

In this issue: The long awaiting second part of Danny Hudson's article on Accurizing the M1903A3 for Competition

Contents

۲	2019 Annual Meeting and Elections
۲	Accurizing the M1903A3 for CMP Competition: Part II
۲	LSA FY2018 Balance Sheet11
۲	Fiscal Statement for Junior Shooting Program
۲	M1 Garand Raffle for 201914
۲	Membership Application

2019 Annual Meeting and Elections

Will be Held on Sunday, February 17 10:00 AM at the Cabela's in Gonzales, LA

Please join us for our 2019 Annual Meeting of LSA Members and Election of the Board of Directors.

Each year, the members of the LSA meet to discuss relevant business and vote on one third of the members of the LSA Board of Directors, each of whom are elected for a three-year term. The Officers of the corporation are selected by the Directors and serve for one year. Two Alternate Directors are also elected for a one-year term.

Current Board

Officers

President: Daniel E. Zelenka, II (Term Expires 2019) Vice-President: Paul Angrisano (Term Expires 2019) Secretary: Paul Prokop (Term Expires 2021) Treasurer: Jay D. Hunt, III (Term Expires 2021) Member-at-Large: John K. Laws (Term Expires 2019)

Directors

Ron Duplessis (Term Expires 2021) Clifford Grout (Term Expires 2020) Gordon Hutchinson (Term Expires 2020) Barret Kendrick (Term Expires 2019) Ronald "Buck" Kliebert (Term Expires 2021) Gerald "Jerry" Liuzza (Term Expires 2020) Joseph "Jay" Meynier (Term Expires 2020) George Petras (Term Expires 2020) Daniel Plunkett (Term Expires 2020) Theophile "Ted" Torres (Term Expires 2021)

First Alternate: **Dwayne Vidrine** (Term Expires 2019) Second Alternate: **John Grout** (Term Expires 2019)

Membership Not Required to Attend;

However, only Members of the LSA can vote on business and during the election of Directors. To join or renew your membership, click on the link above. Annual Membership to the LSA is only \$15 per year and Junior Membership is only \$5 per year!

Accurizing the 1903A3 for CMP Competition: Part II

By: Danny Hudson



*Photo courtesy Tom Jackson

Several (gulp) YEARS ago, I began a two-part series on accurizing the 1903A3 rifle for Civilian Marksmanship Program (CMP) competitions. Suffice to say that getting married, having a child, changing jobs, and moving to a different state put part two firmly in the dusty folds of my memory until a recent conversation with LSA Treasurer Jay Hunt put me back to task. While my LSA status is now emeritus due to geography, I continue to follow and contribute to the shooting sports in my former home of 15 years. With that out of the way, let's revisit my two favorite subjects: shooting and the U.S. Model 1903 variants.

Barrel Inspection and Selection

Rifle barrels: the magic steel tube that produces exquisite joy, or maddening frustration. All shooters have experienced this paradigm. To the beginner, it just doesn't make sense that two supposedly identical things would produce such varying results, but to the knowledgeable shooter, we know that there are a multitude of factors that contribute to an accurate and precise barrel that can be evaluated and measured for potential performance.

Muzzle Wear & Throat Erosion

An easy way to determine the general status of a surplus military barrel is by measuring the bore to ascertain levels of throat erosion and muzzle wear. The CMP and other private suppliers offer gauges that allow us to measure bore diameter (actually land to land) at the throat and muzzle against an assumed as manufactured measurement of .300" for 30/06. These gauges are precision ground to where the "0" line would indicate a .300" measurement for a perfect bore. This will ostensibly give us a status check and selection criteria that would show level of rifling wear, but must be taken with a grain of salt within the following considerations:

- Many of these gauges are not ground true. I have thrown a few to the trash because they were over or under specification as measured with a good micrometer. Back check your gauges to ensure that you are getting an accurate reading. Each successive mark should be .001" bigger in diameter as you go up the gauge. Gunsmith supply companies also sell individual certified diameter plugs as a set from .300" to .303", but can be a bit pricey.
- 2. Manufacturing tolerances were relaxed during war time production, and even an unfired barrel can exhibit a land to land measurement as high as .302". Never assume that a new old stock barrel is good to go and slap it on your rifle without measuring first.
- 3. Copper and powder fowling can result in false readings. Make sure to clean the bore where possible before measuring.



