



## **From the Desk of the PRESIDENT**

**T**he Prez Says ...Thank you members, for your continued support to the RNSA during this long Gazette hiatus. Even without a Gazette and because of some dedicated RNSA members, we have continued to support the USN Marksmanship Team in several ways. Primary support has been provided during the annual matches on the west and east coasts as we serve on the match staff and in other supporting roles ... continuing to give back in the same way that we were supported when we were new shooters on active and reserve duty in the program. If you continue to attend the matches, you know who those members are; if you do not, then you should try to make it to the matches to compete or at least renew old friendships.

We use funds from RNSA dues to allay barracks fees at the national matches for both USNMT and RNSA competitors. The treasurer reports a bank balance of \$8135.09. We have in the past donated Creedmor and Champions Choice gift certificates to the high New Shooters (rifle and pistol) to help them add to their equipment kit. Capt Bob Ryan has sustained the Award Pistol program by contacting and soliciting pistol manufacturers to see if they are able to donate pistols to be used as awards to the high aggregate shooters on each coast. This year (2017) only one company was able to donate so we used

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## **From the Desk of the SECRETARY**



**H**ello to all RNSA members....My name is Kaarlo Elonen and I have recently taken over the duties of RNSA Secretary from Wally Wallace. Some of you older shooters may remember me as I was on the All-Navy Rifle Team from 1989 – 1991 and on the All-Navy Pistol Team from 1990 - 1991. I retired from active service in Jan 1992. I have shot on both the East and West Coasts although my shooting has been limited to the East Coast and the Nationals since my retirement. I am Double Distinguished with badge number 2080 in Service Rifle and Badge number 1388 in Service Pistol.

I am currently updating the RNSA membership rolls which are out of date with personal information and new members information. If you have joined or submitted the application to join the RNSA and have retired since May of 2015 please send me your personal information to ensure that I have it. The personal information should contain your name, address, email address, home and cell phone numbers, any dues you might have paid, the amount paid and the date you paid them. If you are a current member and have renewed your dues I would also like that date and amount paid and your current personal information to ensure I have the most current information on file.

Wally Wallace has informed me during

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**From the Editor's Desk:**



***As I See It!***

Once again the RNSA supported the Fleet and All-Navy shooting events. The Atlantic Fleet training and match was a little disappointing in that attendance was down from previous years and resulted in fewer new shooters.

The training phase of the event was weak, in my opinion, because the push is always towards shoot as much as possible. I believe there is sufficient time in the schedule to administer a strong training plan where new shooters could receive the best available training as possible.

Lieutenant Keith Trapp, an active duty officer, and I conducted a wind clinic and had 60 or more shooters attending. Lieutenant Trapp does not shoot service rifle competitively but is an F-Open competitor, which managed to put him on the U.S. F-Open Team for the World Championship where they won the Bronze medal in the team championship.

On the East Coast we held our annual meeting and dinner where we had more than seventeen people in attendance.

In my humble opinion the matches would not have been successful had the retired folks not stepped up to the plate and offered their assistance in running the matches. BRAVO ZULU to all of you that volunteered your time and expertise to make the fleet and All-Navy matches a success. You have proven your value to these efforts and are commended for your dedication. Keep up the good work and I will see you guys and gals next time around

Walt

some RNSA funds to purchase a second award pistol for each coast. We have always tried to maintain a fair east/west coast balance for any actions that benefit RNSA members.

Each year, David Reavis contacts a couple hundred manufacturers of shooting equipment for donations for our match raffles. He ensures an equitable distribution to east and west coasts. All items received are given to competitors at the matches by free raffle at our awards picnics. Robert Kasper gathers and maintains our shooting teams' historical records and photographs. His information is very important, especially when we receive notification of a member's death or questions about a person's participation in the Program.

I invite your ideas for actions for RNSA to undertake and for ways to use some of our treasury in support of Navy marksmanship activities for active, reserve, and retired shooters. Some sample ideas are found in a separate article in this issue of the Gazette. You can send your suggestions to any EXCOMM member. The actions regarding expenditure of funds are subject to approval by the EXCOMM members (Pres, EC VP, WC VP, Sec, and Treas)

I welcome Don Gussler as the West Coast Vice President and Kaarlo Elonen as our new Secretary. They join Bob Ryan - East Coast VP, Mark Lindsley-Treasurer, Robert Kasper-Historian, and Walt Walter-Gazette Editor to serve the RNSA.

I thank those of you who are still supporting the Navy Marksmanship Program by your attendance at matches and look forward to seeing you again next year. I have attended all but 1 or 2 years since I walked down that road at Dam Neck in 1987 looking for the USNR team. I thank those of you who are supporting other shooting sports through participation and mentoring of shooters. I thank those of you who have faithfully continued to support RNSA with your dues and camaraderie.

## **SHOOT YOUR AVERAGE**

Want a suggestion to use and share with others to help manage match pressure? I paraphrase here some advice that Walt offered to me one day. Walt said, "When you go to a match, just shoot your average". When you think about it, your average is what you deserve to shoot. You can shoot your average on any average day. Why artificially build pressure on yourself to shoot above your average in a match?

