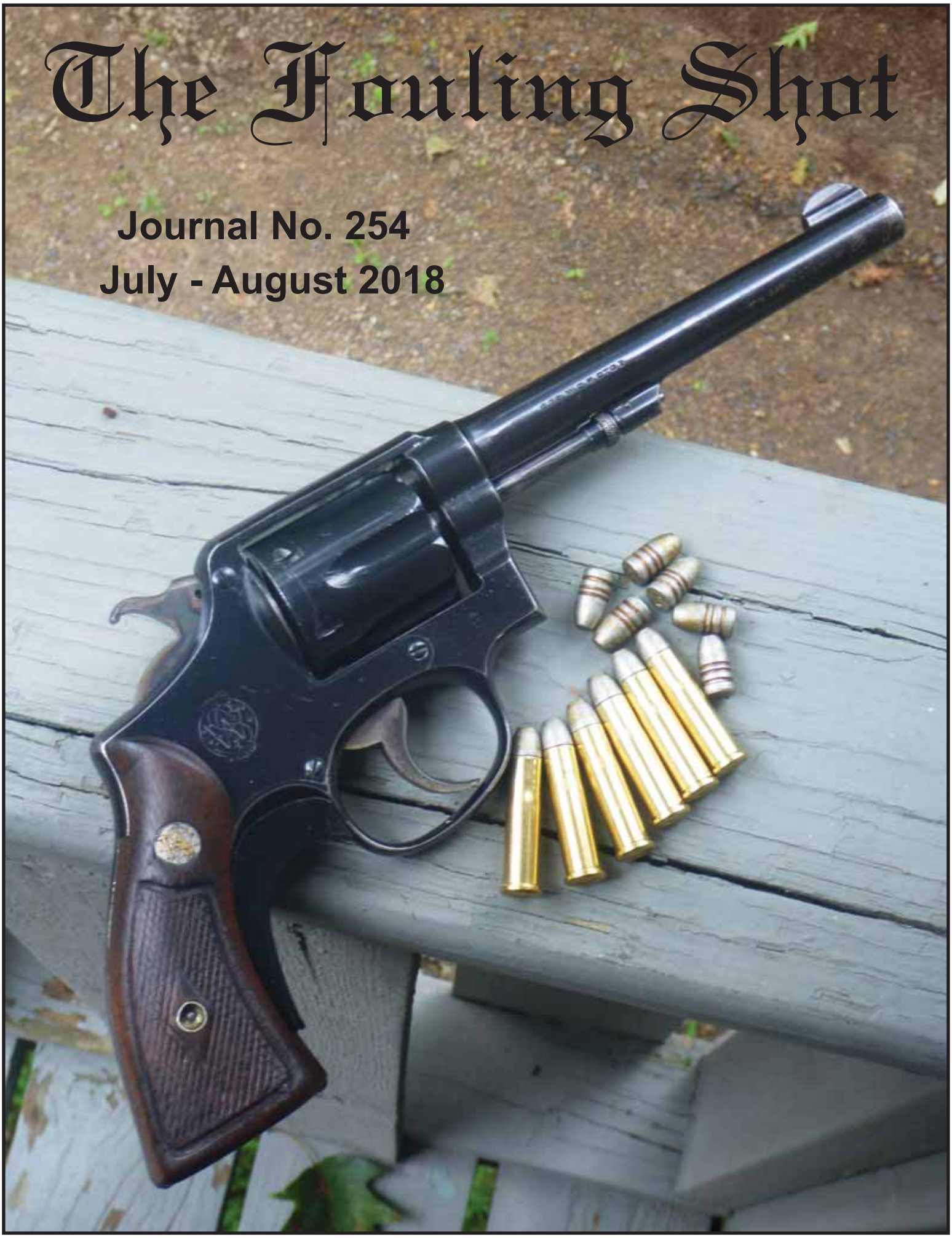
The Fouling Shot

Journal No. 254
July - August 2018



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Journal No. 254 July - August 2018

On the Cover: S&W Hand Ejector, 32-20. Photo by C. E. "Ed" Harris. See Ed's article in this issue

CBA Officials

FROM THE MAIL BOX

H4831 for Cast Bullets

Q I have several pounds of H4831 that I bought years ago when it was selling for 50 cents/lb. This was back in the mid 60s when I was an undergraduate and money was tight.

I remember reading somewhere Ed Harris's observation that a case full in a 30-06 wouldn't cause pressure problems. I assumed that was with a jacketed bullet. How does it work with a cast bullet with either linotype or Lyman #2 alloy?

Using the Lyman cast bullet manual I loaded some 314299 with 5744 for my 1909 Argy. They shot all over the paper at 50 yards. Using your 16 grains of 2400 I got a group 2.5x1.5 inches at the same fifty yards. How would this 4831 do in this cartridge and would you recommend a starting load?

A The 1909 Mauser is suitably strong for full charge loads in the range of 50,000 psi. I don't think you could get enough milsurp 4831 into the 7.65 Argentine case to get into any trouble.

I would be more cautious in an M1891. I have not loaded 4831 in the 7.65x53 cartridge, but have in the .303 British, which is close to the same capacity.

Speer No. 10 on p.261 lists 43 grains of IMR4831 in the .303 with a 180-grain jacketed bullet for 2218 fps, and a max. load of 47 grains for 2421 fps. Commercially produced IMR 4831 is a bit faster than milsurp, so I think you should be OK using that data as a guide.

I used 40 grains in the .303 British with #314299 cast 13 BHN and sized .314" with Winchester WLR primers for about 2000 fps in my Long Branch No.4 and it shot well. That should work as a safe starting load in your 1909 Argy. Please let me know how this works out for you.

C. E. "Ed" Harris

Cast Bullets in a 357 Mag. Carbine

Q My carbine is a Henry Big Boy Steel in .357 Mag. The carbine is accurate and a wonderful shooter with various jacketed 38 Spl. and 357 Mag. jacketed factory loads. I've single loaded and shot a load that I use in my 38 Spl. snubnose as well. It's a 150 grain button nose wadcutter cast from 1-20 in 38 Spl. brass with a stout charge of Bullseye. No leading at all. Obviously this will not feed correctly from the magazine, hence the single loading.

The only mold I have that is appropriate for the Henry would be a RCBS 38-150-SWC. It is a plain base bullet, not the gas check version. I have on hand various powders that are appropriate for a 357 Mag to try; Unique, Bullseye, 2400, and a small amount of Accurate #9. I will also be using 357 Mag brass.

Here's my problem: The alloys I have on hand are pure lead, 1-20, and Lyman #2. The lube I have is White Label 50/50. I would like to see 1550 to 1650 fps. Assuming the bullets are sized correctly for the barrel and fit is good, can I push this bullet using #2 alloy and 50/50 lube to 1600ish fps without severe leading? Would I be better off buying another mold that uses a gas check?

A Firing full-charge .357 Magnum cast loads in a 20" carbine the velocity will certainly exceed the threshold where good accuracy and freedom from leading can be expected with plainbased bullets, regardless of their hardness or alloy used.

Depending upon powder type, it is normal to gain 150-250 fps firing the same .357 ammunition in a carbine versus a revolver.

Plainbased bullets of 8-10 BHN cast of alloys similar to 1:30 or 1:20 give excellent results in blackpowder cartridges such as the .32-20, 38-40 and .44-40 up to about 1000-1100 fps in a 6" or 7-1/2" revolver or 1300-1400 fps in a carbine. They also perform well when loaded down somewhat less than a full-charge load in the .357 and .44 Magnums.

If accuracy is most important to you, just how important is getting 1600 fps, if the load is less accurate and leads, or forces you to put on gaschecks?

I would fully expect you could get all the accuracy and game performance you seek with starting level loads in the .357 Magnum, or in .38 Special +P loads, which all top out at about 1300-1400 fps in the rifle and will give 1000+fps in the revolver. This is what I do with my revolver-lever rifle combos and I can assure you that the deer cannot tell the difference.

If wanting loads primarily for rifle use only, with only occasional intermittent handgun use required, as in a hunting situation, the elegant and simple solution is to fill the .357 Magnum or .44 Magnum case to capacity with H- or IMR4198 or RL7, so that the charge is compressed about 1/8" by the seated bullet, in EXACTLY the same way black powder is loaded in the .44-40 and similar cartridges. This combination gives full-charge black powder rifle ballistics, about 1350-1400 fps and about 1050 fps in a revolver, using a standard-weight bullet for the caliber. In

(continued on page 254-6)

2018 Military Rifle National Tournament

By Michael Kastning

Over the weekend of June 9-10, the CBA National Military Rifle Tournament was held at Paul Bunyan Rifle and Sportsman Club in Puyallup, WA. If you have ever been to the Pacific Northwest in June, you would know that the weather could bring almost anything. We had rain, cold, warm sunshine, cold sunshine, hail, wind, everything except snow. We had 17 shooters turn out to shoot the match, some veterans, and some first timers. Anna Lynn from Puyallup, a first time national match shooter, shot well enough to earn a gold medal, quite a feat for a first timer. Veteran West end shooters Mitch Migliaccio and John Shauf won the Issue and Modified Iron classes, holding off everyone including the shooters from the middle part of the country that made the 1500+ mile trip.

Bob Haufschild from Arlington SD continued his streak of accurate scope shooting winning the class, although he was pressed a bit harder than in years past thanks to good shooting by others in the very competitive class.

Thanks to all that helped run this match. The target crew was as efficient as anyone had ever seen, the scorers did a great job, and Loren Peter kept everyone safe and shooting as he called the line expertly.

One thing missing from the Tournament this year, was a Big Bore Shooter. As we cannot easily let this class go without a champion, the decision was made to award it in a bit of a different manner for 2018. Due to the lack of enough shooters for a qualified class at the tournament, the CBA POSTAL MATCH will be used to help identify the 2018 National Champion. The plaque will be awarded to the winner as calculated between the Match #10 Military Big Bore group match and #19 Military 200yd score match. Its only 30 rounds total on paper, but should be enough to get a winner sorted out.

Military Rifle National Tournament -Paul Bunyan Sportsmans Club - Puyallup, WA

Match Director: Doug Shellenberger **June 9-10, 2017**

Temp: 55F to 62F Range Faces: NorthWest

Competitor		Equipment			Bullets					Loads		
Name	Class	Cartrdge	Rifle Mk	Scope	Mould	Wgt	Alloy	Nose	Bullet	Powder	Prmr	M / V
Home Town			Model	Power	Design		Ladl/Btm	Base	Lube	Charge	No.	E / C
Mitch Migliaccio	IS	30-06	S C	none	Lyman	223	WW+2%tin	3018	NRA	IMR4198	Fed	1685
Puyallup, WA			1903-A3	none	311335		Ladl	3180		20.0	210	Chro
Duane Nelson	IS	30-06	Remington	none	NOE	209	range scrap	301	Lyman alox	A5744	CCI	1450
Sioux City, IA			1903A3	none	311299		ladel	310		20.0	200	Est
Michael Kastning	IS	30-06	Remington	none	NOE	195	92-6-2	taper	WL 2500	IMR4759	CCI	1475
Elk Point, SD			1903-A3	none	311-188FN		ladel	311		18.5	250	Est
Leo. Westhoff	IS	30-06	Remington	none	Lyman	199	Lino	301	Javelina	Varget	WLR	1650
Eatonville, WA			1903A3	none	311299		Ladel	311		28.0		Est
John Schauf	MI	30-06	Rock Island	none	Schauf	204	50%-50%	302	LBT	Alliant	WLR	1500
Puyallup, WA			1903	none	311679		Lino-WW	3085	Blue	2400.0		est
Ron Yatso	MI	30-06	SC	none	Lyman	202	18BHN	301	LBT	IMR4759	WLR	1500
Tacoma, WA			1903A3	none	314299		ladel	310	Blue	19.0		Est
Michael Kastning	MI	30-06	Rem	none	Lyman	205	1pb,1L,#2	303	LBT	SR4759	CCI	1560
Elk Point, SD		Springfield	1903-A3		314299		btm	312	Blue	19.0	250	Chro
Steve Conner	MI	30-06	Springfield	none	RCBS	187	LYMAN #2	3005	LS BAC	IMR4227	CCI	1450
Tacoma, WA			1903	none	180FN		BTM	311		18.0	200	Est
Bob Haufschild	MS	30-06	Rem	Leupold	Lyman	205	1pb,1L,#2	303	LBT	SR4759	CCI	1560
Arlington, SD		Springfield	1903-A3	6X	314299		btm	312	Blue	19.0	250	Chro
Ron Heilman	MS	30-06	Springfield	Unertl	Schauf	204		301	Alox	IMR4227	Win	1620
Puyallup, WA			1903A1	6x24	311299		Ladel	3095		21.0	WLR	Chro
Anna Lynn	MS	30-06	Remington	Bushnell	Schauf	186	50%-50%	300	LBT Blue	AA5744	WLR	1605
Federal Way, WA			1903A3	6x24	309SP		Lino-WW	309		20.0		Chro
Michael Henniger	MS	30-06	Eddystone	Leupold	NOE	195	Lino	302	BAC	2400	WLR	1550
Portland, OR			P-17	6X	311299		Btm	311		16.8		Est
Doug Shellenberger	MS	7.62x54R	SKY	Vortex	Schauf	207	75%lino-25% scrap	301	LBT	Alliant	Rem 9	1635
Puyallup, WA		SKY	M39	4x12	taper		ladel	311	Blue	2400.0	1/2	Est
Pete Voss	MS	7.5x55	Schmidt-Rubin	Burris	Lyman	199	75%-25%	300	BW ATF	RL-7	CCI	1550
Santa Cruz, CA			K-31	6X	311334		WW-Liino	311		23.0	BR	est
Bill Anderson	MS	30-06	Rem	Weaver	Schauf	205	50%-50%	301	Alox	Alliant	Fed	1500
Camas, OR		Springfield	1903-A3	6X	30-195SP		WW-Lino	309	beeswax	2400	210	est

Military Rifle National Tournament --- Paul Bunyan Range --- Puyallup, WA

Match Director: Doug Shellenberger — ***SCORES & GROUPS*** — **June 9 & 10, 2018**

Competitor	Class	100 Yd AGG	x	200 Yd AGG	x	GRAND AGG	x
Mitch Migliaccio	Issue	179	1	192	5	371	6
Duane Nelson	Issue	193	7	172	2	365	9
Mike Kastning	Issue	185	2	180	0	365	2
Len Westhoff	Issue	154	0	162	1	316	1
Ron Yatso	Mod Iron	191	4	189	5	380	9
John Schauf	Mod Iron	186	5	190	4	376	9
Mike Kastning	Mod Iron	189	5	178	2	367	7
Steve Conner	Mod Iron	186	3	180	3	366	6
Bob Haufschild	Mod Scope	199	8	198	11	397	19
Doug Shellenberger	Mod Scope	197	4	193	9	390	13
Anna Lynn	Mod Scope	197	8	189	7	386	15
Ron Heilman	Mod Scope	197	10	191	6	388	16
Ben LoCicero	Mod Scope	193	8	188	4	381	12
Mike Henniger	Mod Scope	191	2	189	6	380	8
William Anderson	Mod Scope	187	2	189	5	376	7
Pete Voss	Mod Scope	182	3	183	4	365	7
Alice Gardner	Mod Scope	175	3	DNF	0	175	3

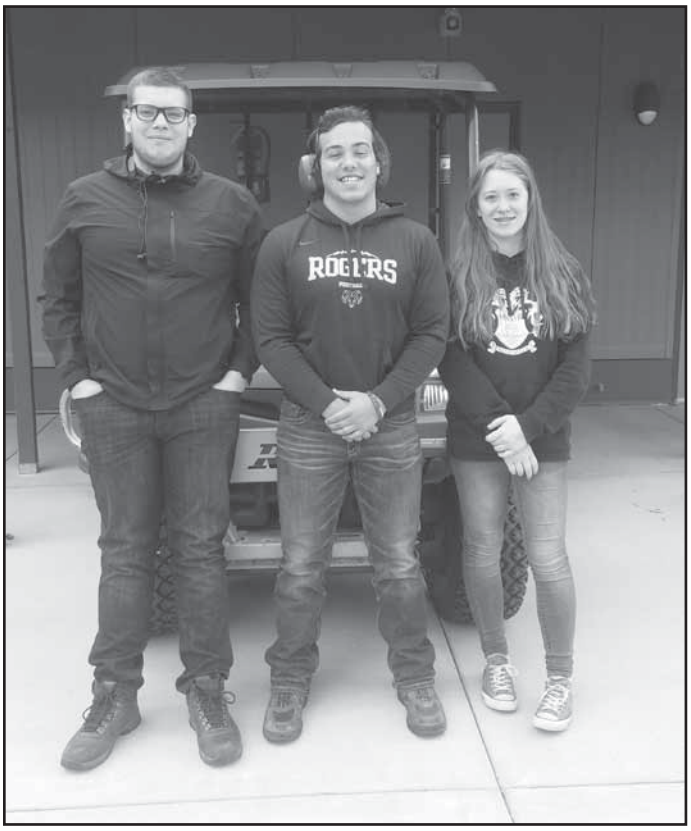
Grand Aggregate Scores & Group MOA's Are Sorted By Class

5 SHOT GROUP AGGREGATES			GRAND
Competitor	100 Yd	200 Yd	MOA
Mitch Migliaccio	1.517	5.2655	2.075
Duane Nelson	1.875	5.7513	2.375
Mike Kastning	2.66525	4.619	2.487
Len Westhoff	3.124	6.742	3.248
John Schauf	1.856	3.561	1.818
Ron Yatso	1.810	4.4855	2.027
Steve Conner	2.170	7.451	2.948
Mike Kastning	4.874	3.836	3.396
Bob Haufschild	1.3575	2.787	1.376
Mike Henniger	1.144	3.486	1.444
Ben LoCicero	1.546	3.1238	1.554
Anna Lynn	1.463	3.724	1.663
Ron Heilman	1.24225	4.4728	1.739
Doug Shellenberger	1.398	4.267	1.766
William Anderson	1.77175	4.288	1.958
Pete Voss	1.84875	6.1598	2.464
Alice Gardner	3.59925	DNF	DNF

10 SHOT GROUP AGGREGATES			GRAND
Competitor	100 Yd	200 Yd	MOA
Mitch Migliaccio	2.258	6.769	2.821
Duane Nelson	3.087	6.606	3.195
Mike Kastning	3.211	6.781	3.301
Len Westhoff	3.360	8.276	3.749
Mike Kastning	2.117	3.926	2.040
John Schauf	2.363	6.361	2.771
Ron Yatso	4.385	4.700	3.367
Steve Conner	3.368	9.219	3.988
Ron Heilman	1.128	3.828	1.521
Anna Lynn	1.782	3.388	1.738
Bob Haufschild	1.110	4.956	1.794
Ben LoCicero	2.02	3.347	1.847
Mike Henniger	2.001	3.986	1.997
Doug Shellenberger	2.480	4.7755	2.434
William Anderson	2.729	4.486	2.486
Pete Voss	2.298	7.488	3.021
Alice Gardner	3.704	DNF	DNF

100 YD OFFHAND SCORE		
Pete Voss	MOD SCP	159-1x
Mike Kastning	MOD SCP	152-0x
Duane Nelson	ISSUE	148-0x
Steve Conner	Mod Iron	123-0x

Class National Champion	
TBD	Big Bore
Mitch Migliaccio	ISSUE
John Schauf	MOD IRON
Bob Haufschild	MOD SCP
Pete Voss	OFFHAND



The target crew: Kyle Horner, Kyle Peter, Kassim Peter

A view of the firing line

Photos courtesy Al Richardson

(continued from page 254-3)

revolvers there will be some unburned powder, but the loads will be accurate and shoot well. Most of all they offer field interchangeability of the ammunition to be used in both rifle and revolver.

