope barrel with a 2.30" figure of merit. Think about this. A major gun maker, with limitless funding and hundreds of barrel makers on staff only beat old Harry by one hundredth of an inch, and that difference likely due to ammunition. Out of the 40 barrels tested, Harry had submitted only 5. Two of these barrels were selected for International use. Not bad for a one-eyed old black powder crank that was 60 plus years old!

Ray Smith, a late-life friend of Harry's and avid Pope collector, put several of Harry's old barrels and rifles back on the firing line. Harry's personal favorite, the one that fired his undocumented 200 yard record, is noted as the "150" rifle due to the barrel number. It had been fired more than 125,000 times, burning half a ton of powder and almost two tons of lead, but still produced groups less than one inch at 100 yards. The barrel itself on the outside was never finish turned, and still had the scale and blisters from the original mill rolling, but the inside still "glistened like a parabolic mirror" according to Smith. Harry never embellished any rifle. To him, it was the inside that mattered. If you see any of the highly engraved old Schuetzen rifles with Pope barrels, you can bet that Harry wasn't the artisan that shined up the exterior.

When looking at today's barrel manufacturing compared to Pope's time, we must always take into consideration the level of technology that we have developed in the almost 100 years since Pope manufactured his barrels. Let's turn to one of the manufacturers considered to be top tier among rifle

shooters: Krieger. On Krieger's website, they give testament to their use of single point cutting for rifling, taking ".0001 inches" of metal per pass, with overall groove tolerances from "zero to .0005in". Sound familiar? Modern manufacturers have the benefit of higher grade and consistent steels, computerized controls, magnetic particle testing, and a litany of metallurgical tests down to the molecular level to ensure perfect stock. They utilize CNC technology to bore, turn, and rifle barrels (Although many manufacturers still use Pratt and Whitney rifling machines from the first and second World War era!). They can check their work with bore scopes, modern air gauges and other measuring devices down to the fifth decimal place. Harry Pope turned out barrels of equal precision with nothing but a file, micrometer, an old belt driven lathe, and a hand operated rifling machine using lard oil. Was Harry Pope THAT good of a barrel maker? You're damn right he was.

A Shooter Learns Archery for His Sons

by Paul Angrisano

For thirty years I've shot guns. I've learned a couple things along the way, but more than anything it is that there is no magic to shooting well – there are only good repetitions and then more good repetitions. Once you've done it right thousands and thousands of times, it comes naturally. I'm far from the best, but given a target I can usually make the bullets go where I want them.

Over the years I've observed many hunters transition from guns to bows. Some of the best marksmen I know bow hunt exclusively now. My two sons enjoy shooting guns, but have grown up watching Hawkeye the Archer in the Marvel Universe, and Katniss in the Hunger Games. After some research and consideration, we decided to take the plunge and this Christmas three bows found their way into our home. Less than a month later, we just shot our first indoor competition and all three of us are hooked. Turns out the bows of today are exceptionally accurate, powerful and more fun that I would have ever guessed. I started from a point of abject ignorance but was lucky enough to have some excellent guidance along the way. What follows is the summary of my experience should you have any interest in archery.

First, a bow is a very individual thing. As with all things there are plenty of Ford vs Chevy arguments but my observation was there aren't many bad bows out there once you get into the $350+ range. My boys and I went to several archery shops in the area to try different bows before making our final selections, and I would suggest you do the same before buying. Several bows felt good and shot well but one stood out for me, the Elite Energy 35, and both the boys preferred the Diamond Infinite Edge. As an aside, the Diamond is a great bow, reasonably priced, and it is so adjustable almost anyone can shoot it. After being fitted to the bows and selecting the appropriate arrows and releases, we were on our way to having fun in the back yard.

The ability to shoot at home was one of the major selling points for the bow. My sons and I can spend time together in the backyard practicing together. The safety rules certainly apply – an errant arrow can be deadly – but with an appropriate back drop and good target the fun factor is off the charts.