If you want your average to be higher, then practice! This worked for me several Fleet Matches ago. On day one of the two day rifle agg, I shot a 477 ... about my average. At the end of that day I was 10th, surpassed by some very nice scores, the 1st place score was 489. I began to think about how hard it would be to remain in the top ten. I would need to pull out an above average score just to hang in there. The next morning I realized that thinking wasn't going to be productive and I recalled Walt's advice, "Just shoot your average". That became my thought that second day ...shoot your average and let the scores fall where they may. I shot a 478 ... I am what I am. Somehow the first place shooter shot a 463 ... I ended up in 3rd place.

There are other approaches of course, so to cut down on an avalanche of responses, Walt also says, "I never entered a match that I did not intend to win." I'll bet that he taps into performance that he knows is there and knows how to get on match days. Different suggestions support different shooters at different stages of their chase. "Shoot your average" worked for me that day and other days as well (like when I won a leg at the Interservice Match) so I offer it as an idea to put in your bag of Sharing Phrases. Walt likely has suggestions for use when setting National Records.

Those were nice things Don has said but let me add a couple of anecdotal stories to the mix. As I have gotten older I know my shooting

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# The McAndrew Award

The UT1(SCW) Mark P. (Mac) McAndrew Award is presented for “Unselfish Support to New Shooters”. The award plaque displays Mac’s hat, bronzed, in all its character. Mac’s own unselfish support to new shooters provided the inspiration for the creation of the award. The first recipient of the award was CDR Don Lassell, 2008. Subsequent winners have been LtCdr H.J.”Walt” Walter, 2009; Capt. Bob Ryan, 2010; CWO4 Dave Vinkler, 2011; Cdr Mick



Glancy 2012; Kaarlo Elonen, 2013; Cdr Matt Bartel 2014; LtCdr Larry Spurlin 2015; SSGT Isaac McCaskill 2016 and Dave Venstra, Sr., 2017. We are proud to point out that every one of these awardees is a member of the RNSA. This is a proud demonstration of the fact that we are indeed giving back to the program the support that we received when we were new shooters.

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## Building a Service Rifle

*Joe Zerby*

So you want to build a NM service rifle... The following information is merely a tool to aid you in the quest for quality parts. It is by no means a complete and/or



authoritative document. Rather, it’s an aid to help you acquire the best parts available on your individual budget. Perhaps you already have an AR and want to convert it into a NM service rifle; this document will help ID parts you may need. The team is not affiliated with any of the companies linked below and does not intend to imply that one company / service provider is superior to another. A note about the prices listed – they are certain to change and may not be accurate; they were only accurate the moment they were copied. Many companies listed run sales from time to time; one would be wise to do homework in order to save \$\$\$. Also, some of the companies do offer military discounts – individuals will need to inquire / research that matter on their own. By all means, if you have questions feel free to contact me. I’m all too willing to share what I have learned the hard way over the past 20 years.

National Match Service Rifle Triggers

**Name Part Number link “normal” price**

RRA Two Stage Match Trigger Kit AR0093NMK  
[https://www.rockriverarms.com/index.cfm?fuseaction=category.display&category\\_id=647](https://www.rockriverarms.com/index.cfm?fuseaction=category.display&category_id=647) **\$120**

**Geissele Automatics Hi-Speed Service Rifle Trigger**  
<https://geissele.com/hi-speed-national-match-service-rifle-trigger.html> **\$279**

**Milazzo-Krieger M-K II Two Stage Match Trigger System**  
[www.wisconsintrigger.com/](http://www.wisconsintrigger.com/) **\$225**

Service Rifle Free Float Tubes

Service Rifle Float Tube (*Furnished with A2 handguards, sling swivel and gas tube*)  
 AR0127BRWNL  
<http://www.brownells.com/rifle-parts/forend-amp-handguard-parts/handguards-amp-rails/ar-15-m16-nm-free-float-barrel-sleeve-prod9943.aspx> **\$99**

**Service Rifle Float Tube (Includes NM handguards, NM gas tube and front sling swivel)**N/A  
<http://www.northerncompetition.com/nmtube/> **\$145**

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# “PREZ”

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skills have diminished so it was a Sunday morning and I was my way to a .22 cal benchrest match. I thought to my self, “just shoot well and have a good time and don’t worry about winning.” During the half hour of driving I told myself that a number of times.

When I got to the range I took my rifle out of the car and walked onto the range. I looked up and down at each person and thought to myself, “I can beat any one here today.” It was an automatic response of many years of competing. That is what everyone needs to develop if you wish to be a champion, Show no mercy, make everyone else work for the win no matter what the level of competition you are currently shooting. That’s what makes a champion.

## KEEP YOUR HEAD LEVEL

One evening I was invited to practice air rifle along with two local youth team coaches and an unassuming lady who represented the USA at the Sydney Olympics. The range officer was the high school daughter of one of the coaches.

They loaned me a rifle off the rack and I shot a 10 meter 10 bull target off hand ... got a 78. My personal best is a 91.

The young lady noticed that my head was tipped to the right as I sighted so she asked her dad to tell me about keeping my head level and how that improves your ability to achieve a steady balance. They ask their shooter balance on one foot, first with head tilted, then with head

level so they can experience the difference. I canted the rifle toward me to keep my head level and shot a second target, noticing an improvement in steadiness. I shot an 89, 2 points off my personal best. How grateful I was that she noticed my problem and also had the courage to make the suggestion to an old guy.