It has also been my experience that most lever-actions do not feed SWC bullets well, and I think that you would be better served with an ogival nosed "Cowboy" bullet having a large meplat, cast no harder than 1:20 tin-lead. 50-50 plumber's lead and wheelweights with about 1% tin added to improve fill-out is a good alloy. Any of the 158-160 grain Cowboy slugs perform well on game when cast softer. I use Lee Liquid Alox with these loads or 1:4 ATF (automatic transmission fluid) and beeswax.

C. E. "Ed" Harris

CBA News

By John Alexander

Secretary

I am happy and relieved to announce that Bill Barglof has stepped forward (maybe with just a bit of arm twisting by Dan Hudson) and agreed to take over as secretary, a position held by Mitch Migliaccio for the last several years.

Bill is an active competitor in PBB class as well as in our military matches. Bill's home range is Wind Hill the source of many of the shooters who have done more than their share of filling vital CBA positions and keeping our Association going over the years. You are now part of a tradition Bill; we may never let you escape. I know Bill well enough to know he will be an active member of the Board and will not hold back with his opinions - both good things. I hope Bill will write a short piece for a future Fouling Shot to introduce himself.

National Tournament

There is still time to enter the CBA's National Tournament at the Pioneer Gun Club of Kansas City September 6 -9. Come for just the official nationals on the weekend or come also on Thursday for the military shoot and enjoy the offhand, quarter bore, and little bore matches on Friday. Two TC Compass rifles will be given away by drawings. They are in the new 6.5 Creedmore caliber. Both this rifle and the caliber have had a lot of rave reviews for their accuracy.

The CBA Forum

There is a great article by Ed Harris being discussed on the CBA forum now about how 13 grains of Red Dot is a good cast bullet load for a wide range of rifles. The discussion that will follow should be interesting. Don't miss the interesting conversations on the forum. ◎

EyePal's "Eye See It" Contest

The winner for the May/June 2018 #253 issue of the Fouling Shot is Rus Arnold for his article "Ross Rifle - Cast Bullets - And Years." His photos put his artcle over the top. Thank you, Rus, you will be receiving a set of EyePals for making the Fouling Shot the great cast bullet magazine it is.

The Fouling Shot Trivia Question Contest

First the rules: 1) Only one entry per member. 2) Answers must be emailed or mailed to the address below and postmarked by July 31st, 2018. 3) CBA board members & their family members are not eligible. 4) All correct answers will be placed in a drawing for a prize. 5) One winner will be drawn and announced along with the correct answer & prize won in a future FS. 6) Prizes will vary each time, and will be items such as molds, gas checks or other items of interest to CBA members.

Since we as cast bullet shooters are curious by nature, the number of correct vs. incorrect answers will be published (no names though, just the stats)

So, without further ado……

Which WWII era company cataloged both a .25 & .30 cast bullet mold with a boat-tail design?

Good luck!

Please don't forget to give me your name with your answer. Please send your answers to:
David Reiss, 4206 S. Elm Ave., Santa Fe, Texas 77517
chefreiss@gmail.com

Due to the FS going out so late, we will announce the winner of the FS #253 Trivia Question in FS #255 and from here forward all winners will be announced two issues later.

PC is Coming Whether We like it or Not

By John Alexander

We have been warned by Dan Lynch, of Mountain Molds, and others that powder coated bullets had potential. Dan wrote an excellent series of reports to the CBA Forum a couple of years ago about shooting powder coated bullets in various calibers. Dan did extensive testing of products and procedures for powder coating as well as extensive shooting tests in a variety of calibers at high velocity (2,800 fps or so if memory hasn't failed me). As I remember his best loads produced ten shot groups that **averaged** very close to one inch at 100 yards.

That should have been enough to get our attention. However, powder coating wasn't how we had been taught to do things and most of us are set in our ways. So, with a few exceptions, including myself we kept right on squeezing our bullets through a lubrisizer as Harry Pope said to.

A more and louder warning came in a mostly unread part of the May/June Fouling Shot. The results of postal match #1 (Winter Benchrest) show that both the group and score matches for both production and hunting rifle classes were all four won by the same shooter. My friend David Pape of Oswego, Kansas is turning postal match shooting into a paying proposition using powder coated bullets and a non- cast bullet caliber called the 223.

David is a serious shooter and not afraid to try new things, but he is not obsessive about it and as I understand it he spends more time roasting wienies, catching hybrid bluegills and practicing tomahawk throwing with his two grandsons. Nevertheless, he apparently knows how to shoot powder coated bullets better than most of us shoot the lubricated kind.

It is true that the winter benchrest postal match was lightly attended. But David's scores show that, if he could have kept up that pace he would have done very well, or won, in production or hunting rifle class at most of the last few National Tournaments. Groups of .763" or scores of 99-1x aren't exactly common in production class. Maybe we should take another look at powder coating bullets. ◎

Tales from the Back Creek Diary

America's Classic, Center-Fire, Utility Small Game Cartridge - the 32-20

By C.E. "Ed" Harris
Gerrardstown, WV

Ric Bowman gave us a wonderful saga entitled "My Thirty Years with the .32-20" in FS 250-17. I wanted to reflect admiringly upon Ric's work from an "East Coast" perspective and cover load data in greater detail. The .32-20 was very popular for utility use from about 1890 until WW2 among farmers and outdoorsmen east of the Mississippi. It survived the transition to smokeless powder well and remained popular, even when production of new guns chambered for it ceased in 1941. There were enough existing .32-20 rifles and revolvers to keep this mild, pleasant and effective cartridge barely alive until Cowboy Action shooting enthusiasts re-discovered it, finding its mild recoil and report, good accuracy and adequate energy as attractive as rural-agricultural users did well over a century ago.

Post WW2 .32-20 loads generally featured a 100-gr. flat-nosed lead or jacketed soft-point bullet. Other than private-label cowboy loads, the only .32-20 rounds commonly found today on store shelves are 100-grain lead flat-nosed bullets loaded by either Winchester or Remington. High velocity 80-grain "Mushroom" varmint loads once loaded for the Winchester '92 should never be fired in revolvers.

Pre-WW2 smokeless .32-20s were intended to perform acceptably from either rifles or revolvers. Hercules Infallible (similar to modern Unique), Sharpshooter (similar to SR4759), or DuPont SR-80 (similar to Herco) powders were commonly used. Post WWII WRA and Western cartridges used WC630 (a Ball powder resembling today's AutoComp). Current W-W loads use WC230 (non-canister similar to 231). Remington loads a non-canister flake powder similar to that used in their .22 LR ammunition. Safe revolver loads with modern powders are 3.0-3.4 grains of Bullseye, 3.5-4.0 grains of W231 or WST, 4.0-4.5 grains of Unique or AutoComp with Accurate 31-105T or Lyman #311008 cast in soft 8-10 BHN alloy.

IMR4227 and IMR4198 produce satisfactory low-pressure smokeless loads for black powder rifles, such as the Winchester 1873 and Colt Lightning, using charges listed in the Lyman Cast Bullet Handbook, 4th Edition (2010) on p.173. Unburned powder particles leftover from these

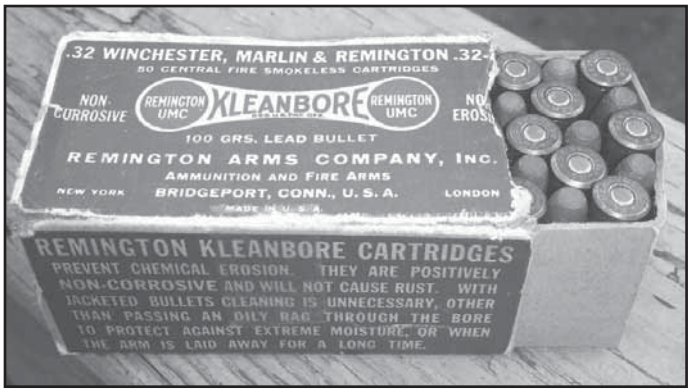
propellants are a nuisance when fired in revolvers, so while safe, I recommend that these powders be used for rifle loads only.

Despite its being frequently recommended, I found Alliant #2400 to be less than ideal due to unburned powder in revolvers, when loaded to standard pressures. I list only one maximum, but standard pressure load, because most published data already out there is simply is "too hot," for older guns.

I found Olin AutoComp highly suitable for the .32-20, as is TiteGroup! Both gave uniform velocities, complete combustion and good accuracy with safe pressures. RCBS Little Dandy Rotor #1 meters 3.2 grains of TiteGroup, approximating factory lead loads. The #3 rotor measures 4.5 grains of AutoComp, a full-charge, dual-purpose rifle and revolver load approximating pre-WW2 Remington-UMC "Dog Bone" lead ammo. The #4 rotor meters 3.4 grains of Bullseye, approximating modern factory lead loads.

Catalog .32-20 ballistics which claimed 1000 f.p.s. from revolvers were based upon solid test barrels. My chronograph testing at NRA never saw 1000 f.p.s. from any .32-20 factory loads fired from a revolver, except for pre-WW2 Remington-UMC "Dog Bone" logo ammo fired in a particularly tight Colt Single-Action with 7-1/2 inch barrel and 0.003" cylinder gap. Breaking 1000 f.p.s. from a .32-20 revolver requires hand-loads exceeding the SAAMI MAP of 16,000 psi, and probably actually exceeding 20,000 psi. Smokeless-frame Colt Single Actions and S&W Hand Ejectors made after 1918, having heat-treated cylinders, can tolerate somewhat heavier loads, when used in moderation. But please spare the classic Colt Police Positives and Army Specials from "hot load" abuse, because they WILL "shoot loose."

Measured Revolver Velocities: My five-inch Colt Police Positive Special was made in 1924 and has a 0.005" cylinder gap. The pooled average of seven samples of factory .32-20 loads was 814 fps. This represents a sensible loading level when assembling revolver loads using fast-burning powders like Bullseye. Current production 100-grain lead

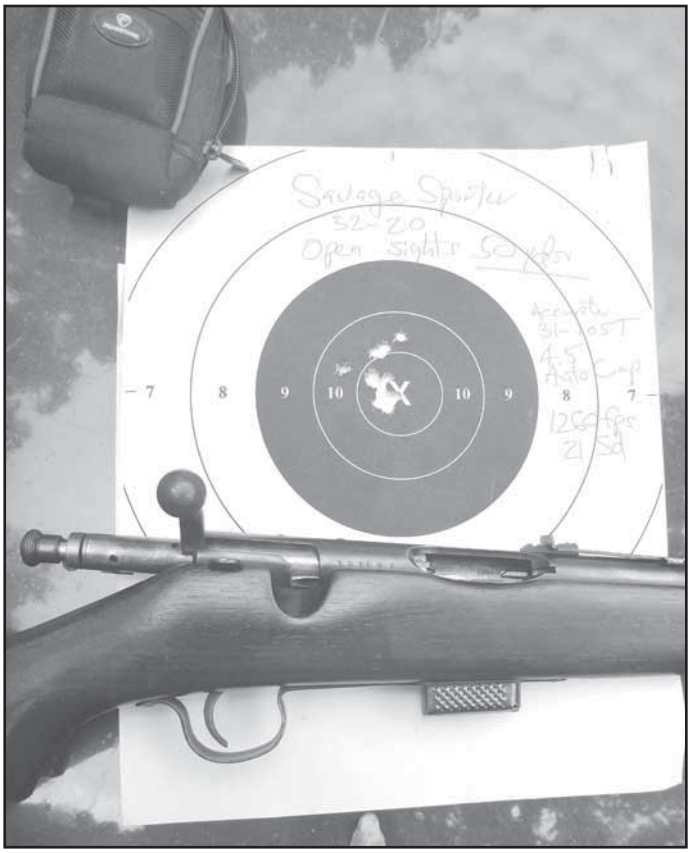


Remington "dogbone" ammo box

A good load for the Colt Police Positive with the Accurate 31-105T was 3.2 grs. of TiteGroup

.32-20 ammo from Remington and Winchester ranged from 714-780 fps. This is little different than the results expected when firing .32 S&W Long 98-grain lead factory ammo from a tight-gapped revolver of similar barrel length. The highest velocity I recorded among .32-20 factory loads fired in my 5" Colt was 898 fps from pre-WW2 100-grain lead Rem-UMC Kleanbore "Dog Bone" loads. Peters 100-grain softpoints gave 870 fps. WRA lead loads gave 854 fps.

Most .32-20 revolvers are either already or nearing 100 years old. Hand loads not appreciably exceeding 900 fps with 100 grain bullets and 850 fps with 115 grain bullets are safe maximums for the Colt Police Positive Special, Army Special and early S&W .32-20 Hand Ejectors. Heat treated S&W Hand Ejectors made after 1918 and smokeless-frame Colt Single Actions may cautiously approach 20,000 psi, approximating the .32 H&R Magnum, about 1000-1080 fps with 100 grain bullets from a 5" barrel.



The Savage "Sporter" shot this 50 yard group with factory open sights loaded with the Accurate 31-105T over 4.5 grs. of Auto Comp

If your satisfaction requires that cylinder flash singe the hair off of your hands, and muzzle flash bring spots before your eyes, then the Ruger Buckeye Special .32 H&R/.32-20 Convertible, the .30 Carbine and .327 Rugers are "your huckleberry." Please don't overload and shake apart the older classic .32-20s!

Rifle velocity of standard pressure .32-20 loads: I chronographed the same seven samples of factory .32-20 loads in a Savage bolt action "Sporter" from the 1920s, having a 25 inch barrel. As in the revolvers, the highest velocity was observed firing 100-grain lead pre-WW2 Remington-UMC ammo from Kleenbore "Dog Bone" logo box, about 1300 fps. This represents a sensible maximum when loading for black powder action rifles such as the Winchester 1873 or Colt Lightning, using suitable modern pistol powders such as Unique and AutoComp, or in rifles only using 4227 and 4198. A full case, lightly compressed of 4198 powder, about 11-12 grains, provides good bullet base support in the same manner that black powder does. This permits bullets without a crimp groove, to be used in tubular magazine rifles without compression of the magazine spring pushing the bullet deeper into the case.

(L-r) Winchester 32-20 bullet from WRA factory ammo, Accurate 31-105T

WW2-era Peters 100-grain soft-point ammo gave 1150 fps from the Savage. Modern 100-grain lead ammo from Remington and Winchester ran 1170-1180 fps in the Savage bolt rifle. The pooled velocity average for all seven batches of .32-20 factory ammo fired from its 25 inch barrel was 1207 f.p.s. This represents a useful benchmark as a loading level for older black-powder era rifles using 3.0-3.4 grains of Bullseye, TiteGroup, Red Dot or 700-X or alternately 3.5-4.0 grains of 231, WST or Green Dot.

The .32-20 is mild and effective as a small game gun. While it is true that the velocities obtained are modest, it has proven effective on small game and wild turkey for over a century. Guns chambered for it have been handed down in families over generations of continuous field use.

My Savage "Sporter" bolt rifle from the 1920s, firing with simple open sights is thoroughly utilitarian. I have found 2-1/2 to 3" five-shot groups at 100 yards the norm. "Entirely Agricultural" as my esteemed friend Sam Hotton would say! My Colt Police Positive .32-20 is just as accurate as my Colt .38 Special of the same era, but has milder recoil and is the lightest .32-20 revolver I have found having field

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Change Your Address?

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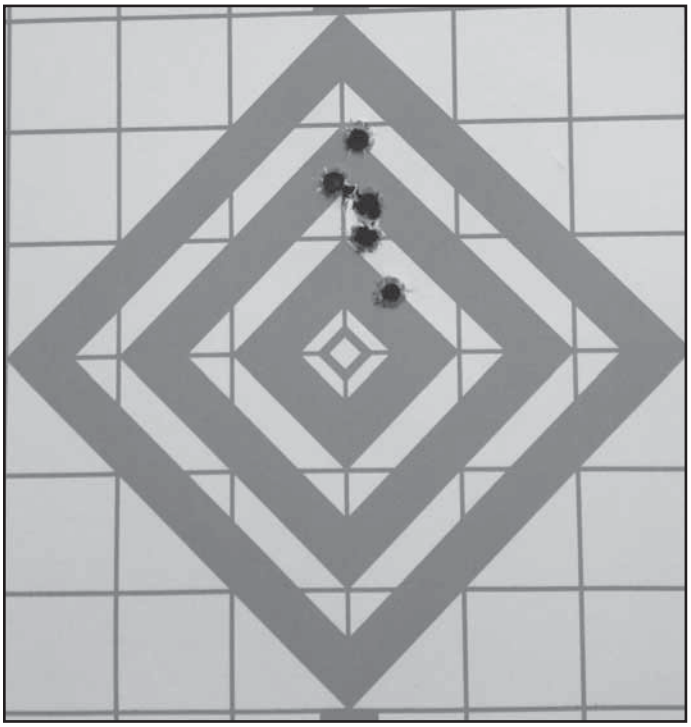
4206 S Elm Ave
Santa Fe, Texas 77517
281-935-7610
chefreiss@gmail.com

Table 1 – Factory .32-20 Ammunition in Rifle and Revolver

Ammunition Description	Colt Police Positive 5”	Savage Sporter 25”
Rem-UMC 100-grain lead Kleanbore “Dog Bone” box 1930s	898, 44 Sd, 116 ES	1302, 15 Sd, 38 ES
Peters 100-grain soft-point Kings Mills, Ohio 1940s	870, 28 Sd, 71 ES	1150, 44 Sd, 137 ES
WRA 100-grain lead Red & yellow box 1950s	854, 33 Sd, 87 ES	1263, 18 Sd, 53 ES
W-W 100-grain lead Rounded primer, yellow box, 1970s	800, 11 Sd, 31 ES	1241, 9 Sd, 22 ES
W-W 100-grain lead Flat primer, white box, 1990s	778, 27 Sd, 69 ES	1172, 18 Sd, 65 ES
R-P 100-grain lead Bridgeport, CT 1970s	780, 24 Sd, 67 ES	1181, 17 Sd, 52 ES
R-P 100-grain lead Lonoke, AR current production	716, 21 Sd, 55 ES	1140, 12 Sd, 35 ES
Column Mean by Gun	5” Revolver	25” Rifle
Average Velocity of Factory Loads	*814 fps.*	*1207 fps*

utility.

From 1882 through the 1930s, the .32-20 was THE “agricultural utility” gun of choice in rural America. NRA Contributing Editor William C. Davis, Jr. grew up in Tioga County, PA during the Great Depression. He used a 6-inch Colt Army Special in .32-20 to hunt small game. He told me that local hunters who could afford only one rifle often used .32-20s for both small game and deer during those hard times.



Ric Bowman’s Browning Model 53 also shot well with the Accurate 31-105T, as this 50 yard group attests

In rural northern PA before 1940, few farms had electricity. Everyday tasks took longer using only human or animal muscle power. People got up at dawn and went to bed shortly after sundown because lamp oil cost money. Leisure time was a few hours after church on Sunday afternoon. Hunters needed to be efficient. Boys developed their field craft to stalk deer within short range to be sure of clean kills. Scopes were too expensive and too fragile for field use. Open sights were most common. Lyman receiver sights were preferred among the most serious hunters. Farmers usually owned only one rifle as a work tool. Hunting and shooting were not hobbies, but life skills. Economy and utility were valued.