Fig. 1: Measuring muzzle wear

Fig. 2: Measuring throat erosion

Now that we've checked the muzzle and throat and have really good numbers, we're golden, right? Wrong. All we measured was the lands, and that was only at the first inch of the barrel on either end! We can choose to stop there and assume a high condition barrel, and if no other opportunities to further examine are available, the odds are that it would be good enough. But we can and should go further.

- Detail clean the bore to remove any powder or copper fouling. Be sure to swab the bore liberally with gun oil (CLP, Break Free) after cleaning. This will ensure lubrication for the lead slug. Remove the bolt and place a rag in the receiver raceway to act as a catch for the slug.
- 2. I use old fishing sinkers as my bore slug, as they measure .314" in diameter by some wonderful twist of cosmic coincidence. Any pure lead ball, cast bullet, etc. will suffice as long as it is at least a few thousands above the anticipated .308" groove diameter for 30/06. Don't get overly ambitious and try banging a .44/40 cast bullet down the barrel.
- Apply gun grease (Bore Butter in my case) to the lead slug and hand center in the muzzle. Take a wood mallet, nylon hammer etc. and tap the slug into barrel until it is flush with the muzzle. Using a piece of ¼" hardwood dowel, gently tap the slug down the bore until it falls into the rag.
- 4. Measure the outside diameter of the lead slug to determine minimum bore diameter and measure the engraved portion of the slug to measure minimum land diameter.
 - a. The caveat to this is that pushing the slug completely through on one pass only measures the smallest diameter throughout the length of the bore. An alternate method is slug the bore incrementally with multiple slugs to find any oversized areas.
 I've also found that paying attention to how much resistance is felt when pushing a tight patch through can be a decent indicator of bore consistency without slugging. Again, gunsmith supply companies sell incremental plugs that can also be used.

Scope it! Technology is our friend!

We've all been fooled by the mirror shine when looking down a barrel. There is only so much detail that can be seen with the bore light method. If you have a Hawkeye borescope, Lyman bore cam, etc. use it. All hate and discontent can be seen.

Wood fit & Barrel Tension

With non-epoxy bedded wood and steel guns, inletting and wood fit are critical points that must be inspected. Before dismantling the gun, take a look at a few critical areas that may indicate issues. First, look carefully around the tang area of the receiver. Look at the height of the wood vs. the receiver tang height. If the receiver is too deep in relation to the wood behind and around the tang, this can indicate over inletting or compressed wood. Also look to ensure that there is a small 1/16" or so gap between the rear of the receiver tang and the wood. This gap prevents stock splitting at the rear but should not be excessive. Next, inspect the underside of the stock around the trigger guard area. Again, look to see if the trigger guard is overly recessed or other indicators of over inletting and poor fit. Finally, look at the front of the stock where the barrel contacts the fore end. This area should be properly channeled to fit the barrel. With these areas inspected, let's disassemble the rifle and check the wood underneath.



With the stock disassembled, carefully examine the tang bushing at the rear of the stock, both top and bottom. Look to see that the bushing itself is set slightly above the wood line of the inletted area. If the bushing is not mating up to the trigger guard and receiver tang, the rifle will be susceptible to temperature and humidity induced point of impact shifts as it will be sitting fully on the wood. The tang bushing will not disqualify the rifle, as replacement bushings can be installed. Also inspect for markings indicating that the wood has been crushed or compressed by the trigger guard or receiver tang.