*Thought you guys and gals would enjoy this picture of Navy marksmanship awards.*

## “SECRETARY”

CONTINUED FROM PAGE 1

our turn over that some current members have indicated they no longer wish to remain members. If you no longer want to be a RNSA member please send me an e-mail saying that you no longer wish to be a member so I can remove you from the membership list.

Some things that your dues pays for are support to new shooters at Quantico, USNMT Team match fees, barrack fees for USNMT and RNSA members at the Nationals. Hopefully we can start getting more RNSA members at the matches to field an RNSA Team and your dues will go to paying those team match fees also. Granted we are all a little older and might not shoot the scores we use to but the RNSA Pistol Team came in first this year at the Fleet Matches in Quantico so RNSA members still have a few things to teach new shooters.

If you haven't attended the Fleet or All-Navy matches in the past several years things have changed since the budget cuts eliminated the support we had from Crane. If you have any shooting equipment that you are no longer using you could donate it so new shooters attending the matches will have equipment to use. An even better plan is to come to the Navy matches with your equipment and help or coach new shooters and give back some of the support you received when you first started shooting. If the sport and the Navy program is to grow we need to bring in new shooters every year and provide them with the best coaching more experience shooters can provide. Some shooters get their Distinguished badges and you never see them on the range again nor do they help those shooters trying to learn competition shooting. Since the Navy Shooting Program is an all-volunteer ran endeavor helping in any capacity, range or office duties, goes a long way.

## EAST COAST VICE PRESIDENT UPDATE:

*Bob Ryan*

The East Coast RNSA has supported the Atlantic Fleet Navy Team substantially this year. Not only do we provide substantial support to running the Navy matches in Quantico, but we also help run local training matches in the Norfolk Fleet area for both rifle and pistol. We kicked off the season with a high power rifle training match and clinic in February in Moyock, NC (the best civilian range in the Norfolk, VA area), then we hold at least one rifle match a month through November. We also help train pistol shooters with a weekly bullseye match at our local gun club in Chesapeake, VA. We have worked with quite a few new shooters to get them ready for the Fleet matches.



RNSA members are instrumental in running the Atlantic Fleet matches in Quantico. As always, Walt and Don assist with training and Walt provides outstanding umpiring services. Dave Vinkler and Dan Kordich work both the rifle and pistol sides by calling the line and acting as a range safety officer. I am the Stats Officer, plugging in all the scores along with Dusty Durstewitz and future RNSA members CDR Ruth Bates and CDR Dave Demille. Dave Reavis coordinates the door prizes for both coasts; he sends out the solicitation letters and then distributes the door prizes. Kaarlo Elonen is a superb training officer and works diligently to help new shooters. Matt Bartel very heavily supports the pistol side by supplying 1911 pistols and help on the line. The pistol training is superb thanks to his mentorship. And of course, one of RNSA's newest members, CDR (now Retired) Mick Glancey always lends a hand whether as RSO, calling the line or wherever he is needed. He is always training new shooters. Joe Paschal, Tom Hand and Don "Scooter"

Sandrock were also there and helped out quite a bit. We even have some other service members help out, Larry Strayhorn, an army retiree is always willing to lend a hand. RNSA is open to other service members that have helped out the Navy matches. On the East Coast Don Lassell holds an annual dinner/meeting during the East Coast Fleet matches. This year we met at Montclair's Family Restaurant just north on I-95 from the range. The dinner was very well attended with 17 RNSA members present.

One of the awards given at the Fleet match



is called the "Mac McAndrew" award. This is an award given to the person that has dedicated service to training and helping out new shooters and supporting the new shooter at the Fleet matches. RNSA member Dave Veenstra earned this award this year. Dave dedicates so much of his time and equipment to helping out new shooters. He would give the shirt off his back if it would help a new shooter. Dave Veenstra is actually very similar in personality and dedication to Mac McAndrew. He shows up every single year and works hard. He puts me to shame as Dave is 74 years old and is still shooting very actively, I am only 60 and can't seem to get to the range as much as I would like. Congratulations Dave! You really did earn this award.

I also maintain the "armory" for the east coast Navy rifles. Several years ago, the active team purchased 10 AR-15 lowers, and we built

up 10 rifles to support the team in the absence of the Crane armory van. I am slowly converting most of the rifles from the A-2 configuration to the A-4 so we can mount Optics. The Navy team has purchased several different types of scopes to try. The Leupold VRX Patrol is the particular scope we are trying to stick with. Leupold customizes the scopes for us by putting the M1 target turret on them, setting the parallax to 300 yards, and supplying green illumination (vice red) for a price of \$513. However, the lead time is very long. We do use these rifles for training throughout the year as Sailors can check out a rifle for local training.

Supporting the active and reserve Navy teams is the single most important thing an RNSA member can do. If you live in a fleet concentration area, consider getting involved in the training evolution. The Navy matches go smoothly when most new shooters are prepared when they get there. RNSA supports the Navy team financially. Award pistols were hard to come by this year, the only manufacturer that donated to the match was Glock. RNSA provided funds for both coasts to purchase a Rock Island 1911 pistol this year. For the Atlantic Fleet, the same shooter, Nick Owen, won both pistols! Nick, a fairly new Navy shooter, won the grand aggregate for both fleet and The All Navy matches. Fortunately for everyone else, he is no longer eligible to win any more pistols! (We still have a 2 award pistol lifetime limit.)

Additionally, RNSA paid most of the barracks expenses for upper level competitions, including interservice pistol, rifle, national rifle and pistol.