In theory, all one needs to do to shoot a gun well is to align the sights, focus on the front sight, and press the trigger with increasing force until the sear trips and the gun fires as one continues to hold on target. Archery is very similar – all one has to do is the same thing the same way every time. It is almost a meditation with every shot – draw, anchor, aim, push, pull, press, follow through. Those are the seven simple steps to success and center punching the target.

In practice, teaching yourself to do those seven simple things the exact same way every single time is… a new adventure. As I learn it myself, I am trying to teach my boys. The very first thing they need to do is align themselves with the target. This means they need to have their feet in line with the bullseye. The shoulder in which they hold the bow should be pointing directly at the target. I ask them to tell me what they're going to do, and to say it slowly with her eyes closed as they envision themselves doing it - they are going to draw, anchor, aim, push and pull as they touch the trigger, press the trigger, and follow through.

After "nocking the arrow" or clipping it onto the string, it is critical that one pays attention to the hand holding the bow. Everything has its own set of dangers and archery is no different. If you hunt, you will eventually be projecting a set of razor blades near your fingers that support the bow. You don't want to accidentally leave one finger in the path of the arrow. The bow rests in the hand against the fat part of the palm. Your pointer and thumb can come together and touch or close to it, and the middle, ring and pinky can curl off to the side. Any other tension applied to the bow will simply serve to torque it. I'm struggling to master how little hand I can have on the bow.

After drawing the bow, setting your first knuckle against your jaw bone in the exact same place every time gives you a reference point to make sure your rear sight is in the exact same place. We take this luxury for granted on a rifle, but with a bow you must be able to repeat this every time. Once your anchor point is set, you'll find an old friend – a rear aperture sight and a front post. Place the front sight on the target while pushing the bow forward toward the target while pulling the string backward… press the trigger… a 415 grain arrow flies forward with tremendous speed and force. Hold the bow until you hear the arrow strike the target and shazam – if you do everything right there is an arrow in a bullseye.

For better or worse, my bullseye to not bullseye ratio is not where I would currently like it to be, but the boys and I will be practicing in our back yard today, tomorrow, and the next day. I've found that in archery and guns, there are a lot of good people who selflessly help newcomers get their start. I'd like to thank Ken's Bayou Archery in Slidell, Bowie Outfitters and Spillway Sportsman in Baton Rouge. All three shops have been great ambassadors of the sport, putting up with my newcomer's questions and helping at every turn. I'm looking forward to our next archery competition.

You Can't Shoot Better Without Shooting More
Get into bullet casting now.

by Danny MacGregor

Here it is 9+ years after Hurricane Katrina put five and half feet of muck into my reloading room. In my efforts to recoup as much of my life and my beloved hobby as I could, I decided to make full use of what I kept and abandoned the rest. To that end, I took a fresh look at casting bullets as a way to save money and shoot more. The window of opportunity is closing rapidly on the bullet caster's basic material. That material is wheel weights, so I have started to stockpile. Another useful material, 50/50 and 60/40 lead solder is already gone from the local hardware and big box stores shelves, but there are ways around that---later.

I have had some modicum of bullet casting equipment sitting around since my high school days back in the seventies. It sat because I had marginal results at best and didn't see casting as worth my time when I could buy bullets so cheap. The days of cheap bullets are gone, the trend toward lead substitutes means prices many fold higher, and now there is a wealth of information available at my fingertips about how to get those better results that I gave up on as a teenager. But, I have found that the information is written by experts and they assume most of these little tidbits are general knowledge and they don't address the most basic of basics. So here I am attempting to document my re-education and focus on the basics.

I am a Distinguished Rifleman who has decided to start chasing after pistol "Leg Points." To do so I expect to have to shoot a lot to retrain myself into a pistol shooter. In shooting, the real basics are as simple as sight alignment and trigger control, and all else is designed to get you to that goal. Casting is a way to afford more trigger time. So here are the supporting casts for the basics as I see them. This information was gleaned from numerous articles, books and postings and borne out by my own experience. If nothing else, there is a basic fact sheet at the end of this article.