A flat-nosed, 100-115 grain lead bullet at subsonic velocity was non-destructive for edible small game. Simple ammunition reloaded economically using bullets cast over the kitchen stove, lubed with cup grease and assembled on the Ideal tong tool was the norm. The .32-20 proved effective against common farm predators. Revolver loads at 850-900 fps provide a flat enough trajectory to enable 100 yard hits on groundhogs, which in the 1930s were an important rural food source, given depleted deer populations. Using similar loads in rifles, velocities ran 1200-1300 fps, which enabled some expansion of home-cast, soft scrap lead bullets when large bones were struck. The .32-20 offered the best combination of economy and utility for its era. It

Table 2 – Group 1 Standard Pressure Loads for Rifle or Revolver

Bullet, Little Dandy#, Pdr. Chg.	Colt Police Positive 5"	Savage Sporter 25"
Remington .311" 100-grain JSP LD#4, 4.9 grains AutoComp	930 fps, 16 Sd, 45 ES	1230 fps, 26 Sd, 79 ES
Accurate 31-105T		
LD#4, 3.4 grains Bullseye	798 fps, 27 Sd, 60ES	1153 fps, 20 Sd, 72 ES
LD#3, 4.5 grains AutoComp	912 fps, 19 Sd, 53 ES	1260 fps, 21 Sd, 55 ES
LD#4, 4.9 grains AutoComp	943 fps, 32 Sd, 71 ES	1315 fps, 32 Sd, 118 ES
LD#10, 7.5 grains Alliant #2400	991 fps, 24 Sd, 65 ES	1348, 29 Sd, 69 ES
LD#13, 10.0 grains IMR4227	985 fps, 25 Sd, 61ES	1280 fps, 53 Sd, 176 ES
LD#17, 13 grains IMR4198	974 fps, 21 Sd, 94 ES	1326 fps, 46 Sd, 138 ES
Accurate 31-114D		
LD#3, 3.0 grains Bullseye	741 fps, 35 Sd, 92 ES	1041 fps, 26 SD, 78 ES
LD#4, 3.2 grains Bullseye	861 fps, 20 Sd, 54 ES	1173 fps, 18 Sd, 52 ES
LD#13, 10.0 grains IMR4227	962 fps, 27 Sd, 62 ES	1268 fps, 62Sd, 224ES
LD#15, 11.5 grains IMR4198	777 fps, 43 Sd, 101ES	1248 fps, 36 Sd, 114 ES

gave acceptable accuracy and performance, using the least expensive scrap alloy, plain-based bullets. It was pure simplicity, being very inexpensive to load, providing 1700-2000 rounds per pound of expensive and scarce powder in those hard times.

Bill told me that the maximum effective range of a .32-20 rifle was really about 75 yards. A more typical woods range was usually 25 to 50 yds. Frank Marshall echoed this opinion. A revolver was almost never fired at game beyond 20-25 yards. The traditional hunting ethic was very strong. Hunters would not risk a shot unless a clean kill was certain, or if the family were desperate for meat. No one would consider taking a shot which would likely result in a wounded animal, because such stupidity was a "thief of time" in tracking down to bring back a wounded animal when chores were waiting on the farm.

An excellent period article on the .32-20 by Maurice H. Decker appeared in Fur-Fish-Game, Vol. 26, No. 2, Aug 1917, pages 30-31. *[NOBODY today recommends that anybody use the .32-20 as a "bear gun", but I thought you might like to read what sporting magazines said about it 100 years ago!].*

"…the .32 Smith & Wesson revolver shell…will shoot very nicely in the .32-20 rifle and forms a very desirable load for dropping small game animals… and will kill small animals cleanly because of its round, pointed bullet…

…many farmers and stock men…use the .32-20 for butchering purposes, shooting hogs with shorts and cattle with the regular load. A better combination could hardly be chosen or secured with but one rifle, as nothing less powerful than the .32-20 will drop a heavy steer down to stay… while hogs require a light charge similar to the S. & W. for best results in bleeding.

"*The factories recommend .32-20 for game as small as squirrel, but I have found the flat pointed bullet tears up rabbit and even geese pretty thoroughly…when…I want as much meat left for the kettle or fry-pan as possible.*

"For woodchuck shooting…the .32-20 is an ideal caliber…it is a sure killer at short and medium ranges and at …200..yards the High Velocity shells…shoot much more accurately than one would… suppose…

"*Since the .32-20 cartridges have been put out with smokeless powder and lead bullets… I would earnestly recommend the smokeless loads for steady shooting. The metal patched bullet with the smokeless charge of regular power will also prove a valuable load for killing small game without excessive tearing when one happens to be out of the S. & W. shorts.*

"*The .32-20 High Velocity…is really a deadly little killer…and…has been used with success many times upon deer and even bear and although… I would always recommend a heavier caliber, the hunter or trapper need have no fear or hesitation of taking a shot at either should it cross his path at a reasonable range…*

"…When years of faithful service…among old timers…are taken into consideration, the Model 1873 Winchester leads in prominence, it being one of the most famous repeaters in existence. It is, however, a little too heavy and clumsy in handling…compared to the Model 1892… [The] '92 …is…the neatest proportioned repeater ever made…It is a smaller edition of the famous game-getting Model 1886…equipped with round barrel and shotgun butt with steel butt plate will make a very quick handling [rifle] with a very good balance….

"*…For extreme light weight and general service the hunter and trapper should examine and handle, if possible, the half-magazine .32-20 carbine which for its weight and size will furnish as much actual business shooting as any… of this class. For use in a country where medium sized and large game may be frequently seen I would advise a carbine with a special smokeless steel barrel and the almost exclusive use of the H. V. loads…With this light… weapon the trapper could drop anything crossed his path, from a Canada jay to a black bear in a steel trap or even at large and in case of a deer crossing his trail at short range he would stand a very good chance of eating venison at his next meal...*

"…I would not advise a shot at a deer with the .32-20 H. V. at over 70 yards unless the hunter is badly in need of meat, as…too many animals shot with low power guns… escape the hunter... of no benefit to anyone…except to furnish food for wolves...

My old buddy Dave Bryant in reviewing a draft of this article offered his comments on the .32-20:

"As a kid bitten by the gun bug in the 1950s, growing up in the rural west, I noticed that farming families were more likely to have a .32-20 leaning behind the kitchen door than did the cattle ranchers, who would have a .44-40 in the same spot. Cattle country was usually elk country, with black bear, coyote and mountain lion. Farming country, not so much, but with bobcats, red fox, hawks and weasel family members being the most common trouble makers, all easily dispatched with a 32-20. (If possible, stay upwind of skunks and civet cats when drawing a bead.)"

"I can still recall my first impression of working the action of a .32-20 Model 92, a delightful, velvety sensation of oiled smoothness, replete with a discreet snicks and clicks as it first unlocked and then returned to battery. The '92 was SO different than anything else I'd been able to use up to that point that it caused a sense of awe. Especially so compared to the average Model 94 Winchester carbines of the day with their loose-goosey, rattling workings. I've wished since that Winchester/Miroku would "modernize" these little guns by adopting the angle eject system Winchester eventually developed to allow mounting a scope on top of the Model 94. A compact, lightweight scope allows lever guns to become reliable 200 yard deer guns in their larger calibers and 150 yard varmint and small game takers in the .32-20 and 25-20, using modern bullets and loads."

And THAT fairly well sums up the .32-20! ◎

45-70 Long Range Shooting

By Jim Lewis
Part One

After receiving a couple of e-mails about an article I wrote concerning a 500 grain 45 caliber bullet that I designed, and obtained the mold from Mountain Molds, I decided to continue writing about long range competition with Black Powder Cartridge Rifles. I'm probably not the best shooter to be writing this article, however since most of the top shooters won't take the time to share their knowledge with us then I'll offer the limited amount of knowledge that I have on the subject.

In the bullet article I explained that I use smokeless powder in my long range BPCR loads because I don't like cleaning up after using black powder. The use of smokeless powder, or black powder substitutes, is OK with some clubs but other clubs that offer long range BPCR shooting will limit their events to black powder only.

If you are new to the sport and either have to use, or want to use, black powder there are a couple of things you will want to keep in mind as you pick and choose your equipment. First off, for long range BPCR, and using black powder, the 45-70 (45x2.1") is lacking in powder capacity. A 45-90 (45x2.4") will perform a lot better and the 45-100 (45x2.6) will perhaps do even better. And then there are the 45-110-2 7/8" and the 45-120-3 ¼".

The 535 grain Postell bullet from Lyman (#457132), or the various clones of this bullet from the custom mold manufacturers, is one of the most popular bullets for the long range BPCR game. This will be true whether you use black or smokeless powder. The alloy used for black powder bullets will be a soft alloy that is pure lead with a little tin added. The amount of tin added will usually range from 3% (1 part tin to 30 parts lead) to 5% (1 part tin to 20 parts lead). The bullet alloy used with smokeless powder loads will usually be the old lead clip-on wheel weight metal or something similar. (Just a quick warning about clip-on wheel weights. Lead wheel weights are a thing of the past. Now, If you get a bucket of wheel weights from a tire shop

the wheel weight material will be about ninety-nine percent zinc and steel with only a couple of lead weights in the bucket.) If you are using black powder then use a bullet lube intended for black powder. SPG lube is a popular black powder lube, it is readily available and it works as well (probably a lot better) than most home-made lubes.

One of the main functions of black powder bullet lube is to keep black powder fouling soft so that the fouling can be easily removed with wiping patches between shots. BPCR shooters will also use blow tubes to exhale moist breath down the bore of their rifles to help keep the fouling soft between shots. If black powder fouling is allowed to accumulate then accuracy will soon suffer and leading will start building up. I know of a new BPCR shooter that started out shooting black powder in his new Shiloh 1874 Sharps. He didn't bother to do any cleaning and after a couple hundred shots you couldn't see much of the rifling. Needless to say, his accuracy was terrible. The use of black powder requires constant cleaning, even during a match.

The use of smokeless powder allows a shooter to shoot more and clean less. I will usually shoot several hundred rounds through my cast bullet guns before I clean them, and this is true for my BPCR rifle when I'm using smokeless powder in it. When I'm using smokeless powder in my 45-70 I'll use a bullet lube that is intended for smokeless powder. For a new competitor, something like the old NRA lube formula that is half beeswax and half Alox is a good lube to start with. This article isn't so much about shooting black powder but rather some of the things I do when shooting smokeless powder in my 45-70.

The 45-70 smokeless powder loads that I use for long range competition are listed in the load books as loads being safe for use in the trap-door Springfield. However, I do use the top loads listed for the trap door. With 500 grain to 535 grain bullets, my velocities will be between 1100 fps to just over 1400 fps. With the 45-70, using black powder, 1400 fps is a few hundred fps faster than can be obtained with the 500 plus grain bullets. But, 1300 fps to 1400 fps is in the range of velocities possible with the larger 45 caliber cases when using black powder. With my smokeless powder loads I stay within the spirit of the game and the loads are easy on my rifle and somewhat easy on my shoulder.

After shooting my Mountain Molds bullet for a while I got to thinking that the .200" flat meplat on that bullet might cause accuracy problems at long range. Because of this I decided to try a new Lyman mold #457132 for their 45 caliber 535 grain Postell. Like I said, this is a very popular bullet for long range shooting with the 45 caliber BPCR's and this bullet has a somewhat streamlined nose profile. I also acquired new molds for the RCBS 45 caliber, 500 grain Silhouette bullet and the NEI 540 grain RN bullet. Bullets from all three of the new molds have been shooting very well at long range.

Before you go to agonizing over which bullet to choose, I've found that how well you make your bullets will probably have more influence on the accuracy of your loads than which bullet design you use. Some years back I was listening to a BPCR silhouette shooter telling his friends that he could use his reject bullets to shoot chickens at 200 meters, but by the time he got to the 500 meter rams he had to use the best bullets that he could make to have a good ram score. I sometimes get to use a private shooting range that goes out to 1200 yards and if I'm to have any kind of success hitting steel plates at 1200 yards then my bullets have to be of the very best quality that I can possible make.

When I inspect my fresh cast bullets any visible imperfection and the bullet is either re-melted or tossed in the practice bullet pile. When I start weighing the bullets I will only use bullets from a three grain to maybe four grain maximum weight spread, and each grain is broken down by tenths of a grain. When I start filling the ammo boxes I'll begin with the lightest bullets, say for instance 496.0 grains for the 500 grain RCBS bullet and I'll start filling the ammo box at the left front corner. As I move up through the weights of the bullets I'll be filling the ammo box from my left to right and towards the back of the box. By the time I get to the back-right corner the bullet weights might be up around 496.8 grains or so. When I start the next box of ammo, I'll start right where I left off with bullets weighing 496.8 grains and start off placing the loaded rounds in the left front corner. Again, as the weights of the bullets increases, I'll be loading the ammo box from left to right and towards the back. And so it goes until I've filled all the ammo boxes. I'll stick a note on the outside of the ammo boxes indicating the weight range of the bullets in the box. If I'm careful to shoot the ammo in the order in which I placed it in the ammo box, and keep the ammo boxes in weight sequence, then by doing this I never shoot a round in which the weight of the bullet varies more than one tenth of a grain from the weight of the bullets on either side of it.

One thing that I discovered by accident is how critical the alloy can be in regard to the accuracy of my BPCR bullets. This came about because I was trying to use up some odds and ends of lead, lead that was left over from other projects, and I can only blend thirty-five pounds of

alloy at one time. Fourteen of these big bullets will use up a pound of alloy so I thought this would be a good opportunity to use up a lot of my lead that was of unknown alloy. I tried to blend the alloys for the BHN value that I wanted and while I could get reasonably close on the hardness the bullet weights varied considerably. Anyway, I had cast a few hundred bullets and while I was weighing them I got to wondering just how much difference a few grains in bullet weight would cause at long range. I started separating out my very heaviest bullets and my very lightest bullets and further separated these two piles of bullets into one grain maximum weight variation in each pile. I ended up with something like eight grains weight difference between the two piles of bullets. I had enough bullets to load 25 of each weight and I decided to try them at 300 yards. Any closer and I might not see any difference in the point of impact and any farther and I might be battling wind.

I started out on a calm morning with two targets in place and shot a five shot group on each target. The heavy bullets were shot at one target and the light bullets at the other target. I left the two targets in place and every hour or so I would come back and shoot another five shots at each target. I was careful to shoot the heavy bullets at one target and the light bullets at the other target. By lunch I had two targets, each with a combined twenty five shot group in the target and the two targets showed something I had not considered. The accuracy of the light bullets was so poor that I was unable to determine if there was any difference in the point of impact between the two bullet weights.

A couple of weeks later I cast up some more bullets and tried the heavy verses light bullet test again only this time the targets were at 200 yards. The results were the same as the first test. The total 25 shot group with the heavy bullets was just under four inches. This was five, five shot groups, fired over the course of a single morning. The five groups with the light bullets went seven and a half inches. The total light bullet group was nearly twice the size of the heavy bullet group. The light bullets had a BHN of 14 while the heavy bullets were only 11 BHN.

In my article about the Mountain Molds bullet I talked a little about trying some relativity hard bullets to test my theory about undersized bases. I found that the hard bullets had poor accuracy. I now realize that the alloy might have been the cause for the poor accuracy and not so much the undersize bases. For over thirty years I have standardized on 13 to14 BHN for all my cast bullets fired at velocities less than 1500 fps, but now I'm using an alloy that has 11 BHN for my smokeless 45-70 loads. I'm not saying that every rifle will shoot more accurately with somewhat soft alloys but my rifle has shown a preference for softer alloys.

Going back to agonizing over which bullet to choose, keep in mind that the advertised ballistic coefficients for Lyman cast bullets are probably optimistic. Look on page 215 of the Lyman 4th edition Cast Bullet Hand Book and compare the ballistic coefficients for the Lyman #457132 535 grain Postell bullet and the Saeco 525 grain #745 bullet. Lyman lists a B.C. of .402 for their 535 grain bullet while the Saeco bullet has a B.C. of only .231. When you look at the pictures of the two bullets you will notice that the bullets are very similar to each other. A shooter will quickly question why such a large discrepancy in the B.C. of the two bullets. It's obvious that one of the ballistic coefficients is probably wrong.

By using my sight settings, which are measured in minutes of angle, and by actual shooting, I've been able to develop a bullet drop chart out to a thousand yards for the RCBS 500 grain bullet. I've then plugged this information, plus the muzzle velocity of my bullet, into Sierra's Infinity Ballistics Software Suite 7 program to get a fair idea of the actual B.C. of this bullet. It takes some doing, I had to keep going back to the custom bullets editor and plugging in different ballistic coefficients until I found a B.C. that gave a drop chart that best matched the chart that I obtained by actual shooting.

Using this method, I found that the RCBS 500 grain silhouette bullet has a B.C. somewhere between .24 and .25. To double check my results I looked up the B.C. for the Hornady .458 caliber 500 grain FMJ round nose bullet and found that the B.C. for this bullet is .295. So, if you figure in the drag caused by the grease grooves, then a B.C. of .25 for the RCBS bullet is probably very close. At the time that I'm writing this article I still haven't completely finished working out the ballistic coefficients for the Lyman Postell bullet or the NEI 540 round nose bullet, but it appears that both bullets will have ballistic coefficients of less than .28.

Once a shooter has developed accurate drop charts by actual shooting, then knowing the ballistic coefficient of the bullet will no longer have much value. However, knowing the actual B.C. will be necessary to develop accurate wind drift charts. I don't use a wind meter and a wind chart in BPCR competition, in fact it is illegal to use a wind meter in competition at some clubs. But using a wind meter and wind charts in practice helps a shooter to develop a 'feel' for the wind.

A long range shooter quickly learns that wind is never exactly 90 degrees to the target and wind velocity is never steady. I've also learned that if I feel the wind coming in over my left shoulder that my bullet will not only land to the right of my target, that it will also be somewhat high. And, if I feel the wind on my right cheek, then I know the bullet will not only land to the left of the target but will also land somewhat low. This is a general rule and not an absolute. Wind swirls around a lot, not only side to side but also up and down. Trying to shoot across a canyon on a windy day is enough to cause a shooter to take up golf. For the times when I can't use a wind meter I've made a wind indicator out of a turkey feather that has been some help in determining wind direction and velocity. At least at my end of the range.

Down range at the target, well who knows?

Using bullets from the four molds that I have for BPCR, the 500 grain bullet from Mountain Molds, the Lyman 535 grain Postell, the 500 grain RCBS 45-500-SIL bullet and the NEI 540 grain bullet, I have not been able to prove that any one of the four bullets is any more accurate than the other three. All four of the bullets will shoot very well on nice days. But, when the wind is gusting, and the sun is in and out of the clouds, then I have a hard time hitting long range targets no matter which bullet I'm using. On the bad days a shooter will get to thinking that a better bullet, one with a better ballistic coefficient, will improve his or her scores. And I agree, if a shooter could find a bullet with a significantly higher B.C. then the effects of wind would be reduced. But I don't know where to find such a bullet. A paper patched bullet would offer the benefit of not having lube grooves but I haven't tried any so I have no firsthand experience with paper patched bullets. A lot of shooters have left posts on the internet claiming all sorts of long range accuracy improvements with paper patched bullets but I'm very skeptical of some of those claims. And, the Sierra ballistic program doesn't verify those claims. Anyway, the point I want to make is don't spend a lot of time agonizing over your bullet selection. Just pick whichever bullet looks good to you and go with it. Just learn to make excellent bullets.