The Atlantic Fleet had a very successful year. Although navy attendance was somewhat less this year, the quality of training was superb. We sincerely miss having the Crane Van at Quantico to support the team. This is probably the single biggest obstacle that we face. Fortunately, Isaac (Chicken Mac) McGaskill came to our rescue once again. He provides much needed gun smithing services out of his own trailer. We would be lost without Chicken Mac. And with RNSA members

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## “RIFLE”

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**Service Rifle Float Tube (gas tube and handguards NOT included) N/A**

[http://www.compasslake.com/index.php?main\\_page=product\\_info&cPath=23&products\\_id=96](http://www.compasslake.com/index.php?main_page=product_info&cPath=23&products_id=96) **\$120**

**Service Rifle Float Tube (gas tube included) 1srft**

<http://www.whiteoakarmament.com/xcart/product.php?productid=17658> **\$105**

**Super Modular Rail MK7 National Match**

<https://geissele.com/12-7-super-modular-rail-mk7-black.html> **\$375**

**12 5/8” Midwest Industries T-Series Free Float Tube Handguard Quad Rail AR-15 Aluminum**

<http://www.midwayusa.com/product/2344161404/midwest-industries-t-series-free-float-tube-handguard-quad-rail-ar-15-aluminum> **\$155**

**National Match Service Rifle Rear Sights**

**M4 NM Detachable Carry Handle, with Modified Sight N/A**

[http://www.compasslake.com/index.php?main\\_page=product\\_info&cPath=23&products\\_id=95](http://www.compasslake.com/index.php?main_page=product_info&cPath=23&products_id=95) **\$185**

**M4 NM Detachable Carry Handle, with Modified Sight AR0052CNMASYX**

[https://www.rockriver-arms.com/index.cfm?fuseaction=category.display&category\\_id=292&CFID=529246765&CFTOKEN=28938093](https://www.rockriver-arms.com/index.cfm?fuseaction=category.display&category_id=292&CFID=529246765&CFTOKEN=28938093) **\$165**

**M4 National Match Carry Handle with 1/4 min Pinned Sight 1rch4pin**

<https://www.whiteoakarmament.com/xcart/product.php?productid=17880&cat=278&page=1> **\$230**

**A2 Upper Receiver with Pinned Sight, 1/4 min A2urs4**

<https://www.whiteoakarmament.com/xcart/product.php?productid=17813&cat=292&page=1> **\$284**

## Barrels

**Name Part Number link “normal” price**

**Service Rifle Barrel (20 inch - 1/7, 1/7.7, 1/8 twist) N/A**

[http://www.compasslake.com/index.php?main\\_page=i](http://www.compasslake.com/index.php?main_page=i)

[ndex&cPath=4\\_30](#)

**\$320 - \$500**

**Service Rifle Barrel (20 inch - 1/7, 1/8 twist)N/A**

<https://www.whiteoakarmament.com/xcart/home.php?cat=311> **\$220 - \$275**

**\*\*UNFINISHED\*\* Krieger 7.7 Twist - DCM HBAR Pattern - Pre Ban – Stainless N/A**

[http://direct.kriegerbarrels.com/collections/ar-15/products/ar-15\\_c\\_dcm\\_c\\_1x7\\_d\\_7-twist\\_c\\_stainless-steel](http://direct.kriegerbarrels.com/collections/ar-15/products/ar-15_c_dcm_c_1x7_d_7-twist_c_stainless-steel) **\$320**

**Criterion Barrel (20” .223 1/7.7 twist match AR15 Service Rifle) N/A**

<http://www.creedmoorsports.com/product/1015/Upper-Receivers> **\$285.95**

**Drop-in AR 15 Barrel W/ headspaced bolt N/A**

<http://www.shilen.com/ar15Barrels.html> **\$400 - \$480**

**1/8 twist 20 Inch Standard Stainless Steel Barrel Assembly AR0222ASY** [https://www.rockriver-arms.com/index.cfm?fuseaction=category.display&category\\_id=274&CFID=529499029&CFTOKEN=33449726](https://www.rockriver-arms.com/index.cfm?fuseaction=category.display&category_id=274&CFID=529499029&CFTOKEN=33449726) **\$270**

**Wylde Chamber, Headspaced; comes w/ complete bolt, barrel extension, and front sight tower N/A**

[http://saternmachining.com/cut\\_rifled\\_barrel\\_prices](http://saternmachining.com/cut_rifled_barrel_prices) **\$455**

**\*\*UNFINISHED\*\* 21” 5.56mm, 1:7 twist, 416 stainless steel, nickel boron extension, NATO chambered, raw finish GM-B4**

<http://www.gmriflebarrel.com/gm-b4-21-5-56mm-gunsmith-edition/> **\$109.95**

**Other Mil Spec parts needed to complete the build**

**A2/M4 Upper Receiver (and associated parts): \$45 and up depending on brand/configuration – blem/non blem**

<http://www.andersonrifles.com/product-category/upper-receivers/>

<http://www.primaryarms.com/ar-15-uppers/c/101200/>

<http://www.brownells.com/items/stripped-upper-receiver.aspx>

[http://www.joeboboutfitters.com/Upper\\_Receivers\\_s/2642.htm](http://www.joeboboutfitters.com/Upper_Receivers_s/2642.htm)

<http://www.surplusammo.com/stripped-uppers/>



and others...