The tools and materials needed to get started are:

You will need a source of lead alloys, a way to melt them at a controlled temperature, a way to get the "melt" into bullet molds and of course the molds themselves. The bullets usually have to then be sized and lubricated. Some bullets are designed to not even need to be sized and can be lubricated by swishing them in a used butter tub of special lubricant. All of these things are available in many forms through many sources. As a good starting point, and one that supports the NRA in tangible ways, I suggest starting your search at midwayusa.com. Almost all of the basics needed range from something that you can get for free to something that can cost hundreds of dollars. I would strongly suggest that you do the research based on results rather than price as there are some items that perform as well as or better than items costing much more. But this is not always so. An excellent source of info is castboolits.com.

Safety:

We all tend to discount hazards that we can't see. Lead poisoning is one of those "can't sees." Nobody knows anybody who dies of lead poisoning. Not all dangers drop you where you stand. Trust what you read on the warnings that come on all things casting. Lead dust is virtually invisible as are fumes. We wouldn't intentionally ingest it but we may light up a cigarette with contaminated hands. We may sweep out our work area giving no thought to what we are stirring up. We may grab the door knob to our reloading room on the way up to grab a sandwich. Or worse, we may have some toy or article to be touched by our kids or grandkids in the corner or our casting area. For the little ones, the danger of that invisible dust is severe.

The potential for severe burns is VERY serious. If you have never witnessed what a drop of water falling into a pot of molten metal does I will only tell you that it is a spectacular event that you do not want to witness up close. Use long sleeves and pants, aprons, hats, face shields and leather gloves.

The goal and specific generalities:

No pardoning any puns here, what we are shooting for by casting is a large volume of cheap bullets that are well defined and consistent, of the proper hardness, and properly sized and lubricated. We are also looking for a renewable resource.

Consistency, as with all reloading, is paramount. Consider that a 1:12" twist barrel pushing a bullet out at 1,000 FPS is spinning it at 60,000 RPM! Imagine how well an unbalanced wheel at that speed would do. A void caused by too small a sprue or a bullet pushed through a sizer die that is off its axis is destined to be a flyer. Likewise weight plays into the equation as it affects speed, which affects drop and wind effects.

You will read and hear a lot about hardness. Harder is NOT always better. Between hardness and bullet to bore fit, fit is much more important. In general cast bullets should be slightly larger than their jacketed cousins. A bullet has to be soft enough to "obturate," which means to swell at the base and prevent gasses from cutting it as they try to sneak past. A bullet has to be hard enough to withstand the physical and thermal forces encountered as that object at rest is put into motion rotationally and longitudinally against the lands of the barrel. Hardness can be assumed from the materials you use or it can be tested. I use the Lee hardness tester because it is cheap and it works. For pistol bullets below 1,000 FPS, a hardness of 12-13 Bhn (Brinnel hardness number) is perfect. This just happens to be the average hardness yielded by straight wheel weights. All lead/antimony alloys bearing a trace amount of arsenic can also be heat treated to roughly double their Bhn. You can heat treat bullets to roughly twice their normal hardness by heating them till just before they slump in an oven and then dropping them in water while hot. NOTE: Bullets to be heat treated should be sized without lube applied BEFORE heat treating to avoid undoing the surface hardening when working the metal. Once treated, they can be pushed back through the sizer/luber to apply the lube.

Material Roles:

Before you go out buy hundreds of dollars worth of casting equipment, find and fully use a source for used wheel weights. Smaller tire shops are your best bet. Once you have at least found a decent source, then order or amass your equipment. Start small with the basics and upgrade only as need dictates.