Fig 4: Rear tang bushing exhibiting proper fit

Moving toward the front of the stock, inspect the recoil lug area. Look for cracks, obvious compression, missing wood and other anomalies that indicate poor fit. Ensure that the top flat behind the recoil lug recess does not show any signs of uneven contact that would indicate a warped stock or canted receiver fit. Place the barreled receiver back into the stock and check that it sits equally on the recoil flat and tang area with no indications of a fulcrum or high point and that no barrel contact is made between the recoil area and the barrel channel.



Fig. 5: Recoil lug area

With the barreled receiver still in the stock, observe the fore end pad area. The barrel should sit flush with the channel and the lateral wood should be spaced equidistant around the barrel. Check especially for a true fit the length of the fore end pad. Long stocks like the 1903A3 have a high tendency to warp laterally, and gauging this fit is critical to determining if you have any stock warping that would press against the sides of the barrel and negatively affect barrel harmonics. From here, place the handguard back on top and align by hand. Check to ensure that the top handguard does not touch the barrel, and make sure that the hand guard clips are tight and not rattling around. If the handguard does not have adequate barrel clearance, lightly sand the U portion of the hand guard to relieve clearance.

Receiver Tensioning

Now that we have determined that the stock and receiver fit are adequate, we need to reassemble the rifle and determine proper tension/torque parameters. Put the trigger guard, follower, and follower spring back into the rifle and gently push the guard into place. Insert the trigger guard screws and snug them up by hand. To properly torque up, we need to use an inch pound torqueing device similar to a Wheeler FAT wrench. Torque the front guard screw to 35-40 in/lbs. Always tighten the front screw first. Tighten and torque the rear-guard screw similarly, but do not exceed the torque value of the front screw. For my rifle, I torque 40 in/lbs in the front and 27 in/lbs in the rear. Through experimentation, I have found that those values produce the best accuracy. You will need to adjust as needed for your individual rifle. The goal is to have a non-stressed receiver that is not "hogged" at either fixture point that creates an uneven stress. These torque values have implications on the second and perhaps most critical stress point on the 1903A3, which is the barrel fore end pressure.

Fore end pressure

With the rifle assembled and torqued to a preliminary specification, it's time to measure the fore end pressure. Turn the rifle upside down in a cleaning cradle and level it. Loop a cord around the barrel and hang successive 1lb weights (trigger weights are perfect for this) from the barrel. Stop adding weight when you see a small gap between the barrel and barrel channel. This is the current fore end pressure. Best accuracy is between 6-8lbs (Springfield Armory settled on 8lbs as per their testing). If the fore end pressure is over 8lbs, you can relieve the wood in the barrel channel to achieve the optimum, or back off of the receiver screw torque. Things get a little trickier if the fore end pressure is light. Shims are the obvious choice but are not legal for CMP matches. Torqueing the front receiver bolt and lightening the rear receiver bolt can give you a modest increase, but for higher pressure increases you will have to address the tang bushing. Installing a longer tang bushing will change the geometry of the receiver fit and allow more fore end pressure but can be a tedious endeavor balancing the action. The previous discourse is a middle of the road prospect that will give improved results in most cases. Each rifle will display different preferences for accuracy within these variables, so the try and shoot method applies, especially with torque values.





Optimized Trigger Guard

The majority of trigger guards were manufactured as seen in Fig. 8 below. The metal to wood fit was minimal and was identified as a contributor to reduced accuracy. As an accuracy enhancement for the 1903A4, a small tab was soldered in place behind the trigger guard screw housing which allowed for better wood to metal contact area. If you can find them, this is an excellent accuracy enhancing replacement.