**Lower Receiver (and associated parts):** *lower receiver must be purchased/transferred through a FFL dealer*

[http://www.joeboboutfitters.com/AR\\_15\\_Lower\\_Receivers\\_s/3021.htm](http://www.joeboboutfitters.com/AR_15_Lower_Receivers_s/3021.htm)

<http://www.surplusammo.com/stripped-lowers-1/>

<http://www.brownells.com/items/stripped-lower-receiver.aspx>

<http://www.primaryarms.com/lower-receivers/c/101400/>

and others...

**Bolt Carrier Group:** *\$75-250 depending on preferences...I choose \$75; shop around for best deal*

<http://palmettostatearmory.com/ar-15-05/upper-parts/bolt-carrier-groups.html>

<http://www.primaryarms.com/ar-15-bolt-carriers/c/100200/>

<http://www.surplusammo.com/bolt-carrier-groups/>  
<http://www.brownells.com/items/ar-15-bolt-carrier-group.aspx>

[http://www.joeboboutfitters.com/Bolt\\_parts\\_BCG\\_s\\_s/889.htm](http://www.joeboboutfitters.com/Bolt_parts_BCG_s_s/889.htm)

<http://www.andersonrifles.com/product-category/bolts-and-carriers/>

and others...

**Charging Handle:** *\$13 - \$25 must be a "standard charging handle" not a tactical model*

<http://palmettostatearmory.com/ar-15-05/upper-parts/charging-handles.html>

<http://www.brownells.com/items/ar-15-charging-handle.aspx>

<http://www.primaryarms.com/ar-15-charging-handles/c/101202/>

[http://www.deltateamtactical.com/AR-15-M4-Charging-Handle-Mil-Spec-Quality\\_p\\_4240.html](http://www.deltateamtactical.com/AR-15-M4-Charging-Handle-Mil-Spec-Quality_p_4240.html)

and others...

**Front Sight Assembly:** *if using M4 upper, you want an "F" type front sight assembly*

<http://www.andersonrifles.com/product/a2-front-sight-base-f-height/>

<http://palmettostatearmory.com/ar-15-a2-front-sight-gas-block-with-bayonet-lug.html>

[http://www.delton.com/AR\\_15\\_Front\\_Sight\\_Base\\_p/bp1034.htm](http://www.delton.com/AR_15_Front_Sight_Base_p/bp1034.htm)

and others...

**Delta Ring Kit:**

<http://www.andersonrifles.com/product-category/upper-receiver-parts/>

<http://www.bravocompanyusa.com/Delta-Ring-Assembly-AR15-p/delta%20ring%20assembly%20-%20ar15.htm>

[http://www.delton.com/AR\\_15\\_Delta\\_Ring\\_Assembly\\_p/bp1054.htm](http://www.delton.com/AR_15_Delta_Ring_Assembly_p/bp1054.htm)

[http://www.delton.com/AR\\_15\\_Delta\\_Ring\\_Assembly\\_p/bp1054.htm](http://www.delton.com/AR_15_Delta_Ring_Assembly_p/bp1054.htm)

and others...

Notes:

**Sights** – to compete at the highest levels (and win) your sights MUST/MUST track w/o backlash and return to zero. Many shooters assume their sights are good without ever having them checked w/ a dial indicator. You can have the “*most accurate barrel ever*” and continually shoot mediocre to poor scores if you have faulty sights. Clues to sight issues would be: constantly shooting groups that are not centered; no shot movement after multiple corrections or large shot movements with minor sight corrections.

**Barrels** – don’t get wrapped around the axle on “premium” barrels as a new shooter. Many inexpensive barrels, when free floated, shoot well enough for a new shooter to be competitive and shoot Master level scores – possibly High Master scores. High Power targets are quite forgiving – at 200 yards the 10 ring is over 4 MOA; at 300 and 600 yards the 10 ring is 2 MOA. Twist – 1/9 twist will work fine but will limit your bullet selection to 69 grains and lighter. I have not seen anyone be successful with 1:9 and 77’s at 600 yards, even beginners. A 1/7 or 1/8 twist barrel is required to stabilize the heavier bullets (77 – 82 grains). Since you asked, my preference is 1/8 twist for two rea-

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## “RIFLE”

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sons – one, they work and two, with faster twist (7, 7.7 or 6.5) you do lose some velocity w/ no real gain. Muzzle devices (flash suppressors, so called “pre-ban” barrels) are the same as “post ban” in terms of accuracy.



**Chambers** – again, don’t get rapped around the axle on chambers. If properly cut, they all shoot well enough to win. Some will produce more pressure/velocity while others provide more options for seating depth of long range ammo. CLE (2.430 COAL); Wylde (2.475 COAL); Sierra 80 (2.50 COAL) and NATO (2.550 COAL) – all work fine. If you plan on exclusively using 77 grain magazine length ammunition, the Compass Lake Engineering (Frank White) chamber would be my first choice.

**Gas hole size** – for a 20 inch barrel .092 - .096 is the industry standard. I make my barrels with a .092 gas hole because an increase in diameter of the gas hole directly influences felt recoil (increased muzzle rise in rapid fire strings). However, if you are a lazy bugger and don’t clean your rifle you may have cycling problems with a .092 gas hole due to build up of carbon etc. increasing friction enough such that the BCG does not cycle properly.