Another thing a BPCR shooter wants to be aware of is the rifling twist rate in their barrel. The twist rate will determine the length of the bullet that can be fired accurately in that barrel. We all like the look of long, pointed, streamlined bullets but the slow rifling twist rates in most BPCR rifles will require a somewhat short, blunt bullet. If you are trying to shoot a heavier than normal, or a longer than normal bullet in your BPCR then use the Greenhill twist rate formula to see if the bullet 'fits'. If, according to the Greenhill formula, your bullets are overly long then you will need to do a lot of long range testing to determine if the bullets are staying stabilized all the way out to the extreme distance targets. The long bullets might be accurate for the first few hundred yards but as the velocity falls off the long bullets might start yawing or wobbling. Group sizes at a hundred yards mean nothing for a rifle that is intended to be fired out to a thousand yards.

I've written out a lot of words concerning bullets without going into any detail concerning any individual bullet. That's because it seems that BPCR shooters are constantly arguing that such and such bullet is a lot better when compared to some other bullet. The best accuracy will come from the bullet that best fits your chamber and bore. It's easy enough to measure your chamber and bore, but I haven't seen any dimension specifications from any of the popular bullet mold manufactures. Which has caused some of us to try a custom mold, only to find that the custom mold didn't help our scores at all. I remember one match where I was shooting next to a young man who was using a Marlin 45-70 and 405 grain flat-nose lever-gun bullets. His overall score ended up being in the top 25% of the shooters that day. Long Range BPCR shooting is a skill game, not an equipment race.

At this point I'm past 2300 words and this was intended to be an article, not a book. So, I think I'll stop here and get a cup of coffee. I'll save my loading techniques for part two. ◎

Shooting A Wimp

By Bill Duncan
Coffman Cove, Alaska

In this case, the Wimp is a 300 WhispR Improved, a 30 caliber small capacity cartridge based upon a necked down 357 Maximum case. This cartridge was developed by Mike Bellm and David White as a rimmed case for TC break action barrels to provide performance along the lines of the 300 Whisper. In the interest of brevity, I use the term "Wimp" when referring to this cartridge.

Why a Wimp?

For several years, I shot cast bullets in a TC Encore with a heavy 26 inch barrel chambered for 308 Winchester. Using 8 to 9 grains of Unique gave me good results, but I wanted to move on to a more efficient breech seat cartridge. I was tempted by the 32 Miller Short and the 32-20, but opted for the Wimp. The reason I went this route centered mostly on the service offered by David White; he specializes in TC's and will stub a barrel of your choice into your existing barrel lug, allowing me to use my old 308 barrel/lug which has a tight barrel/frame fit. David White's

website describes this stubbing process. Another reason for this option was that being based on the 357 Max case, I could use my 38 Special gear and eliminate the need to change shell holders in the press and priming tool. And, I have to admit, the 300 WhispR Improved was different and would pose a challenge.

The Rifle

I have been shooting TC break actions for a lot of years and consider them the ideal rifle for the tinkerer/home grown gunsmith. To me, their appeal is versatility, simplicity of mechanism, accessible breech, and ability to produce acceptable accuracy if tuned and maintained. So, out came the hacksaw and the 308 barrel was hacked off about 6 inches ahead of the breech and sent off to Oklahoma. The result was a stainless Green Mountain barrel with a 1 in 10 twist, 1.2 inches in diameter, 18 inches long which had been stubbed into 3 inches of my old barrel-hinge/lug. The 18 inch length was chosen because I intended to use a fast burning powder and long, large diameter/heavy barrels are ungainly with break action rifles. The barrel is topped with a Weaver T-24 scope which has had the 1/8 dot replaced with a duplex reticule.

The Case

Cases are formed from annealed 357 Maximum brass using dies made by CH Tool Company that have the designation “300 Whisper (Bellm).” The long neck of the formed case is trimmed to allow the case to be chambered and fire-formed using a stiff powder charge and a plain based bullet seated ahead of the case neck. Fire forming reduces the length of the case a few thousandths producing a gap between the front of the neck and the step down to the throat. With a bullet that can be seated ahead of the case this is not a problem.

The driving bands on Lee bullets limit the seating depth, resulting in the base of the bullet extending around 0.2 inch into the neck. Bullets must be sized to 0.310 inch or they shave a ring of lead when fired. This is not an ideal situation, but for reasons unknown, in this case it seems to work. After being fully fire-formed, the cases seal the chamber to the point that air is compressed when a charged case is inserted behind the seated bullet and the case must be held in place with the thumb until contacted by the breech face. At this point, I should mention that there is no extractor which allows the charged case to be seated by feel. Fired cases are extracted using a small brass device that engages the case rim via the extractor groove. Since cases are not sized and seal the chamber, shot to shot consistency is enhanced and fired cases have only a trace of soot on the neck.

After numerous cycles, some cases become hard to extract. When this happens, all cases are run through a modified sizing die. The factory dies are designed for jacketed bullets and reduce the neck excessively. To correct this condition, the neck area of the die was lapped so it no longer reduces that portion of the case. During this resizing, the shoulder is also set back to maintain proper headspace. Hard extraction is mostly due to the case being stretched after repeated cycles, so they also need to be trimmed to length. I number each new box of primers as they are opened and know the barrel has close to 5,000 shots through it. This means that my original 25 cases have been reloaded nearly 200 times. The primer pockets seem to be a tad loose, so it is probably time to form a new batch.

The Bullet

This section could be titled “Those Pesky Lee Molds.” My reasons for sticking with 30 caliber were the wide selection of bullet designs available, its popularity/success with the benchrest crowd, and my positive experience with the 308 barrel using 160 and 180 grain bullets cast in Lee molds. Initial trials with these bullets breech seated in the Wimp were disappointing. After slugging the throat and bore it was obvious that a bullet of larger diameter was needed. This situation was exacerbated by using 20 to 1 alloy, and the fact that the diameter of bullets cast in Lee molds tend to be on the small side. Bullets cast using Lyman #2 alloy showed no improvement. A 160 grain Lee mold was lapped to give a base of 0.312 inch and a nose running 0.303 inch. With these larger diameter bullets, groups at 50 yards shrank from 1 inch to less than ½ inch. A 180 grain Lee mold was lapped and the results were the same with groups mostly less than 1 inch at 100 yards.

Since my goal had always been a bullet in the 200 grain range, I purchased a Lee mold in that weight and lapped the front cavity. Unfortunately, I had been a little too aggressive and the base came out at around 0.314 inch and the gas check shank large enough to shave lead, making the application of the GC difficult. These oversized bullets had to be sized to 0.310 inch so they could be breech seated and not shave lead when fired. I was sure

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Your articles are needed and appreciated. You can submit articles on disk, by email, typewritten or hand written. Send articles to:

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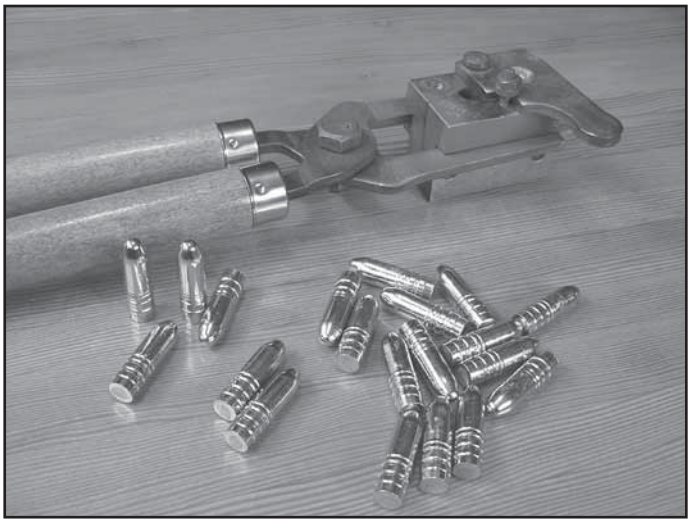

this less than ideal situation would not be successful and was prepared to lap the second cavity of the mold. The problem was, the sun was out, there was no wind; a day to go shooting, not spend the afternoon in the shop lapping molds.

The first group of 5 with these less than ideal bullets went into a 0.55 inch hole at 100 yards. For over a year, I have been shooting bullets from that mold and have been able to reduce the average group size from around 0.85 inch to 0.75 inch, with groups in the 0.50 inch range being common. The Lee catalog lists the ballistic coefficient for the 200 grain bullet to be 0.352. A brief test of 5 shots with the chronograph at 3 yards and then at 97 yards showed that the velocity dropped from an average of 1241 fps to 1102 fps, a loss of 139 fps (11%). When shooting at 200 yards in light wind, groups of under 2 inches are common.

If a $20 mold shoots less than 1 inch groups, it stands to reason that a $200 custom mold should shoot into a hole not much bigger than the diameter of the bullet. Well, we all know things are not that simple. A custom mold with dimensions that allowed it to be seated ahead of the case was my next purchase. This 2-cavity mold was cut with one cavity dropping a plain based bullet, the other having a shank for a gas check. Groups at 100 yards using bullets from this mold are mostly in the 1 inch range. I guess, at least for the time being, I am stuck with that “Pesky Lee Mold.”

All bullets are weighed and separated into 0.2 grain batches which are run through a Lee sizing die to install the gas check and reduce the driving bands from 0.314 to 0.311 inch. Hornady gas checks are annealed and opened up a bit to fit the oversized gas check shank. Next a light coating of thinned Lee Liquid Alox is applied (less than one drop per bullet) and when dry, the lubed bullets are sized a second time in a die that has been lapped to 0.310. It goes against convention to size a bullet more than a couple of thousandths. Maybe by sizing in stages, the integrity of the bullet is maintained. I eventually lapped the second cavity of the mold to produce a bullet with a 0.302 nose and 0.311 driving bands. Even though this bullet is reduced only 0.001 inch, accuracy is the same as the oversized bullet.

Bullet Casting

As mentioned above, the Lee mold I am currently using has the cavities lapped to produce bullets of the proper diameter using 20 to 1 alloy. When lapping a mold, I use Cerrosafe to check progress and have found the Cerrosafe dimensions to be around 0.003 inch larger than the desired bullet diameter.

I cast with a dipper, and find the Lee sprue plates difficult to use. The problem, for me, is the plate extension is in a forward position and collects lead when forming a large puddle. To correct this problem, the mold was fitted with a Lyman single cavity sprue plate which allows excess lead to spill over the edge and into the pot. The exterior and wear points of all my molds are coated with Lyman spray moly bullet lube, which prevents wear, and keeps molten lead from sticking on mold surfaces, especially the sprue plate. A very light coat of moly on freshly lapped cavities along with a light coat of smoke produces shiny bullets that drop easily from the mold.

Bullets are cast with the alloy at 800 degrees, the dipper mated to the sprue plate followed with a generous puddle. Sprues are cut immediately upon frosting using a sprue wrench (see “Sprue Plate Wrench” in FS#227). If the sprue is cut very slowly using downward pressure, the sprue nubs are minimal with no smearing. While on the subject of sprue plates, I prefer single cavity molds and find double cavity molds easier to use if one hole, usually the one to the rear, is blocked using aluminum high temperature duct tape that has been coated with moly lube.

As to alloy, I started by making 20-1 using commercial 5 pound lead ingots that a fisherman friend gave me. This alloy cast and shot well, and when feasible, bullets were recovered from rounds of wood used as backstops. As time went by I started having trouble with frosted/rounded driving bands. A lot of time was spent trying to correct this condition by intense fluxing, adding tin, applying various casting techniques along with higher and lower pot temperatures. Suspecting a case of “Tired Lead”, I purchased 50 pounds of commercial 20-1 and “voila” shiny well filled out bullets that cast easily and shot into small groups.

The Load

I follow match results in FS and knew that Accurate Arms #9 was a popular powder for breech seated bullets in the 200 grain range. Unfortunately, I was not able to get AA#9, so initial loads were made up using Hercules 2400 from a cardboard container. Using a 160 grain bullet from the modified Lee mold and 9 grains of 2400 (1340 fps), groups were less than 0.5 inch at 50 yards. Switching to the modified 180 grain mold and 9 grains of 2400 (1270

fps) produced similar results. At this point, I was able to get 2 pounds of AA#9. Nine grains of AA#9 produced an average velocity of 1290 fps and groups in the 0.25 inch range at 50 yards were not uncommon. Moving to bullets from the modified 200 grain mold, velocities with 9 grains of AA#9 averaged 1245 fps, with a velocity spread of less than 10 fps, and groups of around 0.75 inch at 100 yards.

During these initial trials, numerous combinations of fillers and/or wads were tested. It was determined that the rifle shot well with no filler or wad, and since that condition also simplifies loading while eliminating the chances of ringing a chamber, the no filler/wad load was adopted. Primers are CCI 400. I have kept my loads on the light side (1200 to 1300 fps) because I did not think it would be a good idea to over stress a bore-ride bullet when using a soft 20-1 alloy.

Experiments with bullet lube showed that, as most of you have probably found, less is better. In FS #237, I described my experience with lube purging fliers, so will not go into details here. Bullets now get a light coating of thinned Lee Liquid Alox and after one fouling shot, the barrel shoots consistently throughout a 25 shot session.

So, now that I had a consistent load it was time to concentrate on shooting technique and putting 5 bullets into a little hole. Well, that was the plan until I ran out of AA#9 and could not get any more. I was able to get some Hodgdon H110, so here we go again. Since H110 is slightly slower than AA#9, I started with my old standard of 9 grains and the H110 produced velocities averaging 1170 fps which is around 75 fps slower that the same charge of AA#9. Groups at 100 yards were again around 0.75 inch. During a chronograph session it was noted that when charges of less than 9 grains were used, the velocity spread became progressively larger, at 8 grains, the spread for 5 shots was 53 fps and 8.5 grains 46 fps. The standard 9 grains produced a velocity spread 12 fps and 10 grains gave a spread of only 8 fps. It appears that with charges of less than 9 grains, pressures are not sufficient and H110 does not burn efficiently in the 300 Wimp. This being the case, a load of 10.0 grains became my standard and using this load I shot my first (and only) 0.25 inch group at 100 yards.

As seems to be the case with my shooting career, when everything is going well, something changes. In this case, after 3 years of trying, a fellow I know in Oregon presented me with 3 pounds of AA#9 when he came up last summer. Back to plan A, or was that plan B, I've lost count. Is AA#9 better than H110? I can't say, both produce good accuracy and burn cleanly, but since AA#9 seems to be a little less pressure sensitive, I will use it if available. I must also admit that I am influenced by the popularity of AA#9 among the PBB Breech Seat crowd

Shooting System

Since most of my shooting tends to be centered around experimentation, I have concocted a bench set-up that approximates a machine rest. The new barrel was fitted with a 2 ¾ inch wide forearm and the factory stock replaced with a short slab-sided affair that fits snuggly in a cradle which has been affixed to a thick base of marine plywood (see photo). A Caldwell "Fire Control" rest completes this system which is mounted on a portable bench using 3/8 inch bolts. The goal was to make a rigid, free-recoil condition. During the initial sessions with this set-up, it was found that the crosshairs jiggled when I placed my arm on the bench to pinch the trigger. The situation was remedied by using diagonal braces to support the pipe legs. This set-up looks "funky" and takes a while to erect, but it is solid. To those bench shooters reading this, you have probably noted in the photo that the barrel is supported toward the rear of the forearm instead of the usual position near the front. I have found, as have others, that break action TC rifles seem to shoot better when supported near the hinge pin, but this is a condition that warrants further testing.

Bullets are breech seated using a plugged case that has an adjustable brass insert. A magic marker is used to

mark the nose of the bullet so they can be oriented. For the sake of consistency, cases are also oriented. As mentioned above, accuracy is best when no wad or filler is used. It is therefore necessary to point the barrel skyward to keep the powder positioned to the rear of the case. Keeping the barrel up, the stock is inserted into the cradle and the rifle lowered slowly into the front rest. The original handle on the Fire Control rest was too long for my setup, so I turned a short aluminum handle which allows the knob to be mashed into a bag filled with lead shot and rice, the result being a stable shooting platform.

In Conclusion

It was never my intention to still be shooting a gas checked bore ride bullet, but the Lee bullet does shoot well after the mold has been lapped. It may have something to do with the bullet design, which to me looks a lot like Lyman's tried and true 311299 and the bullet is being shot in a quality barrel. Is the 300 Wimp a match rifle? No, but it has met (probably exceeded) my expectations. My goal when I got the new barrel was to eventually have the throat recut to breech seat a full dimension, plain base, spire point bullet, but my experience with several other bullet designs has lead me to the conclusion that it would be hard to improve upon the performance of the Lee bullet. Therefore, I am going to shoot the Wimp as is and enjoy.

Finally, just for fun, I shot the Wimp a couple of times at 300 yards (actual distance was later measured to be at 288 yards). First thing I found was the scope ran out of vertical adjustment and groups were 11 to 14 inches low. Placing a target over the impact zone, the first shot barely missed the orange dot in the center of the 8 inch Shoot-N-C target (that put a grin on my face), the second shot was 3 1/2 inches to the left (grin fades a bit) and the next 3 shots were 1 ½ inches high but formed a 3 shot group of just under 1 inch (the grin got a lot bigger). So 4 of the 5 shots went into a group of less than 2 ½ inches in a light/variable wind. Weather conditions allowed me another session at 288 yards and I was able to hit beer cans filled with water, not every time, but often enough to make things interesting. Now I need to get on the CB Forum and find out how to wedge a scope for more elevation.

Finally #2. About 2 weeks after the above shooting session, the rain let up (there is a good reason they call the Tongass a rain forest) and I woke up to a calm overcast day. At the "range," I moved my shooting position back 12 yards so I would be shooting at 300 yards. Point of aim was established at around 15 inches high and groups settled down to less than 5 inches. After hitting a number of 4 inch by 6 inch steel plates, I set up 5 beer cans full of water and was able to hit them all with my last 5 shots. I later plotted the hits on the beer cans and they formed a group of just under 2 inches. That darn "Pesky Lee Mold!" ◎

Another Fix for Slippery Buttplates

Lloyd Roberts
Rockport, Maine

If "Stick Um" on your butt plate is a little too high tack and a gummy nuisance there is another choice. Contact cement a piece of leather to the butt plate. Put the glue on the smooth side of the leather with the rough or fuzzy flesh side of the leather facing to the rear to provide a nice non slip surface for whatever is worn on the shoulder, especially the also non slip surface of a shooting jacket or strap on recoil shoulder pad. The leather butt surface lasts for years and is easy on the eye and easy to apply. ◎

What You Are Missing Out On–
If you don't read the CBA Forum

Fillers Discussion

Larry Gibson's post over on "The Other Cast Bullet Forum" started the discussion, see:
http://castboolits.gunloads.com/showthread.php?109280-The-proper-use-of-fillers

The use of the filler can cause problems if not used correctly and when appropriate. If the powder is not correct for the bullet/cartridge combination then the filler is not going to make it "right". Many want to use a specific powder for a cartridge because the powder is "cheap" or because "they have a lot of it." There are lots of powders that are not only poor choices to use but that can be dangerous if used in an inappropriate bullet/cartridge combination. Do yourself a favor if you are wanting to use an inappropriate powder (usually "no data" available is an indication the powder might be inappropriate) and get an appropriate powder. You will save yourself a lot of frustration. The use of the dacron filler only makes an appropriate powder perform better. The dacron filler will not make a silk purse out of a sow's ear.