Lead (Pb), which melts at 622°F, brings malleability, weight, and thus energy retention to the bullet. Antimony (Sb), which melts at 1168°F, brings hardness to the bullet. Tin (Sn), which melts at 450°F, reduces surface tension and allows the melt to flow deeply into the sharp corners of the mold giving nice crisp lines. And arsenic (As), which melts at 1090°F, acts as a catalyst with the antimony and allows the bullet to be heat treated. All of these materials are found in today's wheel weights, which average 95% lead, 4.5% antimony, 0.4% tin, and 0.1% arsenic and are great for pistol bullets. They can also be alloyed or heat treated for rifle bullets. It is useful to add tin to wheel weights to bring the tin percentage up into the 2% range so that you get crisp sharp lines. True tin/lead solder has been effectively replaced by the new "lead free" solders. So an alternative is to buy tin ingots from MidwayUSA or other sources and do the math for proportioning. If you can get it, adding 60/40 lead solder @ 4.1 Oz/10# of wheel weight brings tin percentage up to a desired 2%. If using roll solder, 4.1 Oz

is about a ¼ of a 1# roll by length. Adding 50/50 lead solder @ 5.1 Oz/10# or about a 1/3 of a 1# roll by length also brings the tin percentage up to 2%.

Using flux binds impurities and prevents oxidation of the melt. Flux can be a borax base such as Marvelux or as simple as sawdust, paraffin or bullet lube. I use Marvelux when processing batch alloy and I use any good smelling sawdust in my electric furnace when casting. Cover the whole surface and let it reduce to ash and stay there if you don't ladle pour your bullets. If you do ladle pour your bullets then the flux has to come off and be reapplied more often.

BE AWARE TO AVOID ANY ZINC WHEEL WEIGHTS! Zinc will ruin bullets in many ways. Zinc can be excluded when processing the raw wheel weights down from their original form. Zinc melts at 693°F, whereas wheel weights will melt down easily below 650°F. If you keep your temperature at 650°F the zinc weights will always float to the top and are easily removed before they melt. This is where a good pyrometer (high temperature thermometer) is essential.

I pour quite a few 1# ingots because they fit into the electric furnace that I use for actual casting. I also have several 5Qt/115+ pound "pot ingots." They can always be broken down later. Ingot molds can be made from any steel or iron shape such as cornbread molds. Also, angle iron or a half pipe sealed on the ends works well.

Let's start casting:

Do this outside standing up with all of the protective gear. Set up the pot on a sturdy stand on a table near eye level to avoid fumes and to see your work. A fan blowing across the top of the furnace is advisable. I use a milk crate on top of a table for a base. Fold an old towel twice and anchor one side of it under the base of the stand you have your pot on. This will allow you to dump the bullets at table level onto a soft surface. Then you can lift the edge of the towel toward the side anchoring it to clear a landing spot for subsequent bullets. Bullet casting with steel molds is done around 685°F. Although unpublished, I find that I have to cast at 825°F when using aluminum molds. ***For lack of this little factoid I nearly scrapped everything I had amassed and threw in the towel thinking that I had literally 1,000# of zinc contaminated alloy.*** Whether you ladle pour bullets or you use a bottom pour furnace, fill each cavity in a single pour and leave a generous cavity to cavity connected mound (sprue) on top. Tempo is very important when casting. Until the molds get up to temperature, the bullets will come out wrinkled or

incomplete and generally useless. This is normal. To avoid dropping the melt temperature in the pot or furnace, do not put them back into the pot until it is half empty. Once up to temperature, molds will require a brief period to cool between pours so that you don't dump semi-molten bullets. I use two sets of molds of the same material (both steel or both aluminum) to make use of this cooling period because I find that it takes the same amount of time to fill a second mold as I would wait for one to cool. You also get twice the number of bullets in the same amount of time. For temperature and homogeneity, do not replenish your pot of melt until it is half emptied. Use a good casting pyrometer to maintain melt temperature where it produces the best bullets for you. Wrinkles indicate too cold and frosted indicates too hot. A light frosting is acceptable.

Now what?

The bullets HAVE TO be lubricated before use to avoid leading the barrel. If they cast at an appropriate size it is best but not absolutely necessary that they be mechanically sized. A lube/sizer is a worthwhile investment to do both tasks at once. I prefer to use a lubricant in the sizer/luber that is harder and less sticky than traditional alox type lubes. To use these types of lube though it really must be kept warm which is where an electric lube base heater works great.