**Gas hole line up w/ Front Sight Assembly** – not all barrel makers locate gas port holes in the same location. I have seen anywhere from

.275 to .300 off the barrel flange. Not checking your front sight base to gas port location could cause cycling issues if not lined up correctly. Simple fix – rotate front sight base 180 degrees and center the gas hole in the hole of the front sight base, then measure the distance off the barrel flange with a feeler gage. When you install the front sight base use the feeler gage (with the measurement you just took) to ensure your front sight base is correctly positioned over the gas hole.

**Windage Adjustable Front Sight Base (FSB)** - Make sure your sling is attached to the float tube, and not the FSB. If you buy a standard FSB, drill & tap for 10-32 and sink your own adjustment screws. Center up your rear sight (indicator marks on the rear of the sight assembly), and use the screws to get your windage zero’d (first at 25 yards, then at 200). Remember the front sight moves OPPOSITE where you want the bullet to hit (to move bullet impact right, the front sight moves left). This will be your mechanical zero. Now make sure your no-wind zero is the same as your mechanical zero, and MARK YOUR SIGHTS!

**Buttstock/forend weights** – Some folks prefer a heavy rifle. A number of companies make lead weight wedges which fit the cleaning kit cavity in the buttstock, as well as a two-part weight to fit under the handguards (both weights make an EXTREMELY heavy rifle).

**A1 vs. A2 stocks** – For smaller shooters, the A1 buttstock is 1” shorter than the A2. With the 2016 rule changes, a collapsible/adjustable stock is now allowed.

**Mags** – Use whatever magazines you have, but make sure they work (last round bolt holdback every time, drop free of the magwell without assistance, and feed correctly EVERY time)

**Slings** – Slings come in 3 main varieties: cotton web, leather, and biothane. Most advanced shooters will use a leather or biothane (synthetic) sling. Check out youtube if you’re interested in the “no-pulse” configuration, in which case you’ll need a second sling to shoot stand-

ing.

**Optics** – The 2016 rule changes also included the use of optics (no greater than 4.5x magnification, objective smaller than 34mm). The main contenders are the Vortex (\$400), the Leupold (\$500), and the Nightforce (\$1300). Ask a friend to try one before buying, and pay attention to mounting; the scope needs to use a cantilever mount in order to get enough eye relief for all positions.

Hopefully this is helpful to get you started on an inexpensive rifle for service rifle competition. If you have questions, go to a match and ask shooters what they're using, and if you can try it out. Ninety nine times out of a hundred you'll get an enthusiastic "yes."

## Precision Reloading for Long Range

by

*Matt Bartel*

I started reloading after college, when I couldn't afford the volume of ammunition I wanted to shoot. I bought a Lee Anniversary Kit (\$90), which included everything necessary to start reloading except dies and components. I literally wore that press out before discovering the wonder of the progressive press. By this time I could afford to buy the best, and when it comes to progressive reloading, I'm a Blue Press (Dillon) guy. I've cranked out hundreds of thousands of rounds on multiple Dillon machines, but it wasn't until a few years ago that I became concerned about reloading precision. I still use a Dillon for pistol ammo and short line rifle ammo, but I now use a single stage press (RCBS Rock Chucker) for long range. I laughed at a certain HMC who neck turned his Garand brass (and nearly went to fisticuffs at Nationals trying to get it back)... until I invested in a shooting stick which

required neck turning. Now I cry. There's a lot of work involved in removing variability and uncertainty. I'll lay out the "extremes," and then give you an idea of what I think really matters.

Precision reloading relies on consistency. Brass, powder and bullet have to be the same each and every time...dimensions, burn rate, neck tension...everything needs to stay the same, or you introduce variability in what matters...delivering consistent center shots in competition. We start with once fired brass. In the case you've bought new brass, you still need to do all these steps, so once-fired is actually better (assuming it's been fired through your gun).

### Sizing

Unless you have Cerrosafe, or some other chamber casting material, we need to find out your chambers dimensions. I say *your* chamber because EVERY chamber is different. We need to know headspace and freebore. Headspace for a standard rifle cartridge is that distance from the datum line on the shoulder of the cartridge to the case head. After the first firing, the brass expands to this dimension (minus a small spring-back for extraction, which is immaterial to our discussion). This measurement represents how big your chamber is, and how much the brass has to stretch to fill it. In the case of "excessive headspace", your chamber is so large that the brass cannot stretch to cover it without breaking, usually resulting in case head separation. The work that brass does to stretch into the case uses energy and requires pressure which would otherwise propel the bullet down the barrel. We want to minimize and equalize this movement across all rounds we reload. "Well then why don't we make it zero?" you ask...a cartridge which EXACTLY fits the chamber has no room to expand after firing, and thus no room to spring back after pressure drops. Having tried the experiment, you are likely to end up with a sticky bolt (difficult bolt lift and difficult extraction), even when pressure is not an

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issue. The critical measurement is not the absolute number for headspace, but the relative number between fired and sized case (which is why it's not absolutely critical which headspace measuring tool you use).

What you are looking for is a relative difference between your fired case (fired from YOUR chamber), and the sizing “bump” you'll give the sized cartridges. When sizing, I push the shoulder back .005” to allow for consistent expansion. That's small enough that you minimize work hardening the brass (or cause case stretch), yet large enough to allow spring-back and easy extraction.