I don't use the dacron filler with the fast to medium burning "fast" pistol /shotgun type powders. I find one of these fast burning powders that is fast enough to ignite and burn efficiently at the velocity I want and avoid using a filler with them.

I almost always use the dacron filler in rifle cases with the slower "fast" burning powders (4227, 4759, 5744, 4198, etc. with lighter medium weight bullets for the cartridge; i.e. 140 - 165 gr. bullets in .30/.31 cals. of 30-30 through '06 case capacity), the medium burning powders (RL7, 3031, 4895, etc.) up through the slow burning powders (RL19, AA4350, H4831SC, RL22, 3100, etc.) that give around 80% or less loading density under medium to heavy weight

bullets for the cartridge; i.e. 170 - 220+ gr. bullets in .30/.31 cals. Those examples are for the .30/.31 cals. but the same guidance applies to other calibers. The dacron filler is used only between the powder and base of the bullet.

"Dacron" is polyester fill as commonly found in pillows and toys. It also comes in sheets called "batting". It can be obtained very reasonably at most any fabric store. The dacron batting comes in various thicknesses. I prefer that which is about 5/8" thick. My wife recently bought me 10 yards which will give many, many thousands of cast bullet loads. With this current batch of batting I cut it initially across the width into strips about 3/4" wide. I then "eyeball" cut 1/2" wide chunks which is close to 3/4 gr.

A smaller chunk is cut for 1/2 gr. and larger for a larger amount. I've cut some chunks that weight 1/2, 3/4, 1, 1 1/4 and 1 1/2 grs and have them in a "snack" baggie stuck on a poster board above my loading bench for quick reference when I need to cut new chunks. The batting will run thin and thick throughout the sheet so I again just "eyeball it" based on the thickness of the batting when cutting the chunks.

Pretty extensive tests have demonstrated that the weight of the filler does not have to be exact, only close. What is important is that there is enough so that it "fills" the space between powder and bullet. A little too much hurts nothing but too little poses problems. That's why I have the different size "chunks" so I can use the right size for the case capacity I am filling. For example; with most medium burning powders (3031, 4895, 4064) in an '06 to function an M1, a 3/4 gr. dacron filler is about right. With slower powders that give a higher loading density like 4831, a 1/2 gr. filler is about right.

I use a section of .22 cal cleaning rod in cartridges of .30 - .375 cal to push the Dacron chunk inside the case just so it is all in. The 6 to 10" section gives plenty to hold onto and sufficient "feel." Merely hold the chunk of dacron over the case mouth and shove it in with the rod. Sometimes it takes a couple three pokes to ensure all is inside the case mouth. I poke the chunks in until all the dacron is at the bottom of the neck or at least all in the case. It doesn't matter exactly where just so long as you don't tamp it down on the powder as a wad and leave a space between the base of the bullet and the dacron.

What you want to do is push it in to let the base of the bullet finish pushing it down and adding any compression against the powder. Thus I do not push it down on the powder but let the bullet do that when the bullet is seated. Using the right size chunk of dacron this method then provides a "filler" in the air space between the powder and base of the bullet.

A small length of coat hanger works for the .22-7mm cartridges and an unsharpened pencil works well for .45 cals. With the charged cases in a loading block I simply hold the chunk of dacron over the case mouth and push it in with the rod. It is quite easy and a lot of "precision" is not required, just get the dacron into the case and let the bullet finish pushing it down.

CBA Forum Comment by John Alexander

In the latest (July 2018) *Shooting Times*, former Speer ballistician Allan Jones discusses fillers for reduced loads. Although the method of filler he mostly speaks of is something he calls "puff balls" (a wad of Dacron or other fluff) ***pushed down on the powder*** as opposed to Larry's method of filler which involves "filling" the space between powder and bullet with the fluff under some compression. However, he reports lots of chamber ringing which Larry apparently avoids.

It would be nice to have a very clear description of what kind of filler might cause chamber ringing because one person's "filling the space" might be another's "wad of Dacron." At least shooters should be aware that using fillers in certain ways can lead to chamber ringing. Is avoiding air space between the filler and base of the bullet what avoids ringing chambers? I seem to remember that Ed Harris mentioned trouble with chamber ringing at some time.

I would also like to hear more evidence of the need for fillers based on shooting trials. I could never get any improvement out of them and haven't used them for the last 25 years, but if others get improvements in accuracy, maybe I should reconsider.

CBA Forum Comment By Ed Harris

I did LOTS of testing with fillers when I was at Ruger, because a great many .45-70 rifles were received in customer service with ringed chambers, many rifles with multiple rings which corresponded to the base location of different weight bullets.

Using dense powders like #2400 and pushing a "puff ball" down tight on the powder I could ring a .45-70 chamber predictably. It seldom occurred on the first shot, but would be obvious within a box or so of ammo. Pushing a "puff ball" down onto the powder is never a good idea because the wad becomes a projectile and the bullet base a bore obstruction. This condition was most pronounced in straight-walled cases, but could be reproduced also in bottlenecked cases like the .30-'06 if the bullet base was well up in the neck, as it normally would be with a 150-170 grain cast load seated out to contact the rifling.

The loose, fluffy method, using the minimum fiber needed to achieve ballistic uniformity, in which no visible "fluff" can be seen ejected from the muzzle is correct.

Normally I shun fillers and would prefer a powder which gives good ballistic uniformity without it. However, in loading full charge cast loads to function the Garand in .30-'06 loading a fluffy filler with powders such as 4895, 4064, RL15 or Varget reduces the velocity variation which would otherwise take place given normal variations in powder position. While slow-fire stages permit orienting the powder to the rear of the case, semi-auto operation forcibly positions the charge forward, and grouping is absolutely improved by use of filler in the Garand, which I consider a specialized case where fillers are desirable if the charge fills less than about 85% of the powder capacity.

CBA Forum Comment by R. Dupraz

I have personally seen the exact condition of chamber ringing that you describe in an 1874 Shiloh Sharps 45-70. This rifle had been owned by a deceased club member and was purchased at his estate sale by another club member. The new owner noticed some resistance when extracting a fired case and on closer inspection, could see rings in the chamber. So the rifle was sent back to Shiloh for a rebarrel. When the rifle was returned, included was a short section of the breach of the original barrel that had been milled in half revealing two clearly visible rings in the chamber right where the base of a bullet would have been. Now it was unknown of course what the first owner had used for loads or what had caused the rings, black or smokeless. But this club is exclusively black and lead bullets as far as any organized BPCR shooting goes.

I have never used any kind of filler and never will, preferring to experiment with different powders to find acceptable results.

Follow-up Comment on CBA Forum By Larry Gibson

I am offering this as information/explanation only, I am not trying to convince anyone to use a filler or to not use a filler.

We see here in this discussion, as usual with this topic, that the use of a "wad" in cast bullet loads has/is being lumped in with the meaning of what the word "filler" means. There is a distinct difference between the two. John Alexander and Ed Harris describe the difference in their posts. Keep in mind I do not recommend the use of a wad of any material. I only recommend the use of Dacron, kapok and the poly fillers (such as "original", Pufflon and GREX) be used as fillers given certain criteria. That is specified in my post on another forum which Ed has reposted here.

I do not always use a filler. I shoot many loads (more than with a filler actually) using appropriate powders that do not need a filler to ignite and burn efficiently and consistently. When to use a filler (I prefer Dacron) is dictated by the powder's burn rate, the load density, the weight of the bullet and the desired velocity level.

I do not use other fillers (coffee, COW, other cereals or other inert or organic materials) because my pressure testing of many have revealed inconsistent and sometimes dangerous levels of pressure are produced.

I do not use, nor recommend, the use of a wad of any material to hold the powder, especially the faster burning pistol and shotgun powders, back against the primer leaving an air/empty space between the wad and the base of the bullet. Doing thus, loading for lower velocity, with medium to heavy bullets for caliber is the primary cause of "ringing" in my estimation.

As an example using the 30-06 with cast bullets; if a 170 - 220 gr. cast bullet is being used with 4895 powder seeking the best accuracy, I recommend the use of a Dacron filler (3/4 - 1 gr.). That will cause the 4895 to ignite and burn consistently giving velocities in the 1700 to 1940 fps range where the best accuracy will be found with that combination.

If a 140 - 165 gr. cast bullet is being used and it is desired to push to 1800 - 2000 fps I would not recommend 4895 as it most often will not ignite and burn efficiently even

with the Dacron filler because the lower mass of the bullet will not allow the pressure to rise to its efficient burning level. A faster burning powders such as 2400, 4227, 4198, RL7 and perhaps even 3031 would be recommended. There are other powders also but you get the idea of the burning range. With those the load density is low (less than 80%) so the Dacron filler is advised.

If a 90 - 130 gr. cast bullet is being used with desired velocity in the 1200 - 1500 fps range +/- then I recommend a faster powders in the burning range of Unique to Blue Dot. No filler should be needed or used.

With 90 - 220 gr. cast bullets in the 600 to 1,000 fps range I recommend Bullseye or Red Dot. No filler is needed or should be used.

Let me add too that the style of shooting one does can also affect whether a filler is needed or not. If bench shooting where the rifle stays in position, the use of many powder/bullet combos do not need a filler if the loading procedure for each round is consistent, particularly if the loading procedure positions the powder consistently at the rear of the case. This also can be done when position shooting, as mentioned in another post, during slow fire events. However, as also previously mentioned, if used in repeating guns which load from the magazine, w/o such consistent positioning of the powder, the benefit of the filler becomes self apparent in the improved accuracy. When hunting or field shooting where the rifle may be shouldered from any carry position the filler keeps the powder consistently positioned for better accuracy also.

Thus we see the use of a filler is not applicable in all loading situations. It is applicable where beneficial.

Follow-up Comment On CBA Forum by John Alexander

I think the follow up discussion has put fillers and what some are calling fillers in perspective and will give fair warning for when filters may possibly be helpful and when some things commonly called filters may ruin your rifle.

Larry's definition of the dangerous type of fiber use as "wads" or Ed's and Allan Jones's term of "puffballs" is a good idea but shooters should be aware that this type of use is often called "filler" including in the title and body of Jones's article.

Thanks to all for making the distinction clear and possibly avoiding some ringed chambers.

Follow-up Comment on CBA Forum By Ed Harris

If you go through back issues of American Rifleman, you can find one of the more interesting lengthy discussions on chamber ringing. This did not involve use of case fillers at all, but occurred with .30-'06 Ball M2 ammunition. The subject lots of ammo were originally manufactured in the early 1950s, using WC852 Ball powder and were recalled by the DCM. The article shows sectioned M1 Garand barrels having the ring, and rub marks on ejected case necks where hard extraction occurred.

The 152-grain Ball M2 bullet is flat-based, and when loaded in the .30-'06 case positions the base well up into the neck. With the particular loading of WC852 powder there was considerable airspace in the case, and it was found that when fired in the M1 Garand, with the powder positioned to the rear of the case, as normally occurs during the slow-fire stages of the National Match Course ringing would sometimes occur.

In testing by the Army, when the Garand was fired in the normal manner, such that its vigorous bolt closure positioned the powder charge forward in the case, no chamber ringing occurred. The conditions of significant airspace existed only when the powder charge occupied less than about 85% of the available powder space and the charge was oriented in "base tap."

I personally had an M1 Garand in which the chamber was ringed using cal. .30 Ball M2 firing SL52 and 53 ammunition of the affected lots. Military armorers at Camp Perry inspected rifles with bore scopes and members of affiliated clubs who obtained DCM ammunition of one of the affected lots could have their rifles rebarreled at no charge. Mine was done in 1967.

Later when I was on the NRA staff Bob Sears, Ken Raynor, Joseph B. Roberts and I also experienced ringed chambers attempting to approximate a Ball M2 load using Hodgdon H335 and also with W748 powder. A nominal charge of 50 grains of either produced the desired velocity, but ballistic uniformity was not as desired and varied depending upon powder position. During the course of testing we also succeeded in ringing the chamber of a Winchester Model 70 target rifle being used to test the loads. While firing the offending military loads in the Garand produced no functional or safety problem, once a noticeable chamber ring occurred, hard bolt lift was evident

during primary extraction, and increased effort was required to extract the fired case.

NRA Contributing Editor William C. Davis, Jr. was the former director of the U.S. Army Small Caliber Laboratory when it used to be at the Frankford Arsenal. He recognized the condition immediately and related the story of WC852 Ball powder in the Garand. He explained that this condition had been thoroughly investigated in separate-loaded artillery and occurred when the origin of rifling advanced due to extended firing, such that free airspace occurred behind the projectile when it was seated against the leade and a normal charge fired behind it. Much work in this regard was done by the British Army Royal Ordnance Laboratory at Woolwich.

The solution was to pull tubes out of service when the leade advanced to a point measured with a bore erosion gage.

Davis opined that in our cast bullet loads that if a particular powder required use of a filler for ballistic uniformity, that it probably wasn't suited for those conditions of loading. The culprit was not the filler, but our attempts to use powders which did not tolerate free airspace in the case well. Davis suggested that tucking "loose fill" to take up the free air space helps mitigate the condition, but that in his opinion, pushing the filler down against the powder, leaving the free air space unabated in front of the charge, was a contributing factor in chamber ringing. But he was always sure to point out that if the powder is unsuitable for the loading conditions, that no filler is needed at all for chamber ringing to occur. It may not happen in one or a few shots, but if you experience any noticeable delayed ignition, noticeable hangfires, or sample velocity standard deviations which exceed about 10% of the sample mean, these should be heeded as a clue.

Follow-up Comment on CBA Forum by Larry Gibson

I went from using Dacron as a wad to using Dacron as a filler for a completely different reason that the possibility of "ringing." I also have thoroughly tested it over the years with numerous burning rates of powders in various cartridges with cast bullets. In chronographing many thousands of such loads over the last 42 years plus actually measuring pressures the last 9 years I have not found a single anomaly attributed to the proper use of a Dacron filler. Yes, with the improper selection of powder used with a filler, I can easily create dangerous pressures but anyone can, by design or by accident.

The point is a filler, Dacron or some other material, is not a panacea to be used all the time. A proper material used as a proper filler is beneficial if used appropriately with the correct cast bullet and powder burning rate. In reloading ammunition we make choices continually of which powder to use for which bullet and how much of that powder to be safe. Making the wrong choice and improper use can indeed be dangerous to firearm and the shooter. Make the right choices and using those choices correctly the reloaded ammunition is perfectly safe. It is exactly the same with the use of a filler. Make the correct choice and use the filler correctly and it is perfectly safe. Make the wrong choices (of powder and filler material) or use the filler incorrectly (as a wad) and it can be dangerous perhaps by just "ringing" the chamber.

The proper use of Dacron as a **"FILLER**" poses no problems and is most often beneficial to accuracy. Using kapok or the synthetic buffer materials as "fillers" also poses no problems when done correctly. I do not recommend the use of organic materials (COW, coffee, etc.) as they can easily raise pressures (actually measured) above what is safe for some firearms. ◎

Change Your Address?

To insure delivery of your Fouling Shot, send address changes to:

David Reiss
4206 S Elm Ave
Santa Fe, Texas 77517
281-935-7610
chefreiss@gmail.com

Attention CBA Members:

Your articles are needed and appreciated. You can submit articles on disk, by email, typewritten or hand written. Send articles to:

The Cast Bullet Association
6465 Parfet St.
Arvada, CO 80004-2736
grlatham@comcast.net

The Cast Bullet Association, Inc.

2018 National Tournament Entry

The Forty-Second National Tournament

Held at Pioneer Gun Club, Kansas City, MO - September 6TH through September 9TH

Fees: ***Complete tournament (100 & 200-yard events) plus a practice day on Friday is $100.***

- Either Saturday or Sunday only is $50
- Offhand Match on Friday is $10
- Quarter-Bore Match on Friday is $10.
- Little-Bore Match on Friday is $10

If competing with two firearms specify which one you are shooting for the Grand Championship at time of sign-in registration

Dinner: Saturday Night Dinner is $16 *per person*

Deadline for applications is August 30th, 2018
Applications postmarked by August 1st will be entered in an Early Bird drawing for a $100 cash prize

Applications received after August 30th subject to a $20 late fee. Preference is given to single firearm entrants and those registering for both days.

Mail Entry Form and Fees to: **Edward B. Camp, 8016 Wayne Ave., Kansas City, MO 64131**

Entry Information:

I will be shooting the ***Two-Day*** Tournament: Yes: ☐ No: ☐ Fee: $ _____

I will be registering Two firearms in the Tournament: Yes: ☐ No: ☐ Fee: $ _____

I will be shooting the Quarter-Bore Match: Yes: ☐ No: ☐ Fee: $ _____

I will be shooting the Little-Bore Match: Yes: ☐ No: ☐ Fee: $ _____

I will be shooting the Offhand Match: Yes: ☐ No: ☐ Fee: $ _____

I will require Dinner Reservations for Saturday for ____ persons at $16 each: Fee: $ _____

I am paying a late Fee of $20 (added to total fees): Yes: ☐ No: ☐ Fee: $ _____

Make check or money order payable to:
The Cast Bullet Association, Inc.

Total fees included $ _____

Match is limited to 56 shooters. Bench rotation on Sun. Note: No change of class after Aug. 30th without OK of Match Director

Personal Information (required): ***PLEASE PRINT CLEARLY***

I will be shooting in the _____Class. Caliber: _____ Left-Hand Shooter ☐

I understand that the improper use of firearms entails risk of bodily injury or property damage, and that neither the Cast Bullet Association, Inc. nor the Pioneer Gun Club, MO. will be able to exercise complete control at all times of all entrants or attendees at the event described above, nor will they be able to ensure the complete safety of equipment or ammunition. I therefore relieve the Cast Bullet Association, Inc. and the Pioneer Gun Club, MO. of any and all responsibility for injuries or damages which I, or any member of my party, may sustain as a result of my participation and/or presence at the National Tournament.

Name (print)_____ ***Signature***_____

Street Address_____

City and State_____ Zip_____

Telephone_____Email_____

Grand National Championship Trophy

The Grand National Championship Trophy will be awarded for the highest standings based on 120 record shots fired for group and score, with 60 shots at 100 yards and 60 shots at 200 yards. Points will not be awarded in the Quarter-Bore, Little-Bore or Off-Hand Matches. In order to be eligible, each rifle or pistol class must have a minimum of 10% of the total number of entrants.

2018 CBA Military Rifle Regional Tournament Entry Form

Please accept my application to shoot in the CBA Military Rifle East Regional, to be held on

Thursday, September 6th, 2018 at the Pioneer Gun Club – Kansas City, MO

Course of Fire (9:00 am Start Time, shooters meeting 8:45 sharp)

Thur, Sept 06 --- **100 Yd Score** --- Two 10 Shot Strings for Score (20 Record Shots Total)
--- **100 Yd Group** --- Two 10 Shot Strings for Group (20 Record Shots Total)
--- **200 Yd Score** --- Four 10 Shot Strings for Score (40 Record Shots Total)
--- **200 Yd Group** --- Four 10 Shot Strings for Group (40 Record Shots Total
Total of 80 Score Record Shots for the Match
--- **100 Yd Offhand** --------- Optional Two 10 Shot Strings (20 Record Shots Total)

Offhand is optional, and not included in Aggregates.