Fig. 8: Original 1903A3 trigger guard design Trigger Tuning

Fig. 9: Optimized trigger guard w/ pad

The as issued nature of the CMP legal 1903A3 disallows any aftermarket triggers and limits trigger pull weight to 3.5lbs. Most 1903A3s are well above this weight limit. Triggers are perhaps the most tactile part of the accuracy enhancement game, and subject to personal preference. However, most of us agree that a trigger with minimal creep and a clean break gives the best performance within weight limitations. The 1903A3 trigger is like most military triggers, highly variable from crappy to acceptable. To ensure the best performance there are some minor tweaks to improve. The figure below is of a 1903A3 trigger assembly. It is a very simple 2 stage design. To adjust the trigger pull, we have to understand the dynamics. If you want to reduce the 1st stage length, you would stone the front hump on the trigger. This puts the contact for the second stage earlier in the stroke. Reducing the second stage, or rear hump, would delay contact with the receiver, lengthening the first stage and shortening the second stage. The valley between the two humps must be maintained for proper two stage pull. The sear contact and striker/sear interface should be stoned to a perfect and polished 90 degree fit to give an optimal and clean break. DO NOT get overly ambitious on this area and remove too much metal. Cautious progress is the key.



Fig. 10: 1903A3 trigger & sear



Fig. 11: 1903A3 striker

Apocrypha

There are a few other small but pertinent items that can give you additional accuracy advantages, and in some instances explain those damn fliers. The stacking swivel is an oft overlooked source of buggery for repeatable accuracy. To most, it is just some stamped piece of historical nonsense that let soldiers make rifle tee pees when encamped. But, it can and will frustrate you to no end. If left to rattle around on the end, it creates an upsetting harmonic during firing. Make sure to tighten it in the forward position and check often to make sure it doesn't come loose. A second point of inspection is the sling swivel itself. When using the sling in a prone position, you are pulling a moderate amount of torque on the middle band that can be transmitted to the stock unless the sling swivel is tightened adequately. Make sure that both ends of the band are flush to the swivel itself and that the band does not twist under pressure.



Fig.12: Stacking swivel

Fig. 13: Sling swivel/middle band

Addendum: The rifle referred to and variously depicted in this article is a Smith Corona 1903A3 that I won on a cheap Gunbroker bid in 2006. This rifle has produced 4 gold medals at the Camp Perry CMP Springfield matches over the years and has consistently beaten any other 1903A3 that I've owned. It shot a 100-6X with Greek HXP ammo for slow prone in 2016. In a quest to figure out just why this particular rifle shot so well resulted in much of this analysis. Sometimes blind luck plays a part, but in the final summation, it just happened to have all the right combination of factors. I only had to apply a minimal amount of trickeration to squeeze out the last drop of accuracy.

Louisiana Shooting Association, Inc.

BALANCE SHEET

As of December 31, 2018

	TOTAL
ASSETS	
Current Assets	
Bank Accounts	
Checking	2,349.05
LSA Tower Gold Super Savings	33,265.67
Total Bank Accounts	\$35,614.72
Other Current Assets	
Undeposited Funds	0.00
Total Other Current Assets	\$0.00
Total Current Assets	\$35,614.72
Fixed Assets	
Air Rifles	7,567.10
AR-15 Service Rifles	11,400.00
AR15 Rim Fire Uppers	3,737.60
Gun Safe	848.28
M1911 Clark Custom Ball Gun	1,721.70
Misc Equipment	
Air Rifle Equipment	733.00
Conventional Pistol Equipment	129.28
Scopes and Stands	3,150.00
Total Misc Equipment	4,012.28
Rim Fire Pistols	1,843.87
Smallbore Rifles	2,850.00
Total Fixed Assets	\$33,980.83
TOTAL ASSETS	\$69,595.55
LIABILITIES AND EQUITY	
Liabilities	
Current Liabilities	
Credit Cards	
Visa Account	0.00
Total Credit Cards	\$0.00
Total Current Liabilities	\$0.00
Total Liabilities	\$0.00
Equity	
Jr Program	
Advertising	0.00
Bullet Fundraiser	0.00
Donations Received	675.08
Equipment	0.00
Grant Given	0.00
Grant Received	0.00
13LA20	0.00