I recommend a full length sizing die, even for bolt rifles. Some think that neck sizing only prevents work hardening and unnecessarily stretching the brass. I think it doesn't make a difference...until your neck-sized-only brass suddenly won't chamber because the base has grown (don't ask how I know), so why risk it? You now have a full-length sized case with the shoulder set back .005” from fired size, and the primer punched out. Some die considerations: neck tension, concentricity /run out, and case length growth. Neck tension is usually described by a linear measurement: the difference between sized brass neck diameter and a loaded round, measured at the case neck. Most cases use a neck tension between .002” and .006”. I prefer a lighter neck tension (.002”), but truthfully it doesn't matter...as long as it's the same each time. Redding sells a “Type S” die which allows you to change neck bushings, and thus adjust neck tension. As an

aside, Sherri Gallagher won the long range championship at Perry using zero neck tension...she “soft seated” her bullets when closing the bolt.

Concentricity is a deep rabbit hole. I go so far as to rotate the brass 180 degrees in the sizing die for the neck to ensure concentricity. Good dies and presses do not usually have issues with run out. I do own a concentricity gauge. I will occasionally check loaded rounds for concentricity as a QA on the entire process. I have sorted by concentricity, yet found no difference where it counts...on paper.

### Trimming

During the sizing process the case grew longer, which requires trimming. There are multiple methods: from the low end of a Lee



case length trimmer (drill mounted, by hand, approximately \$15) to a Dillon 1200 powered case trimmer (in-line progressive, \$300), to a Giraud machine trimmer (indexes off the shoulder, hand fed, \$500), I've tried them all. The Lee system is just as consistent as any of the others, but it sure does tear up your fingers when you're reloading a lot. For any trimming operations, you have to ensure you've sized the brass first (it will grow in length

when sizing). I chamfer both the inside and outside edges to remove burrs and ensure I don't score the bullet jacket when seating (the Giraud does this automatically, otherwise a \$3 chamfer tool works great).

### Primer Pocket Uniforming

Here's where we're getting a bit extreme. There are a number of carbide cutters out there to cut the primer pocket (large or

small) to uniform depth. I have a set, but rarely use them...I've never seen a difference on paper, but benchrest shooters swear by them.

### Neck Turning

In the case of a custom, tight chamber, neck turning may be required...in most cases it's not, unless you're CDO (it's like OCD, only alphabetical). Neck turning is a process to make the neck thickness the same all the way around, and involves expensive tools (I have a K&M trimmer). Factory ammo is amazingly inconsistent with respect to neck thickness, which then affects neck tension...but not enough to matter on paper (although again, benchrest shooters swear by it).

### Sorting

Some shooters believe that the weight (and thus the volume) of brass will affect the pressure, and thus your shot placement. I've never been able to see a difference on paper, even in the largest spread of weights. Others measure bullet weights...I've not found any appreciable spread in good bullets (Sierra, Berger, Nosler, etc). Brass prep complete, your attention now turns to the projectiles. You can sort by weight, overall length, base-to-ogive length, or bearing surface. You can also point or meplat trim your bullets. Each is its own rabbit hole, but I recently read that the Army Marksmanship Unit finds that overall length is a sufficient analog to the other measurements (and it's easiest). I sort my bullets by weight and overall length, I don't trim or point. Some believe polymer tips provide consistency, I think it's a marketing ploy.

### Powder measurement

When dispensing powder, you have two choices...weight or volume. Most modern reloading use them interchangeably (i.e. set your powder measure for a certain volume, and thus an equivalent weight). Benchrest shooters only use weight. I use a RCBS ChargeMaster scale...it automatically dispens-

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Pat Mitternacht & Walt Walter Circa late 1990s



U.S. Navy Pistol Team @ Camp Perry, Circa early 1950s.  
Rear Ctr: LCDR Lloyd Mustin (Later VADM MUSTIN)



RNSA Rifle Team @ Fleet Matches Circa late 1990s

es a load while the previous charge is being put into a case and seated. Very efficient, and eminently repeatable with a few small modifications (soda straw in the dispenser, tweaking the feed speed). I have run experiments with “off” charge weights, and this is the most influential factor. A charge weight difference of .1 grains is measurable on target. Try loading 10 rounds, each .1 grains apart. The difference on paper (even at 200 yards) is measurable. You cannot simply use a volumetric powder dispenser and expect long range ammunition to be consistent enough to win.

### Seating

Now it’s time to bring it all together. When I seat projectiles, I again rotate the round 180 degrees and seat again in the die to eliminate as much runout as possible. Ensure your seating plug does not bear on the tip of the bullet, it will deform a hollowpoint (it should be a tapered ring of bearing surface). What length should you seat to? There are a number of gauges out there to help you determine freebore in your rifle (Stoney Point, now Hornady, makes the most popular one). The issue here is that this measurement changes over the life of your barrel as the throat of the chamber erodes with firing. I recheck every thousand rounds or so and adjust my overall length to “chase the lands.” Seating length usually depends on what type of bullet you’re loading. Very Low Drag (VLD) bullets typically like to be “jammed” (touch the lands), while secant ogive bullets (the majority of bullets on the market), like some small amount of “jump” before engaging the rifling. Seating length



## EAST COAST VP”

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and others stepping up we have once again provided top notch training and a very successful match. The active Navy Team OIC, CDR Jon Marvell is working hard to once again get full support for the Navy Marksmanship Team program to include the return of the Crane Van. Please do what you can to help get Navy shooters to the matches next year.