Targets : 100 Yds MR-31 and 200 Yds MR-52 (Offhand Target --- TQ-4)
Entry Fee --- $25 (Includes the $15 range fee charge by Pioneer Gun Club)

Please just bring this Form and the Entry Fee to the Range on Thursday morning, but if possible, please notify via email that you plan to attend mkastning@thermobond.com so we can plan targets supplies.
Payment can be cash, or check payable to: The Cast Bullet Association.
Camping avail at Range (Electricity & Water)

I will be shooting in Class: Issue ____ Modified Iron ____ Modified Scope ____ Big Bore____

Name (print) _____

Street Address _____

City and State _____ Zip _____

Telephone _____ Email _____

I understand that the improper use of firearms entails risk of bodily injury or property damage, and that neither the Cast Bullet Association, Inc. nor the Pioneer Gun Club will be able to exercise complete control at all time of entrants or attendees at the event described above, nor will they be able to ensure the complete safety of equipment or ammunition. I therefore relieve the Cast Bullet Association, Inc. and the Pioneer Gun Club from any and all responsibility for injuries or damages which I, or any member of my party, may sustain as a result of my participation and/or presence at this Regional Tournament.

Signature: _____

The Cast Bullet Association, Inc.

2018 Bench Rest Traditional & Military Registered Match Schedule

Schedule Updates Can Be Viewed And Printed From CBA's Website
www.castbulletassoc.org/matchschedule.shtml

Be sure to Always Check with the Match Director Before Travelling to the Match

CALIFORNIA

MODESTO RIFLE CLUB – MODESTO, CA
Paul Ott (209) 239-3041 Ott52@aol.com
308 N. Sheridan Ave., Manteca, CA 95336-4019 (209) 743-9734
100/200-yard score 2-17, 4-21, 6-16, 7-21, 8- 18, 10-20, 12-8
These matches are also open to CBA Military Classes

ILLINOIS

WIND HILL RANGE – ALEDO, IL
Stan Livingston (309) 371-9709 stan2350n@yahoo.com
P.O. Box 412, Oquawka, IL 61469
100/200-yd score and group
Military 1-20, 2-17, 3-17, 4-28
Traditional: 5-12, 6-23, 7-21, 8-18, 10-13

IOWA

HAWKEYE RIFLE & PISTOL CLUB – SIOUX CITY, IA
Mike Kastning
PO Box 744, Elk Point, SD 57028-0744 mrkastning@gmail.com
Military Match 100/200-yd score: 4-21, 5-19, 6-23, 7-21, 8-18
The above dates are also open to CBA Traditional Classes.

KANSAS

PIONEER CLUB – KANSAS CITY/BATES CITY-KS
Richard Brinkman (816) 200-9662
1205 Baltimore Ave., Pleasant Hill, MO 64080 rhbrink@hotmail.com
100/200-yd score & group: 4-18, 5-16, 6-20, 7-18, 8-15, 9-19, 10-17
Bench Rest National Tournament 9-8/9

MINNESOTA

BALD EAGLE SPORTSMAN'S ASSN. – HUGO, MN
John Kaufenberg (651) 429-7837 jetstar@comcast.net
3816 Riviera Circle East, White Bear Lake, MN 55110
100-yd score & group: 5-17, 7-19, 9-20
The above dates are also open to CBA Military Classes.

MINNETONKA GAME & FISH CLUB – NOWTHEN, MN
Jim Scearcy (612) 384-8589 jscearcy@gmail.com
15130 Crestview Lane, Minnetonka, MN 55345
200-yd score & group 8-22
Region 5 Tournament 7-28/29
The above dates are also open to CBA Military Classes.

OAKDALE GUN CLUB – LAKE ELMO, MN
Tom Acheson achesontom@hotmail.com
10386 10th St., Lake Elmo, MN 55042
100-yd score & group: 4-9, 6-4, 8-13
The above dates are also open to CBA Military Classes.

MISSOURI

PIONEER GUN CLUB – Kansas City, MO
BENCH REST Richard Brinkman (816) 200-9662
1205 Baltimore Ave., Pleasant Hill, MO 64080 rhbrink@hotmail.com
100/200-yd score & group: 3-21, 4-18, 5-16, 6-20, 7-18, 8-15, 9-19, 10-17
The above dates are also open to CBA Military Classes.
Bench Rest National Tournament 9-8/9
Military Regional Tournament 9-6
Info to be provided @ later date

NORTH CAROLINA

CHARLOTTE RIFLE & PISTOL CLUB, INC. – CHARLOTTE, NC
H.L Yarborough (803) 329-1618 hly@comporium.net
824 McNair Street, Rock Hill, SC 29730
100-yd score & group: 2-3, 2-7, 3-3, 3-7, 4-4, 4-7,
May 4&5-Regional, 6-2, 6-6, 7-4, 7-7, 8-1, 8-4
Bill Higgins
Military 200 and 300-yard score : 2-13, 3-13, 4-10, **Regional 5-3**, 6-12, 7-10**,** 8-14, 9-11, 10-9, 11-13, 12-11

OREGON

EMERALD EMPIRE GUN CLUB – SPRINGFIELD, OR
BENCH REST Rick Parra (541) 521-4823
P. O. Box 929, Springfield, OR 97477 rickparra@comcast.net
Mixed 100/200-yd score & groups:
The above dates are also open to CBA Military Classes.
2-10, 3-10, 4-14, 5-12, 6-9, 7-14, 8-11/12, 10-13, 11-10, 12-8

ROSEBURG ROD and GUN CLUB
875 Old Del Rio Road, Roseburg, OR 97471
Mel Harris 541-637-8444 sundownlog@live.com
Group and score –4-28, 5-25, 6-30, 7-28, 11-24, 12-29
These matches are also open to CBA Military Classes

PENNSYLVANIA

ATGLEN SPORTSMEN'S CLUB, INC. – ATGLEN, PA
Kurt Menkes (610) 444-0340 kamenk@yahoo.com
693 E. Baltimore Pike, Kennett Square, PA 19348
100/200-yd score: 1-27, 2-24, 3-24, 4-28, 5-26, 6-23, 728, 8-25, 9-22
10-27, 11-24, 12-22

TAMAQUA RIFLE & PISTOL CLUB – TAMAQUA, PA
David Martin (570) 366-2220 dfmartin61@comcast.net
110 Municipal Rd., Ringgold, PA 17961
100-yd score & group: 5-6, 6-3, 7-1, 8-5, 9-2, 10-7, 11-4
The above dates are also open to CBA Military Classes.

SOUTH DAKOTA

DAKOTA BENCHREST SHOOTERS, INC. – SIOUX FALLS, SD
John Carlson johntcrl@hotmail.com
Military Matches 100/200-yd score: 3-3 Froz. Chosin, 4-7, 5-12, 6-2, 7-14, 8-11, 9-22
Military match 100/200-yd groups 10-6

VIRGINIA

FAIRFAX ROD & GUN CLUB, INC. – MANASSAS, VA
Mark Mazzocco 703-989-0365 mmazzocco@pobox.com
5526 Ventor Lane, Springfield, VA 22151
100/200 yard score: 3-18, 4-15, 5-13, 6-24, 7-22, 8-19, 9-16, 10-21
The above dates are also open to CBA Military Classes.

WASHINGTON

CLARK RIFLES, INC. – VANCOUVER, WA
Traditional Bench Rest
Lee Alexander (503) 358-0018
13417 NE 72nd St., Vancouver, WA 98682
100/200-yd score: 3rd Saturday, Jan. through Aug.
TO BE ANNOUNCED
Military Bench Rest
Lee Alexander (503) 358-0018
13417 NE 72nd St., Vancouver, WA 98682
100/200-yd score or 300-yard score and group
1-3, 2-7, 3-7, 4-4, 5-3, 6-6, 7-11, 8-1

KENMORE SHOOTING RANGE – BOTHELL, WA
Roger Ulrich (425) 788-4715 quiltedgun@msn.com
18828 181st Place NE, Woodinville, WA 98072
100/200-yd score: 3-24. 4-28, 5-26, 6-23, 7-28,8-25

PAUL BUNYAN RIFLE & SPORTSMAN'S CLUB – PUYALLUP, WA
Mitch Migliaccio (253) 841-1218 Evenings
15908 80th Ave E, Puyallup, WA 98375 yellowing@comcast.net
Military Matches 100/200yd.score 4-14, 7-14, 10-13, 11-10
100/200-yd groups 5-12, 8-11
Military National Tournament 6-9/10

SPOKANE RIFLE CLUB – SPOKANE, WA
Don Barron (509) 993-3916 dbarron4570@gmail.com
18710 W. Old Station Rd., Worley, ID 83876
Traditional 100-yard score and group and
Military 100-yard score and group: 4-7, 5-12, 6-9, 7-14, 8-18

WEST VIRGINIA

IZAAK WALTON LEAGUE of AMERICA – LEETOWN, WV
Scott Lowther (304) 839-8703 scott@progressive-printing.com
42 Cool Glen Circle, Harpers Ferry, WV 25425
3-1, 4-5, 5-3, 6-7, 7-5 Tweed Prod., 8-2, 9-13, 10-4, 11-1

WISCONSIN

BLUE HILLS SPORTSMENS CLUB-Rice Lake, WI
Jack Harrison: 715-642-3340
1604 23 241/2 St. Rice Lake, WI 54868 www.rlrodandgun.org;
singleshots@charter.net
Traditional 100-yard score and group : 5-5, 6-9, 7-7, 8-18
The above dates are also open to CBA Military Classes.

VAN DYNE SPORTSMENS CLUB-Van Dyne, WI
Martin Stenbeck: 920-688-2957 msback@charter.net
www.vdsc.org/Map.htm
Military 100/200yds.score; 4-28, 6-23, 8-18

Change Your Address?

To insure delivery of your Fouling Shot,
send address changes to:
David Reiss
4206 S Elm Ave
Santa Fe, Texas 77517
281-935-7610
chefreiss@gmail.com

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ROSEBURG ROD & GUN CLUB --- ROSEBURG, OR

Match Director: Mel Harris — **TECH DATA & SCORES** — **April 28, 2018**

Temperature: **Skies:** **Winds:** **Range Faces: West**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	100 Yard 5 Shot Grp. Agg.	100 Yard 10 Shot Grp. Agg.	100 Yard Score Agg.	Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Pri-mer / No.	Muzz Vel. / Est. Chro.
Edwards, Virgil Sandy, OR	HVY .	0.626	0.964	200 2x	30 BR Short	Remington 700	Hart 23.5 -- 10	None McMillan	Leupold 36	13 Lb. 4 Oz.	Accurate 310230E	215 GsChk	L N N	Lino-type	301 310	Orange 44	N 135 27.2	Rem 7 ½	1950 Est.
Allen, Chuck Roseburg, OR	HVY .	0.432	0.790	199 5x	30 Harris	Nesika J	Hart 25 -- 11	None Borden	10 x 50 Sightron	13 Lb. 1 Oz.	Accurate 310230E	215 GsChk	BP N N	Lino-type	302 3095	Red Angel	N 135 26.5	Win SR	1950 Est.
Harris, Mel Roseburg, OR	HVY .	0.519	0.634	198 6x	30 Harris	Remington XP 100	Six Ent. 25.5 -- 12	None Six Ent.	Sightron 10 x 50	13 Lb. 0 Oz.	Eagan mx4ARD	210 GsChk	BP N Y	Lino-type	3015 310	Star .	3032 26.0	Fed 205m	2050 Chro.
Jenkins, Roy Oakland, OR	HVY .	0.604	0.875	197 2x	30 Harris	Stolle Teddy	Hart 26 -- 11	None Six Ent.	Nightforce 15 X 55	12 Lb. 11 Oz.	Eagan mx4ARD	212 GsChk	BP N N	Lino-type	3015 310	Star .	N 135 26.2	Fed 205m	1940 Est.
Miller, Jesse Springfield, OR	HVY .	0.697	1.046	195 4x	30 BR	Stolle Panda	Shilen 26 -- 12	None McMillan	Sightron 10 x 40	12 Lb. 0 Oz.	Eagan ARD	212 GsChk	L N N	Lino-type	301 312	Star Red	N 135 27.7	Rem 7 ½	1835 Est.
Uhl, Kent Oregon City, OR	HVY .	0.805	1.095	195 3x	30 BR Short	BAT S	Lilja 26 -- 11	None McMillan	Sightron 10 x 50	13 Lb. 1 Oz.	Accurate 310230	216 GsChk	BP N N	Lino-type	301 310	Star .	N 135 27.5	Win SR	1990 Chro.
Parra, Rick Springfield, OR	HVY .	0.728	1.682	193 5x	30 BR	AMT SS 480	Hart 24 -- 12	None Custom	Weaver 36	12 Lb. 0 Oz.	Eagan H-40	213 GsChk	L N Y	Lino-type	301 310	Blue Angel	N 133 25.9	Rem 7 ½	1860 Chro.
Zulyevic. Richard Harrisburg, OR	HVY .	1.993	3.421	156 0x	30 .	Remington 600	Hart 20 -- 12	None McMillan	Tasco 36	12 Lb. 0 Oz.	Applegate 314004	200 GsChk	BP Y N	Lino 1 Lead 1	301 313	Blue Angel	imr 4895 26.0	Win LR	1760 Est.

KENMORE SHOOTING RANGE --- BOTHELL, WA

Match Director: Roger Ulrich — **TECH DATA & SCORES** — **April 28, 2018**

Temperature: Lo 45 - Hi 52 **Skies:** **Winds: North @ 0 - 6 mph** **Range Faces: North**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	Scores: 100 Yd. Score / 200 Yd. Score	Grand Aggregate Score		Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Pri-mer / No.	Muzz Vel. / Est. Chro.
Stewart, John Seattle, WA	PBB BrchS	199 5 x 192 4 x	391 9 x		32 Miller Short	Miller DeHass	Krieger 26 -- 14	None Self	Leupold 36	14 Lb. 8 Oz.	P. Jones 32002	213 PBB	L N N	40 - 1 Pb - Sn	. 3225	Alox .	AA # 9 10.8	CCI SR	1300 Est.
Rhoten, Ronald Woodinville, WA	PBB BrchS	198 7 x 190 3 x	388 10 x		32 Miller Short	Miller CF	Ron Smith 28 - Gain	None Self	Nightforce 42	15 Lb. 4 Oz.	Schauf 322001	209 PBB	L N N	25 - 1 Pb - Sn	3165 3255	Javalina Schtzn	AA # 9 11.5	CCI BR 4	1400 Est.
Ulrich, Barbara Ann Woodinville, WA	PBB BrchS	196 3 x 176 0 x	372 3 x		32 Miller Short	Miller .	Mason 27 - Gain	None Mason	Leupold 45	16 Lb. 10 Oz.	P. Jones Spitzer	225 PBB	L N N	25 - 1 Pb - Sn	321 323	NRA Formula	WC 820 11.0	CCI SP	. .
Ulrich, Roger Woodinville, WA	PBB BrchS	198 6 x DNF	DNF		32x30-30 Short	Weber Unlmtd	Shilen 26 -- 14	None Self	Leupold 36	23 Lb. 6 Oz.	P. Jones Spitzer	215 PBB	L N N	25 - 1 Pb - Sn	319 322	Alox + BzWax	WC 820 11.6	Fed 210	1305 Chro.
Gardner, Alice Kent, WA	PRO .	188 4 x 143 0 x	331 4 x		308 Win	Savage 12BVSS	Savage 26 -- 10	None Savage	Weaver 36	11 Lb. 12 Oz.	RCBS 180 SP	183 GsChk	BP N N	Lino-type	302 311	Jakes White	N 135 26.5	Win LR	1850 Est.
Stripes, Mark Ellensburg, WA	HVY .	181 1 x 159 1 x	340 2 x		30 BR	Ruger # 1	Unknown 26 -- 12	None Ruger	Weaver 25	12 Lb. 13 Oz.	Lyman 311335	207 GsChk	BP N N	Lino type	303 309	Lyman Alox	Varget 27.8	Fed 205m	1870 Chro.
McCaughan, Mike Bothell, WA	HNT .	189 3 x 182 0 x	371 3 x		. .	. .	. .	. .	. .	. Lb. . Oz.	. .	. .	. .	. .	. .	. .	. .	. .	. .
Stripes, Thomas Ellensburg, WA	HNT .	129 0 x 69 0 x	198 0 x		308 Win	Savage Axis	Savage 22 -- 10	None Savage	Leupold 36	7 Lb. 4 Oz.	RCBS 180 SP	181 GsChk	BP N N	Lino type	300 309	Lyman Alox	Varget 28.0	Win LR	1650 Chro.

KENMORE SHOOTING RANGE --- BOTHELL, WA

Match Director: Roger Ulrich — **TECH DATA & SCORES** — **May 26, 2018**

Temperature: Lo 58 Hi 63 **Skies:** **Winds: Variable @ 0 - 6 mph** **Range Faces: North**

PERSONAL DATA					EQUIPMENT						BULLETS							LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	Scores: 100 Yd. Score / 200 Yd. Score	Grand Aggregate Score		Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Pri-mer / No.	Muzz Vel. / Est. Chro.
Rhoten, Ronald	PBB	198 4 x	386 5 x		32 Miller	Miller	Ron Smith	None	Nightforce	15 Lb.	Schauf	209	L	25 - 1	3165	Javalina	AA # 9	CCI	1400
Woodinville, WA	BrchS	188 1 x			Short	CF	28 - Gain	Self	42	4 Oz.	322001	PBB	N N	Pb - Sn	3255	Schtzn	11.5	BR 4	Est.
Conner, Steve	PBB	195 3 x	385 5 x		32 - 40	Remington	Unknown	None	Unertl	12 Lb.	Hoch	207	BP	25 - 1	301	Schutzen	imr 4227	CCI	1400
Tacoma, WA	BrchS	190 2 x			Win	Hepburn	27 -- 16	Unknown	24	13 Oz.	322200	PBB	N N	Pb - Sn	322	.	15.6	200	Est.
Ulrich, Barbara Ann	PBB	196 6 x	383 7 x		32 Miller	Miller	Mason	None	Leupold	16 Lb.	P. Jones	225	L	25 - 1	321	NRA	WC 820	CCI	.
Woodinville, WA	BrchS	187 1 x			Short	.	27 - Gain	Mason	45	10 Oz.	Spitzer	PBB	N N	Pb - Sn	323	Formula	11.0	SP	.
Stewart, John	PBB	189 7 x	379 9 x		32 Miller	Miller	Krieger	None	Leupold	14 Lb.	P. Jones	213	L	40 - 1	.	Alox	AA # 9	CCI	1300
Seattle, WA	BrchS	190 2 x			Short	DeHass	26 -- 14	Self	36	8 Oz.	32002	PBB	N N	Pb - Sn	3225	.	10.8	SR	Est.
Zimmerman, Bob	PBB	197 5 x	379 5 x		33 - 47	Stevens	Stv. Pope	None	Unertl	16 Lb.	Hoch	215	L	20 - 1	319	Alberta	imr 4227	Fed	1400
Auburn, WA	BrchS	182 0 x			Pope	Ballard	32 -- Gain	Unknown	20	. Oz.	Custom	PBB	N N	Pb - Sn	342	Schtzn	14.2	150	Est.
Hyett, Bud	PBB	163 0 x	236 0 x		25 - 20	CPA	Shilen	BrchS	Leupold	14 Lb.	D. Mos	119	BP	20 - 1	251	SPG,	AA 4100	Fed	1420
Granite Falls, WA	BrchS	73 0 x			Win	44 ½	28 -- 14	J. Hawkins	36	14 Oz.	25 119SP	PBB	N N	Pb - Sn	258	LLC	9.2	205m	Est.
Gardner, Alice	PRO	185 4 x	368 4 x		308	Savage	Savage	None	Weaver	11 Lb.	RCBS	183	BP	Lino-	302	Jakes	N 135	Win	1850
Kent, WA	.	183 0 x			Win	12BVSS	26 -- 10	Savage	36	12 Oz.	180 SP	GsChk	N N	type	311	White	26.5	LR	Est.
Shellenberger, Doug	PRO	175 0 x	319 0 x		308	Savage	Savage	None	Weaver	12 Lb.	Saeco	180	L	Lino 3	300	LBT	imr 3031	CCI	1624
Puyallup, WA	.	144 0 x			Win	12	26 -- 13	Savage	36	6 Oz.	315	GsChk	N N	Scrap 1	3085	Blue	24.0	LR	Chro.
Stripes, Mark	HVY	180 1 x	323 1 x		30	Ruger	Unknown	None	Weaver	12 Lb.	Lyman	207	BP	Lino	301	Lyman	Varget	Fed	1870
Ellensburg, WA	.	143 0 x			BR	# 1	26 -- 12	Ruger	25	13 Oz.	311335	GsChk	N N	type	309	Alox	27.8	205m	Chro.
McCaughan, Mike	HNT	177 2 x	305 3 x		7mm-08	Weatherby	Weatherby	None	Leupold	. Lb.	NOE	180	BP	BHN 17	277	Wht Lbl	.	.	.
Bothell, WA	.	128 1 x			Rem	Vanguard	23 -- 9.5	Weatherby	45	. Oz.	288-173	GasChk	N N	.	285	2500+	14.0	.	.