Recap and other useful facts:

Cull stick-on weights from clip-on weights. The stick-on weights are 99.5% pure lead and can be used to make soft hunting bullets, muzzle loader bullets, or alloyed to make pistol or rifle bullets. Avoid battery lead as it gives off poisonous and corrosive gasses.

Discard zinc and steel weights and anything that does not melt below 650°F in the initial smelting of the wheel weights.

Process raw wheel weights at less than 650°F. Skim off clips and ash. Use an old cast iron pot and a burner and always process in a VERY well ventilated area where there is ZERO chance of water or sweat dripping into the pot. A drop of water will EXPLODE in a pot of molten lead! After processing raw weights @ 650°F you can use the product at whatever temperature you need.

Smelt that is ready to cast actual bullets:

Don't flux until the melt is "liquidus" with no oatmeal appearance and then stir well introducing air to the mix. Flux can be sawdust, paraffin, bullet lube or a commercial borax flux. Some fluxes will actually catch fire and this is okay. When you re-flux, you should only skim off the ash like material. Any hard material that floats to the surface at this point should be mixed back in similar to the way you break up lumps of powder against the side of the glass in chocolate milk. This is the antimony and arsenic coagulating.

If you pour ingots, make them any size and shape that will fit into a pot or furnace at a later time.

When buying molds, most do not come with handles. It is standard practice to own one or two sets of handles and numerous sets of molds. New bullet molds must be thoroughly cleaned using a degreaser

that leaves no residue. There are commercial release agents that can be applied to aid in bullet drop out. Do not beat the molds. Use a wooden rod or hammer ***handle*** to open the sprue cutter then open the mold and hit the pivot bolt of the mold handles. Aluminum molds will require much more heat as they cool much faster. They are also about a $^1/_4$ to a $^1/_3$ of the price of similar cavity molds. Do not let any lead splatter get between the mating surfaces and make sure that the shallow "vent" lines/scratches in the face are clean. Do not drop sprues or deformed bullets back into the melt until it is about half empty. Do it all at once and re-flux.

ABC's of Casting

- Cull strip weights from clip-on weights.
  - Clip on weights are composed of 95% Pb, 4.5% Sb, 0.4% Sn, 0.1% As
  - Strip weights are composed of 99.5% Pb
- ***NO ZINC!***
  - Zinc melts at a higher temperature than led, so process weights <650°F
  - Discard weights that do not melt at 650°F
- Adding 60/40 @ 4.1 Oz/10# WW brings tin to 2% Sn.
- 4.1 Oz=1/4 of a 1# roll of 60/40 or 1/2 of a 1/2# roll
- Adding 50/50 @ 5.1 Oz/10# WW brings tin to 2%Sn.
- 5.1 Oz=1/3 of a 1# roll of 50/50 or 2/3 of a 1/2# roll
- Don't flux until liquidous-no oatmeal
- Leave flux on top
- **Cast bullets @ 685°F-700°F w/steel molds & 835°F w/aluminum molds**
- Do not add sprues, alloy or rejects until pot is half empty and flux
- Wheel weights are ~12-13Bhn
- Softer means better obturation.
- Bullets below 1,000FPS are good @ 12-13Bhn
- Bullets to be heat treated need to be sized w/o lube prior to heat treating and then lubed afterward.
- Non-heat treated bullets age-harden.
- Heat treated bullets age-soften.
- Fit to bore is more important than hardness.
- Cast bullets should be slightly larger than jacketed bullets.
- Use slower burning powders to overcome inertia before gas cutting occurs.

Lead (Pb)=Weight/Density/Energy Retention

Antimony (Sb)=Hardness/Ability to heat treat

Tin (Sn)=Flow/Definition/Some hardness

Arsenic (As)= Catalyst for hardening Antimony

2015 M1 Garand Raffle

All Proceeds Support Junior Shooting Programs in Louisiana

Previous Years' Totals
2010: $3793
2011: $5021
2012: $4359
2013: $4276
2014: $1839
Our Junior Shooters THANK YOU!