## THE SCORES WE LEFT BEHIND

*From the Historian, Bob Kasper*

Activity has been very light over the past few months as it appears we have reached the bottom of the barrel in terms of match scores from the past. Our most pressing need remains from the 1960s to the 1970s.

For those familiar with data storage, as it stands to date, Archive disc I contains 256 folders displaying 2,342 files for a totaling 3.19 GB of data, while Archive disc II has grown to 106 folders displaying 1,143 files at 2.84 GB of both Competitive Shooter’s reunion photographs and Camp Perry match scores by navy shooters.

I would like to share with the membership that sometime past I enjoyed a surprise visit from Craig Hamilton, son of Don Hamilton, who graciously shared a big box of Don’s memorabilia for Archive entry. Of special interest for me was an envelope containing 46 National Record certificates. It appears that Don was a meticulous record keeper and archivist, in addition to his renowned marksmanship skills.

Please remember that the RNSA Archive is a place to preserve your most cherished shooting memories. Good or bad. Tall tails and those golden moments that should be shared by all are most welcome. Please send your stories for publication.

# WEST COAST VICE PRESIDENT UPDATE:

*Don Gussler*

The west coast matches are shot on Range 116 Complex. The complex is made up of 4 ranges. (116A Rifle out to 800 yards for 8 points, 600 yards for 34 Points and 500 yards for 50 Points. We use 116A and 116B for pistol. 116A is used for the 50-yard line items and 116B (30 Points) for Timed and Rapid fire events. This helps cut the time down. We don't use 116C and 116D as they don't cover our course of fire.

Rifle Range is a switch back range as a draw comes into the low end of the line from down range which causes the winds to switch from side to side which makes it an interesting range.

We also have 117 range (1400 Meter) just to the east of us (Pits for 117 and pits 116A are 200 yards apart so when 117 is hot we have to exit 116 in the center or on the high side.

Some years we use the 1000-yard line on 117 but we can only get on the range in the afternoon due being in use during the mornings. Of course, this is when the wind picks up to help your marksmanship skills

As the Stat officer, I spend almost all of my time in the building doing check ins, stats or awards with very little time to get out of the building other than to run down somebody who with a score card issue or a challenge.

Normally we get a number of retired navy shooters that show up. Last year we had Ralph Legler, Jim Adell, Richard Belser, John Smith, Craig Busby, Craig Griswold, Ferdinand Lingad, Rodney Flowers, Ricardo Diesta, Virgilio Castro, Leonard Fiji, James Currier, Teolifo Mejia, David Walker as competitors. We also had Rod Minnick stop by on



crutches, (Had some knee surgery shortly before). I don't know who is on the retired navy shooters list but all are retired USN/USNR

We also had a unique day (Saturday) that we had to shut down shooting for the Commanding

General to go on a horse-back ride in the impact zone X-Ray, Yes our impact zone. That caused us to do cancel some matches and change them into paper matches versus actual shooting for score. We even rolled some Saturday Matches back to Friday and the others to Sunday



so that Saturday was open for the horse back event. Matches affected was All Navy Rifle, All Navy Pistol, Long range Pistol, and our 22 Match (Don Hamilton Match).



# ***Retired Navy Shooters Association Membership Application***

The Retired Navy Shooters Association was established in May 1994 and affiliated with the National Rifle Association shortly thereafter. The purpose of the organization as contained in the By-Laws is the encouragement of organized rifle and pistol shooting among its members, with a view toward a better knowledge on the part of such members of the safe handling and proper care of firearms, as well as improved marksmanship. This may be demonstrated in the fielding of competitive teams within the restrictions of Rule 2.11, National Rifle Association Rifle and Pistol rules. It shall be our further object and purpose to forward the development of those characteristics of honesty, good fellowship, self-discipline, team play and self-reliance which are the essentials of good sportsmanship and the foundation of true patriotism.

Application is open to any retired member of the regular military forces or military reserves (whether drawing retired pay or not) who has had an association with the Navy or Navy Reserve Shooting program, whether as a designated member of a previous team (either firing or alternate), having served as a coach, coordinator, assistant, materially assisted with the conduct of Fleet or All-Navy matches, or are designated a Navy Distinguished Marksman or Pistol Shot, or hold Excellence-in-Competition points towards such designation, may become a member of this organization on vote of the Executive Committee after subscribing to the following pledge and on payment of the usual initiation fee and dues. Members of the Navy and Navy Reserve within six months of retirement are eligible for membership with all rights pertaining thereto with the exception of competing on teams fielded by the Association (until their actual retirement is effective).

Name \_\_\_\_\_ NRA Status (Annual, Life, etc.) \_\_\_\_\_ Number \_\_\_\_\_

Address \_\_\_\_\_ Phone (HM) \_\_\_\_\_ (WK) \_\_\_\_\_

City/St/Zip \_\_\_\_\_ Email Address \_\_\_\_\_

**Please submit application with check payable to RNSA and mail to:**

email: [kaaelo@frontier.com](mailto:kaaelo@frontier.com)

**Dues: \$10.00 per year.**

Kaarlo Elonen, Secretary  
7393 Sugar Grove Road  
Sugar Grove, WV 26815

Retired Navy Shooter's Association

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ADDRESS SERVICE REQUESTED