ROSEBURG ROD & GUN CLUB --- ROSEBURG, OR

Match Director: Mel Harris — **TECH DATA & SCORES** — **May 26, 2018**

Temperature: **Skies:** **Winds: Gusty & Swirling @ 10 - 20 mph** **Range Faces: West**

PERSONAL DATA					EQUIPMENT						BULLETS							LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	200 Yard 5 Shot Grp. Agg.	200 Yard 10 Shot Grp. Agg.	200 Yard Score Agg.	Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Pri-mer / No.	Muzz Vel. / Est. Chro.
Elliot, Frank	PBB	3.001	3.315	68 0x	33 Elco	Sharps	Unknown	1 deg.	Lyman ST	14 Lb.	P. Jones	238	BP	22 - 1	332	Javalina	# 9C	Rem	1460
Medford, OR	BrchS				Max	1878	27 -- 15	CPA	20	8 Oz.	338X121	PBB	N N	Pb - Sn	340	Schtzn	13.4	7 ½	Chro.
Allen, Chuck	HVY	1.153	1.968	197 3x	30	Nesika	Hart	None	10 x 50	13 Lb.	Accurate	215	BP	Lino-	302	Red	N 135	Win	1950
Roseburg, OR	.				Harris	J	25 -- 11	Borden	Sightron	1 Oz.	310230E	GsChk	N N	type	3095	Angel	26.5	SR	Est.
Jenkins, Roy	HVY	1.723	2.277	194 1x	30	Stolle	Six Ent.	None	Nightforce	12 Lb.	Eagan	212	BP	Lino-	3015	Star	N 135	Fed	1940
Oakland, OR	.				Harris	Teddy	26 -- 11	Six Ent.	15 X 55	11 Oz.	mx4ARD	GsChk	N N	type	310	.	26.2	205m	Est.
Uhl, Kent	HVY	1.227	2.023	191 1x	30 BR	BAT	Lilja	None	Sightron	13 Lb.	Accurate	216	BP	Lino-	301	Star	N 135	Win	1990
Oregon City, OR	.				Short	S	26 -- 11	McMillan	10 x 50	1 Oz.	310230	GsChk	N N	type	310	.	27.5	SR	Chro.
Parra, Rick	HVY	1.896	3.167	176 0x	30	AMT	Hart	None	Weaver	12 Lb.	Eagan	213	L	Lino-	301	Blue	N 133	Rem	1860
Springfield, OR	.				BR	SS 480	24 -- 12	Custom	36	0 Oz.	H-40	GsChk	N Y	type	310	Angel	25.9	7 ½	Chro.
Miller, Jesse	HVY	3.324	3.236	150 0x	30	Stolle	Shilen	None	Sightron	12 Lb.	Eagan	212	L	Lino-	301	Star	N 135	Rem	1835
Springfield, OR	.				BR	Panda	26 -- 12	McMillan	10 x 40	0 Oz.	ARD	GsChk	N N	type	312	Red	27.7	7 ½	Est.
Zulyevic. Richard	HVY	5.305	6.452	71 0x	30	Remington	Hart	None	Tasco	12 Lb.	Applegate	200	BP	Lino 1	301	Blue	imr 4895	Win	1760
Harrisburg, OR	.				.	600	20 -- 12	McMillan	36	0 Oz.	314004	GsChk	Y N	Lead 1	313	Angel	26.0	LR	Est.
Harris, Mel	UnP	1.158	1.535	188 0x	30	Remington	Broughton	None	Sightron	24 Lb.	Eagan	212	BP	Lino-	302	Star	2230 S	Win	1890
Roseburg, OR	.				Harris	XP 100	21 -- 11.5	Harris	10 x 50	. Oz.	MX4ARD	GsChk	N N	type	309	.	25.2	SR	Chro.
MILITARY TECH DATA & SCORES																				
Leishman, Jeff	MMI	4.987	6.414	0.000	30 - 06	Rock Island	Springfield	None	Modified	. Lb.	Lyman	200	L	Lino	.	LBT	imr 4227	CCI	1650
Springfield, OR	.				Sprgfield	1903	.	.	Iron	. Oz.	311299	GsChk	N N	type	311	Blue	21.0	250	Est.

MODESTO RIFLE CLUB --- MODESTO, CA

Match Director: Paul Ott — **TECH DATA & SCORES** — **February 17, 2018**

Temperature: **Skies:** **Winds:** **Range Faces: North**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	Scores: 100 Yd. Score / 200 Yd. Score	Grand Aggregate Score		Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Primer / No.	Muzz Vel. / Est. Chro.
Quadros, Norm	PBB	DNF	DNF		32 - 40	CPA	Ron Smith	None	Weaver	18 Lb.	D. Mos	208	L	25 - 1	322	Javalina	W 296	CCI	.
Royal Oaks, CA	BrchS	182 1 x			CPA	44 ½	28 -- 11	CPA	36	6 Oz.	.	PBB	N N	Pb - Sn	322	.	13.8	BR 2	.
Coover, Art	PRO	170 2 x	349 2 x		308	Remington	Remington	None	Tasco	9 Lb.	RCBS	175	BP	Lino-	300	Texaco	imr 4198	Win	1600
Modesto, CA	.	179 0 x			Win	700	24 -- 12	Remington	36	10 Oz.	180 SP	GsChk	N N	type	311	Turax	22.0	LR	Est.
Craig, Frank	HVY	196 3 x	380 3 x		30	Stolle	Wood BR	None	Leupold	13 Lb.	Eagan	212	L	Lino-	300	Texaco	imr 8208	Rem	1980
Soquel, CA	.	184 0 x			BR	Panda	26 -- 11	Wood BR	36	14 Oz.	.	GsChk	N N	type	310	Turax	27.0	SR	Chro.
Craig, Eric	HNT	130 0 x	272 0 x		30 - 30	Marlin	Marlin	None	Weaver	7 Lb.	Ideal	173	L	.	299	LLA	SR 4759	Rem	1650
Soquel, CA	.	142 0 x			Win	336 C	20 -- 10	Marlin	24	4 Oz.	308291	GsChk	N N	.	311	.	16.5	2 ½	Est.

ATGLEN SPORTSMEN'S CLUB, INC. --- ATGLEN, PA

Match Director: Kurt Menkes — **TECH DATA & SCORES** — **April 28, 2018**

Temperature: 60 **Skies: Mostly Sunny** **Winds: South @ 5 - 10 mph** **Range Faces: East**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	Scores: 100 Yd. Score / 200 Yd. Score	Grand Aggregate Score		Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Primer / No.	Muzz Vel. / Est. Chro.
Parker, Ed	PBB	192 5 x	368 5 x		32 - 20	CPA	Ron Smith	1 deg.	Leupold	. Lb.	D. Mos	200	BP	20 - 1	.	Schutzen	N 110	Fed	1400
Christiana, PA	BrchS	176 0 x			CPA	44 ½	28 -- 14	CPA	8.5 x 25	. Oz.	.	PBB	N Y	Pb - Sn	323	.	12.0	205m	Est.
Lahman, John	PBB	193 3 x	368 3 x		38 - 55	CPA	CPA	Taper	Sightron	. Lb.	Hoch	325	L	30 - 1	370	SPG,	imr 4227	CCI	1200
Gap, PA	BrchS	175 0 x			Win	44 ½	30 -- 15	CPA	36	. Oz.	.	PBB	N N	Pb - Sn	376	LLC	14.4	BR 2	Est.
Harmon, Barry	PBB	195 3 x	352 4 x		32	CPA	CPA	1 deg.	Weaver	14 Lb.	Hoch	202	BP	25 - 1	314	Home	imr 4227	Fed	1500
Mechanicsburg, PA	BrchS	157 1 x			B-J	44 ½	29 -- 15	CPA	36	10 Oz.	322-200D	PBB	N N	Pb - Sn	321	Made	16.0	205m	Est.
Miller, Charlie	PBB	184 2 x	346 4 x		38 - 55	CPA	Douglas	Taper	Leupold	. Lb.	Hoch	312	L	20 - 1	.	Home	imr 4759	Fed	1250
Lincoln University, PA	BrchS	162 2 x			Win	44 ½	30 -- 16	CPA	8.5 x 25	. Oz.	376 310	PBB	N N	Pb - Sn	376	Made	18.0	210	Est.
Spencer, Bob	PBB	176 1 x	346 1 x		32 - 20	CPA	CPA	None	Burris	15 Lb.	Hoch	210	L	20 - 1	Taper	Lyman	N 110	Fed	1600
Westtown, PA	BrchS	170 0 x			CPA	44 ½	28 -- 14	CPA	30	0 Oz.	32-20	PBB	N N	Pb - Sn	323	.	11.9	.	Est.
Bottiger, Jerry	HVY	193 3 x	375 3 x		308	Nesika	Krieger	1 deg.	Nightforce	12 Lb.	Accurate	217	L	Lino-	300	Gray's	N 135	Fed	1900
Mifflinburg, PA	.	182 0 x			x 1 1/2	J	23 -- Gain	McMillan	42	4 Oz.	311230E	GsChk	N Y	type	310	# 24	28.5	205m	Est.
Billings, James	UnP	195 7 x	378 7 x		338	Remington	Hart	1 deg.	Leupold	33 Lb.	Accurate	256	L	Lino-	.	Pig	Varget	Fed	.
Factoryville, PA	.	183 0 x			Lee	XP 100	24 -- 11	D. Martin	36	. Oz.	340270E	GsChk	N Y	type	340	Fat	32.5	205m	.

MODESTO RIFLE CLUB --- MODESTO, CA

Match Director: Paul Ott — **TECH DATA & SCORES** — **April 21, 2018**

Temperature: **Skies:** **Winds:** **Range Faces: North**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	Scores: 100 Yd. Score / 200 Yd. Score	Grand Aggregate Score		Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Primer / No.	Muzz Vel. / Est. Chro.
Quadros, Norm	PBB	DNF	DNF		32 - 40	CPA	Ron Smith	None	Weaver	18 Lb.	D. Mos	208	L	25 - 1	322	Javalina	W 296	CCI	.
Royal Oaks, CA	BrchS	181 1 x			CPA	44 ½	28 -- 11	CPA	36	6 Oz.	.	PBB	N N	Pb - Sn	322	.	13.8	BR 2	.
Coover, Art	PRO	174 3 x	357 3 x		308	Remington	Remington	None	Tasco	9 Lb.	RCBS	176	BP	Lino-	300	Texaco	imr 4198	Win	1600
Modesto, CA	.	183 0 x			Win	700	24 -- 12	Remington	24	10 Oz.	180 SP	GsChk	N N	type	311	Turax	22.0	LR	Est.
Craig, Frank	HVY	197 3 x	382 3 x		30	Stolle	Wood BR	None	Leupold	13 Lb.	Eagan	212	L	Lino-	300	Texaco	imr 8208	Rem	1980
Soquel, CA	.	185 0 x			BR	Panda	26 -- 11	Wood BR	36	14 Oz.	.	GsChk	N N	type	310	Turax	27.0	SR	Chro.
Craig, Eric	HNT	133 0 x	280 0 x		30 - 30	Marlin	Marlin	None	Weaver	7 Lb.	Ideal	173	L	.	299	LLA	SR 4759	Rem	1650
Soquel, CA	.	147 0 x			Win	336 C	20 -- 10	Marlin	24	4 Oz.	308291	GsChk	N N	.	311	.	16.5	2 ½	Est.

SPOKANE RIFLE CLUB --- SPOKANE, WA

Match Director: Don Barron — **TECH DATA & SCORES** — **April 7, 2018**

Temperature: 70 — **Skies: Heavy Rain** — **Winds: Calm** — **Range Faces: North**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	100 Yard 5 Shot Grp. Agg.	100 Yard 10 Shot Grp. Agg.	100 Yard Score Agg.	Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Pri-mer / No.	Muzz Vel. / Est. Chro.
Barron, Don Worley, ID	PRO .	1.174	1.747	176 1x	308 Win	Remington 700	Remington 24 -- 12	None Unknown	Leupold 45	10 Lb. 6 Oz	Accurate 31-215	215 GsChk	L N N	WW + 2% Tin	300 310	LBT Blue	imr 4227 17.0	Fed 210m	1450 Chro.
Schueler, Ray Nine Mile Falls, WA	PRO .	1.617	1.524	167 0x	250 Savage	Savage 16	Savage 22 -- 10	None Savage	36 Tasco	8 Lb. 8 Oz	RCBS 25-100	109 GsChk	BP N Y	WW 10 Lino 1	250 258	Wht Lbl .	Rel # 7 15.5	Win LR	1652 Chro.
Young, Joe Spangle, WA	PRO .	DNF	DNF	159 1x	308 Win	Remington 700 Var	Remington 26 -- 12	None Remington	Weaver 36	10 Lb. 11 Oz	Lyman 31141	175 GsChk	BP N N	WW 3 Lino 1	. 311	RCBS .	4198 22.0	CCI .	1800 Est.
Stripes, Mark Ellensburg, WA	HVY .	1.400	2.501	169 0x	30 BR	Ruger # 1	Unknown 26 -- 12	None Ruger	Weaver 25	12 Lb. 13 Oz	Lyman 311335	216 GsChk	BP N N	Lino type	303 309	Lyman Alox	Varget 27.8	Fed 205m	1870 Chro.
Stripes, Thomas Ellensburg, WA	HNT .	4.795	5.916	134 0x	308 Win	Savage Axis	Savage 22 -- 10	None Savage	Leupold 36	7 Lb. 4 Oz	RCBS 180 SP	181 GsChk	BP N N	Lino type	3015 309	Lyman Alox	Varget 28.0	Win LR	1650 Chro.

OAKDALE GUN CLUB --- LAKE ELMO, MN

Match Director: Tom Acheson — **TECH DATA & SCORES** — **April 16, 2018**

Temperature: 32°F — **Skies: Sunny/Cloudy** — **Winds: NNW 13mph** — **Range Faces: North**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	Scores: 100 Yard Score	100 Yard 10 Shot Grp. Agg.		Cartridge Desig-nation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun With Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom Pour / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Pri-mer / No.	Muzz Vel. / Est. Chro
Rockwell, C. V. Minneapolis, MN	PBB No	175 0 x	3.160		32 - 40 Win	Winchester 1885	Winchester 26 -- 12	None Winchester	Leupold 36	11 Lb 4 Oz	Saeco 523	185 PBB	L N N	Wheel Weights	. 321	Carnaub. Red	imr 4227 14.0	Win LR	1250 Est.
Acheson, Tom Maplewood, MN	LRH .	192 1 x	0.986		6.5 TKS	Remington XP 100	Benchmark 10.5 -- 8.5	1 deg. McMillan	Weaver 36	6 Lb 15 Oz	NOE 266-140	129 GsChk	L N N	Lino 1 Mono 1	Taper 266	Gray's # 24	imr4756 15.0	Rem 7 ½	1400 Est.
Studt, Steve Edina, MN	PRO .	165 0 x	2.133		308 Win	Remington 700	Remington .	None Remington	Redfield 20	10 Lb 5 Oz	Red River .	179 GsChk	BP N N	. .	. .	. SPG	imr 4227 17.9	Win LR	1600 Est.
Barber, Loren Lake Elmo, MN	HVY .	187 0 x	1.906		6 PPC	Kelbly Panda	Hart 22 -- 14	1 deg. Larson	Leupold 40	12 Lb 8 Oz	Mountain 244MM	73 GsChk	L N N	Lino- type	Taper 244	Alox .	imr 4227 14.0	Rem 6 ½	1900 Est.
Palecek, Dave White Bear Lk, MN	HVY .	176 0 x	1.875		7.62 NATO	Remington 700	Remington 28 — 12	None Remington	Leupold 10 x 50	16 Lb 6 Oz	NOE 311299	200 GsChk	L N N	WW 50-50	302 309	NRA Alox	H 4895 33.0	Fed 205	2000 Est.

TAMAQUA RIFLE & PISTOL CLUB --- TAMAQUA, PA

Match Director: David Martin — **TECH DATA & SCORES** — **May 5, 2018**

Temperature: — **Skies:** — **Winds:** — **Range Faces: South**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	Scores: 100 Yd. Score / 200 Yd. Score	Grand Aggregate Score	100 Yard 5 Shot Grp. Agg.	Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Pri-mer / No.	Muzz Vel. / Est. Chro.
Reenock, Wayne Whitehall, PA	PBB No	192 2 x 187 2 x	379 4 x	1.391	40 - 65 Win	Browning 1885	Badger 30 -- 16	None Browning	Unertl 14	13 Lb. 8 Oz.	Lyman Snover	405 PBB	L N N	20 - 1 Pb - Sn	392 410	SPG, LLC	imr 4759 20.0	Rem 9 ½	1366 Chro.
Simon, Buddy Walnutport, PA	HVY .	195 3 x 192 2 x	387 5 x	0.689	30 Wasp	Hart 1-A	. 23 -- 13	None McMillan	Nightforce 55	14 Lb. 0 Oz.	LBT 190 Sp	192 GsChk	BP N N	Lino- type	301 312	Hawkeye .	N 133 29.0	Fed 205m	. .
Kattell, Gary Afton, NY	HVY .	194 5 x 184 1 x	378 6 x	0.622	7.62 mm Kern	Remington 700	McMillan 22 -- 12	Taper McMillan	Leupold 36	13 Lb. 8 Oz.	Eagan mx3-30kbr	170 GsChk	L N N	Lino- type	302 312	Gray's # 24	N 133 24.0	Win LR	2200 Est.
Nowalk, Jody Hop Bottom	UnR .	186 1 x 0 0 x	186 1 x	1.284	30 BR	Remington 40X	Hart 22 -- 12	1 deg. McMillan	. 6 x 24	14 Lb. . Oz.	Accurate 310230e	210 GsChk	L N Y	Lino type	. 310	Home Made	W 748 34.5	Fed 205m	. .
Kranch, David Coplay, PA	UnP .	183 0 x 185 0 x	368 0 x	0.959	30 Wasp	Remington XP 100	Hart 23 -- 14	None Self	Leupold 36	65 Lb. 0 Oz.	LBT 190 Sptz	195 GsChk	BP N Y	Lino- type	301 312	Hawkeye .	N 133 29.0	Fed 205m	. .