Donations are $1.00 per Chance!

The 2014 Winner was **Jace Prejean** of Houma, Louisiana
The 2015 Winner could be…YOU!

To obtain raffle tickets, please complete the form, make a check payable to the Louisiana Shooting Association, and mail to:

Louisiana Shooting Association
c/o Jay D. Hunt, Treasurer
350 Quill Ct.
Slidell, LA 70461

Drawing to be Held on **October 17, 2015**
Winner need not be present at drawing to win
Please $5.00 minimum purchase for mail orders.

M1 Garand Raffle Ticket Request Form

Name _____

Mailing Address _____

City _____ ST_____ Zip _____

E-mail Address _____

Daytime Phone Number _____

Please send me _____ tickets at $1.00 per ticket. Total Enclosed $_____

☐ I would like to save the cost of postage by having the LSA hold my ticket stubs and send a confirmation e-mail that my donation was received.

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About the LSA

Second Amendment Rights

LSA serves as your consistent pro-gun voice on state and local levels. Its legislative committee monitors legislation in Baton Rouge and alerts members when a concerted effort is needed to defeat anti-gun bills.

Education/Training/Public Service

LSA promotes the responsible use of firearms in the home for private defense. It supports and promotes hunter education, CMP programs (including the sale of M1 Garands to members), and education and training of sports shooting programs for adults and juniors.

Hunting and Conservation

LSA maintains good communication and cooperates with the state Hunter Safety Coordinator and the Louisiana Department of Wildlife and Fisheries.

Communication

LSA publishes a newsletter to keep the membership informed to pertinent legislation and up-to-date on other LSA programs. The LSA maintains a website, which provides up-to-date information for members on important issues related to fire-

LSA President, Daniel E. Zelenka, II

The Louisiana Shooting Association was incorporated in 1966 as an organization of individual members and affiliated clubs for the purpose of supporting the shooting sports.

- **LSA is affiliated with the Civilian Marksmanship Program, National Rifle Association, and the National Board for the Promotion of Rifle Practice.**
- **LSA is an organization to which affiliated clubs look for service, competition sponsorship, instruction, and help in any field of the shooting sports.**
- **LSA is an organization that encourages and promotes training in hunter safety, marksmanship, and junior shooting.**
- **LSA is an organization totally committed to the promotion and protection of legitimate firearms owners' constitutionally-guaranteed right to own, bear, and use firearms for the protection of home and family, sport hunting, target shooting, and any other lawful purpose**

LOUISIANA SHOOTING ASSOCIATION, INC

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Working for its members right here at home in Louisiana.

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The Louisiana Shooting Association

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Membership Application

Louisiana Shooting Association
c/o Jay D. Hunt
350 Quill Court
Slidell, LA 70461

☐ New Member ☐ Renewal

Name _____

Mailing Address _____

City, ST Zip Code _____

E-mail Address _____

Daytime Telephone _____

Evening Telephone _____

FAX _____

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It is the policy of the LSA to only use E-mail addresses for official, important LSA communication. You will not receive junk mail, offers, jokes, or any other non-essential e-mails from the LSA, nor will you name, address, telephone number, or e-mail address be shared with any outside party.

LSA Number (Renewal, if known) _____

NRA Number (optional) _____

USA Shooting Number (optional) _____

Shooting Club Memberships _____

_____

_____

NEW POLICY: Memberships will be valid for a period of 1 year from the date of application.

☐ Individual: $10.00/year _____ years

☐ Junior: $5.00/year _____ years
For those under age 20 only, Date of Birth_____

☐ Individual Life Membership: $200.00

☐ Club: $25.00/year _____ years

☐ Club Life Membership: $250.00

Signature _____

Date _____

Membership Amount _____
Convenience Fee (3% only if paying by credit card) _____
Total _____
Make Check Payable to Louisiana Shooting Association

Name of Referring Member, if any (PRINT!) _____

Credit Card No. _____
Expiration Date _____ CV2 _____
Name on Card _____
Signature _____