11

	TOTAL
13LA25	0.00
Total Grant Received	0.00
Lodging	-1,000.00
M1 Raffle Ticket Expense	-498.93
M1 Raffle Ticket Sales	3,558.00
Match Fees	-725.00
Meals	0.00
Raffle Rifle Expense	-400.00
Retained Earnings	11,246.13
Shooting Supplies	0.00
Storage	-840.00
Travel	-544.06
Total Jr Program	11,471.22
Opening Balance Equity	63,059.74
Retained Earnings	1,160.69
Special Projects	195.00
Amicus Brief	-185.00
Match Fees	25.00
Rifle Usage Fee	246.20
Total Special Projects	281.20
Net Income	-6,377.30
Total Equity	\$69,595.55
TOTAL LIABILITIES AND EQUITY	\$69,595.55

2018 Fiscal Statement for Junior Shooting Program

The LSA operates a Junior Shooting Fund for the benefit of young shooters across the state. This fund is mainly supported by the sale of tickets for our annual M1 Garand Raffle, but occasionally receives Grants and Donations from other sources. Below is Fiscal Statement for the year ending 2018.

Category	Item	Amount
Retained Earnings from 2017		\$11,246.13
Expenditures		
	Junior Lodging	-1,000.00
	Match Fees	-725.00
	Travel Expenses	-544.06
	Raffle Ticket Printing Costs	-498.93
	M1 Garand Rifle Costs (2017 and 2018)	-400.00
	Storage Facility Fee	-840.00
Income		
	Donations Received	675.08
	Raffle Ticket Sales	3,558.00
Retained Earnings for 2018		\$11,471.22

2019 M1 Garand Raffle

<u>All</u> Proceeds Support Junior Shooting Programs in Louisiana



Donations are \$1.00 per Chance!

The 2018 Winner was **Norman T. Kamales** of Pineville, LA The 2019 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, 19 2019.** Winner need not be present at drawing to win **Please \$5.00 minimum purchase for mail orders.**

A	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		A
M1 GARAN	ID RAFFLE TICKET REQUE	ST FORM	
Name			
Mailing Address			
City		ST2	Zip
E-mail Address			
Daytime Phone Number _			
Please send me	_ tickets at \$1.00 per ticket. To	tal Enclose	d \$
I would like to save the cost of p e-mail that my donation was rec	ostage by having the LSA hold my ticket eived.	stubs and send	d a confirmation
I would prefer that the LSA mail	my ticket stubs to me.		

Th Ar	The Louisiana Shooting Association, Inc. An NRA-Affiliated, 501(c)(4) Tax-Exempt, Non-Profit State Association founded in 1966			
Luisiana Shooting Association	Membership Application			Louisiana Shooting Association c/o Jay D. Hunt, III, Treasurer 350 Quill Court Slidell, LA 70461
	New	Member	Renewal	
Name _				
Mailing Address				
City, ST Zip Code				
E-mail Address	-	<u> ハトク</u>		RINH
Cell phone				
Home phone				
It is the policy of the LSA to only use E-mail any other non-essential e-mails from the L party.	addresses for o SA, nor will you	official, important LS/ r name, address, tele	A communication. You phone number, or e-main	will not receive junk mail, offers, jokes, or ail address be shared with any outside
LSA Number (Renewal, if	known)			
NRA Number (o	otional)			
USA Shooting Number (o	otional)			
Shooting Club Memb	erships			
NEW POLICY: Memberships will be valid for a period of 1 year from the date of application.				
Individual: \$15.00/year years		Junior: \$5.00/year years For those under age 21 only,		
Individual Life Membership: \$30	0.00	Date	e of Birth	
Club: \$40.00/year year	5	c	lub Life Membershi	p: \$400.00
Signature				Total Enclosed
Date		Make Check Payable to Louisiana Shooting Association, Inc		siana Shooting Association, Inc
Name of Referring Member, if any	(PRINT!)	Credit Card Expiration D Name on C Signat	No ate ard ure	CV2