PIONEER GUN CLUB --- KANSAS CITY, MO

Match Director: Richard Brinkman — **TECH DATA & SCORES** — **April 18, 2018**

Temperature: 40 **Skies: Cloudy** **Winds: Variable @ 35+ mph** **Range Faces: NW**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	200 Yard 5 Shot Grp. Agg.	200 Yard 10 Shot Grp. Agg.	200 Yard Score Agg.	Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Pri-mer / No.	Muzz Vel. / Est. Chro.
Brinkman, Richard Pleasant Hill, MO	PBB BrchS	3.305	3.392	155 0x	32 Miller Short	CPA 44 ½	Ron Smith 28-- Gain	None Self	Leupold 36	15 Lb. 0 Oz.	S. Brooks 322235	235 PBB	L N N	20 - 1 Pb - Sn	316 322	Alberta Schutzer	AA 4100 13.3	CCI BR 4	1440 Chro.
Duncan, Chuck Independence, MO	HVY .	3.593	3.534	162 0x	30 BR	Remington 700	Lilja 24 -- 11	1/2 deg. Self	45 Leupold	12 Lb. 8 Oz.	Accurate 310 E3A	220 GsChk	L N N	Lino type	301 3095	BAC Red	8208 26.0	Rem 7 ½	1900 Chro.
MILITARY TECH DATA & SCORES																			
Frey, John Grandview, MO	MII .	6.716	8.187	186 5x	30 - 06 Sprgfield	Remington 03 - A3	Remington 24 -- 10	None Remington	Issue Iron	. Lb. . Oz.	Lyman 314299	202 GsChk	L .	Magic Alloy	303 311	Wht Lbl 2500+	A 5744 17.0	Win LR	1400 Est.
Sumpter, Dwayne Pleasant Hill, MO	MII .	4.935	7.062	DNF	30 - 06 Sprgfield	Remington 03 - A3	Remington 25 -- 10	None Remington	Issue Iron	. Lb. . Oz.	NOE 314299	202 GsChk	L .	Magic Alloy	303 310	Wht Lbl 2500+	A 5744 17.0	Win LR	1450 Est.
Duncan, Randall Buckner, MO	MMI .	4.268	6.406	191 5x	7.5 mm x 55	Swiss K 31	Swiss 24 -- 10	None Swiss	Modified Iron	. Lb. . Oz.	Accurate 31-220G	207 GsChk	L N N	Lino type	297 310	Wht Lbl 2500+	imr 4198 24.0	Fed 210m	1650 Chro.
Windsor, Richard Windsor, MO	MMS .	4.548	5.812	188 3x	30 - 06 Sprgfield	Remington 03 - A3	Remington 26 -- 10	None Remington	Vortex 6 x 12	. Lb. . Oz.	Accurate 31-200V	205 GsChk	L .	Wheel Weights	301 312	Wht Lbl 2500+	Blue Dot 15.0	Rem 9 ½	1450 Chro.

SPOKANE RIFLE CLUB --- SPOKANE, WA

Match Director: Don Barron — **TECH DATA & SCORES** — **May 12, 2018**

Temperature: Lo 50 Hi 70 **Skies: Sunny** **Winds: Variable** **Range Faces: North**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	100 Yard 5 Shot Grp. Agg.	100 Yard 10 Shot Grp. Agg.	100 Yard Score Agg.	Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Pri-mer / No.	Muzz Vel. / Est. Chro.
Pinney, Bev Salmo, BC	PBB BrchS			DNF	32x30-30 Short	Musgrave Bolt SS	Ron Smith 27 -- Gain	None Self	Leupold 45	16 Lb. 8 Oz.	P. Jones 32-40	230 PBB	BP N N	30 - 1 Pb - Sn	318 322	Chuckles .	AA # 9 11.0	Win LR	1375 Chro.
Young, Joe Spangle, WA	PRO .	1.037	1.815	184 0x	308 Win	Savage 12	Savage 26 -- 12	None Savage	4 x 12 Weaver	. Lb. . Oz.	Saeco 315	173 GsChk	L N N	Wheel Weights	. 311	RCBS .	Varget 30.0	CCI .	. .
Gallagher, Lloyd Oroville, WA	HVY .	1.350	1.742	184 0x	30 BR	Self # 2	McMillan 24 -- 11	Taper McMillan	Leupold 36	13 Lb. 14 Oz.	Hoch .	195 GsChk	L N Y	Lino 1 WW 1	3095 .	Blue Angel	N 135 27.1	Win SR	2000 Est.
Cavarrusias, Ricardo Oroville, WA	HVY .	1.759	2.212	164 0x	30 BR	Gallagher # 3	Lilja 24 -- 12	Taper McMillan	Leupold 36	13 Lb. 6 Oz.	Hoch .	195 GsChk	L N N	Lino 1 WW 1	300 309	Blue Angel	AA2495 25.5	Fed 205m	1850 Est.
Schueler, Ray Nine Mile Falls, WA	HNT .	1.449	2.319	177 0x	250 Savage	Savage 16	Savage 22 -- 10	None Savage	Tasco 36	8 Lb. 8 Oz.	Saeco 25-100	103 GsChk	BP N N	WW 10 Lino 1	251 2594	NRA .	Rel # 7 14.3	Rem 9 ½	1695 Chro.
MILITARY TECH DATA & SCORES																			
Barron, Don Worley, ID	MII .	3.652	4.795	154 2x	30 - 06 Sprgfield	Winchester 1917	Winchester 24 -- 10	None Issue	Issue Iron	. Lb. . Oz.	LBT 310195sp	186 GsChk	L .	WW + 2% Tin	300 310	LBT Blue	2400 17.0	Fed 210m	1620 Chro.
Cooper, Mike Colebert, WA	MII .	5.390	6.835	125 0x	30 - 06 Sprgfield	Sprgfield M 1	Sprgfield 26 -- 10	None Issue	Issue Iron	. Lb. . Oz.	Lee .	200 GsChk	BP .	Custom .	. 309	Lee Lq Alox	H 4895 40.0	CCI 200	2300 Est.

EMERALD EMPIRE GUN CLUB --- SPRINGFIELD, OR

Match Director: Rick Parra — **TECH DATA & SCORES** — **May 12, 2018**

Temperature: **Skies:** **Winds:** **Range Faces: North**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	100 Yard 5 Shot Grp. Agg.	100 Yard 10 Shot Grp. Agg.	100 Yard Score Agg.	Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Pri-mer / No.	Muzz Vel. / Est. Chro.
Zulyevic. Richard Harrisburg, OR	PRO .	1.933	3.007	179 4x	308 Win	Ruger M 77	Ruger 25 -- 10	None Ruger	Tasco 36	11 Lb. 10 Oz.	Applegate 314004	205 GsChk	BP Y N	Lino 1 WW 1	301 313	Blue Angel	imr 4895 26.0	Win LR	1800 Est.
Uhl, Kent Oregon City, OR	HVY .	0.778	1.073	198 7x	30 BR Short	BAT S	Lilja 26 -- 11	None McMillan	10 x 50 Sightron	13 Lb. 1 Oz.	Accurate 310230	216 GsChk	BP N N	Lino- type	301 310	Star .	N 135 27.5	Win SR	1990 Chro.
Allen, Chuck Roseburg, OR	HVY .	0.611	0.627	198 5x	30 Harris	Nesika J	Borden 25 -- 11	None Borden	Sightron 10 x 50	13 Lb. 1 Oz.	Accurate 310230E	215 GsChk	BP N N	Lino- type	302 3095	Red Angel	N 135 26.5	Win SR	1950 Est.
Harris, Mel Roseburg, OR	HVY .	0.432	0.540	197 6x	30 Harris	Remington XP 100	Shilen 25.5 -- 12	None Six Ent.	Sightron 10 x 50	13 Lb. 0 Oz.	Eagan mx4ARD	210 GsChk	BP N Y	Lino- type	3015 310	Star .	3032 26.0	Fed 205m	2050 Chro.
Edwards, Virgil Sandy, OR	HVY .	0.723	1.168	193 2x	30 BR Short	Remington 700	Hart 23.5 -- 10	None McMillan	Leupold 36	13 Lb. 4 Oz.	Accurate 310230E	215 GsChk	L N N	Lino- type	301 310	Orange 44	N 135 27.2	Rem 7 ½	1950 Est.
Miller, Jesse Springfield, OR	HVY .	1.902	1.843	DNF	30 BR	Stolle Panda	Shilen 26 -- 12	None McMillan	Sightron 10 x 40	12 Lb. 0 Oz.	Eagan ARD	212 GsChk	L N N	Lino- type	301 312	Star Red	N 135 27.7	Rem 7 ½	1835 Est.

ATGLEN SPORTSMEN'S CLUB, INC. --- ATGLEN, PA

Match Director: Kurt Menkes — **TECH DATA & SCORES** — **May 26, 2018**

Temperature: 85 — **Skies: Partly Sunny** — **Winds: SSW @ 3 - 5 MPH** — **Range Faces: East**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	Scores: 100 Yd. Score / 200 Yd. Score	Grand Aggregate Score	100 Yard 10 Shot Grp. Agg.	Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Primer / No.	Muzz Vel. / Est. Chro.
Miller, Charlie	PBB	188 3 x	371 5 x	0.000	38 - 55	CPA	Douglas	Taper	Leupold	. Lb.	Hoch	312	L	20 - 1	.	Home	imr 4759	Fed	1250
Lincoln University, PA	BrchS	183 2 x			Win	44 ½	30 -- 16	CPA	8.5 x 25	. Oz.	376 310	PBB	N N	Pb - Sn	376	Made	18.0	210	Est.
Harmon, Barry	PBB	192 2 x	364 3 x	0.000	32	CPA	BRC	1 deg.	Weaver	14 Lb.	Hoch	202	BP	25 - 1	314	Home	imr 4227	Fed	1500
Mechanicsburg, PA	BrchS	172 1 x			B-J	44 ½	29 -- 15	CPA	36	10 Oz.	322-200D	PBB	N N	Pb - Sn	321	Made	17.0	205m	Est.
Lahman, John	PBB	193 1 x	360 2 x	0.000	38 - 55	CPA	CPA	Taper	Sightron	. Lb.	Hoch	325	L	30 - 1	370	SPG,	imr 4227	CCI	1200
Gap, PA	BrchS	167 1 x			Win	44 ½	30 -- 15	CPA	36	. Oz.	.	PBB	N N	Pb - Sn	376	LLC	14.4	BR 2	Est.
Parker, Ed	PBB	172 3 x	335 3 x	0.000	32 - 20	CPA	Ron Smith	1 deg.	Leupold	. Lb.	D. Mos	200	BP	20 - 1	.	Schutzen	N 110	Fed	1400
Christiana, PA	BrchS	163 0 x			CPA	44 ½	28 -- 14	CPA	8.5 x 25	. Oz.	.	PBB	N Y	Pb - Sn	323	.	12.0	205m	Est.
Spencer, Bob	PBB	176 0 x	320 0 x	0.000	32 - 20	CPA	CPA	None	Burris	15 Lb.	Hoch	210	L	20 - 1	Taper	Lyman	N 110	Fed	1600
Westtown, PA	BrchS	144 0 x			CPA	44 ½	28 -- 14	CPA	30	0 Oz.	32-20	PBB	N N	Pb - Sn	323	.	11.9	.	Est.
Bottiger, Jerry	HVY	187 5 x	379 6 x	0.000	308	Nesika	Krieger	1 deg.	Nightforce	12 Lb.	Accurate	217	L	Lino-	300	Gray's	N 135	Fed	1900
Mifflinburg, PA	.	192 1 x			x 1 1/2	J	23 -- Gain	McMillan	42	4 Oz.	311230E	GsChk	N Y	type	310	# 24	28.5	205m	Est.
Billings, James	UnP	194 9 x	379 9 x	0.000	30	Remington	Hart	1 deg.	Weaver	32 Lb.	Accurate	214	L	Lino-	300	Home	W 2230	CCI	.
Factoryville, PA	.	185 0 x			BR	XP 100	24 -- 11	D. Martin	36	. Oz.	310230e	GsChk	N Y	type	310	Made	30.0	400	.

PIONEER GUN CLUB --- KANSAS CITY, MO

Match Director: Richard Brinkman — **TECH DATA & SCORES** — **May 16, 2018**

Temperature: 75 — **Skies: Clear** — **Winds: South @ 5 - 10 mph** — **Range Faces: NW**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	100 Yard 5 Shot Grp. Agg.	100 Yard 10 Shot Grp. Agg.	100 Yard Score Agg.	Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Primer / No.	Muzz Vel. / Est. Chro.
Windsor, Richard	PBB	0.693	0.742	182 0x	32 Miller	Ruger	Douglas	None	Leupold	14 Lb.	Pioneer	220	L	20 - 1	321	Wht Lbl	AA 4100	CCI	1420
Windsor, MO	BrchS				Short	# 1	25 -- 10	Wolf Branch	36	2 Oz	322225	PBB	N N	Pb - Sn	321	BAC	11.5	BR 4	Chro.
VanEngelenhoven, J	LRH	3.421	3.892	161 0x	30 - 30	T/C	T/C	None	2 x 8	5 Lb.	RCBS	165	L	Wheel	300	Home	A 5744	Win	1400
Independence, MO	.				Win	Contender	14 -- 10	T/C	Bushnell	3 Oz.	165 Sil	GsChk	N N	Weights	310	Made	17.0	SR	Est.
Duncan, Chuck	HVY	0.670	1.026	200 6x	30	Remington	Richards	1/2 deg.	Leupold	13 Lb.	Accurate	220	L	Lino	301	BAC	8208	Fed	1850
Independence, MO	.				BR	700	24 -- 11	Richards	45	8 Oz	310 E3A	GsChk	N N	type	3095	Red	26.0	205m	Chro.
Duncan, Randall	HVY	1.104	1.206	181 0x	308	Savage	Savage	None	Leupold	9 Lb.	Accurate	202	L	Lino	300	Wht Lbl	AA 5744	Fed	1600
Buckner, MO	.				Win	11	20 -- 10	Boyd's	24	7 Oz.	31-220J	GsChk	N N	type	310	0	17.0	210m	Est.
MILITARY TECH DATA & SCORES																			
Sumpter, Dwayne	MII	2.085	2.246	192 0x	30 - 06	Remington	Remington	None	Issue	. Lb.	NOE	202	L	Magic	303	Wht Lbl	A 5744	Win	1450
Pleasant Hill, MO	.				Sprgfield	03 - A3	25 -- 10	Remington	Iron	. Oz	314299	GsChk	.	Alloy	310	2500+	17.0	LR	Est.
Frey, John	MII	2.021	2.944	189 0x	30 - 06	Remington	Remington	None	Issue	. Lb.	Lyman	202	L	Magic	303	Wht Lbl	A 5744	Win	1400
Grandview, MO	.				Sprgfield	03 - A3	24 -- 10	Remington	Iron	. Oz	314299	GsChk	.	Alloy	311	2500+	17.0	LR	Est.

BALD EAGLE SPORTSMAN'S ASSOCIATION --- HUGO, MN

Match Director: John Kaufenberg — **TECH DATA & SCORES** — **May 17, 2018**

Temperature: 32°F — **Skies:** — **Winds:** — **Range Faces: East**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	Scores: 100 Yard Score	100 Yard 5 Shot Grp. Agg.		Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun With Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom Pour / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Primer / No.	Muzz Vel. / Est. Chro
Barber, Loren	HVY	189 5 x	0.745		6	Kelbly	Hart	1 deg.	Leupold	12 Lb.	LBT	76	L	20	.	Blue	imr 4227	Rem	2000
Lake Elmo, MN	.				PPC	Panda	22 -- 14	Larson	40	8 Oz	244	GsChk	N N	BHN	245	Angel	13.5	6 ½	Est.
Palecek, Dave	HVY	165 3 x	1.500		7.62	Remington	Remington	None	Leupold	10 Lb.	NOE	200	L	Lyman	302	NRA	imr 4895	Fed	2000
White Bear Lk, MN	.				NATO	700	26 -- 12	H-S Prec.	8.5 x 25	. Oz	311202RN	GsChk	N N	# 2	309	Alox	33.0	210m	Est.
Kaufenberg, John	HNT	193 4 x	0.980		308	Remington	Remington	None	Sightron	9 Lb.	LBT	190	BP	Lino +	.	LBT	imr 4756	Fed	1550
White Bear Lk, MN	.				Win	700	20 -- 12	Remington	24	7 Oz	Spitzer	GsChk	N Y	WW	.	Blue	15.0	210m	Chro.
Olson, Robert	HNT	157 0 x	2.476		30 - 06	Winchester	Winchester	None	Tasco	8 Lb.	Lyman	205	BP	92-6-2	303	LBT	imr 4227	Win	1600
Chaska, MN	.				Win	70	22 -- 10	Winchester	4 x 12	13 Oz	311299	GsChk	N N	.	312	Blue	16.5	LR	Est.
MILITARY TECH DATA & SCORES																			
Fredrickson, Lloyd	MMS	191 7 x	1.952		7.5 x 55	.	.	None	Burris	9 Lb.	NOE	188	BP	92-2-6	301	LBT	imr 4756	Fed	.
Cameron, WI	.				.	K31	.	.	6	6 Oz	311334	GsChk	N N	.	309	Soft Blue	15.2	210m	.

BLUE HILLS SPORTSMEN'S CLUB --- RICE LAKE, WI

Match Director: Jack Harrison — **TECH DATA & SCORES** — **May 12, 2018**

Temperature: 60°F — **Skies: Partly Sunny** — **Winds: 4 - 6 mph ENE** — **Range Faces: NNW**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	Scores	100 Yard Score	100 Yard 10 Shot Grp. Agg.	Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun with Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom Pour / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Pri-mer / No.	Muzz Vel. / Est. Chro
Tyznik, Alan Thorp, WI	LRH .		95 0 x	6.100	7 mm BR	Remington XP 100	Remington 14.5 -- 10	None Remington	Simmons 36	. Lb. . Oz.	Saeco 73	168 GsChk	BP NN	Lino 1 WW 1	. 285	Alox .	Rel # 7 20.0	CCI 400	1400 Est.
Harrison, Jack Chetek, WI	PRO .		188 4 x	1.323	223 Rem	Remington 700 LTR	Remington 20 -- 9	None Remington	Vortex 15 x 60	10 Lb. 8 Oz.	NOE 22780SP	78 GsChk	BP N N	Lino type	219 225	Alox BzWax	imr 4759 11.0	CCI BR4	1800 Est.
Palecek, Dave White Bear Lk, MN	PRO .		188 2 x	1.366	308 Win	Remington 700	Remington 26 -- 12	None H-S Prec.	Leupold 8.5 x 25	10 Lb. . Oz.	NOE 311202RN	200 GsChk	L N N	Lyman # 2	302 309	NRA Alox	imr 4895 33.0	Fed 210m	2000 Est.
Kaufenberg, John White Bear Lk, MN	HNT .		190 2 x	1.023	308 Win	Remington 700	Remington 20 -- 12	None Remington	Sightron 24	9 Lb. 7 Oz.	LBT Spitzer	190 GsChk	BP N Y	Lino + WW	. .	LBT Blue	imr 4756 15.0	Fed 210m	1550 Chro.
Olson, Robert Chaska, MN	HNT .		160 1 x	3.514	30 - 06 Win	Winchester 70	Winchester 22 -- 10	None Winchester	Tasco 4 x 12	8 Lb. 13 Oz.	Lyman 311299	209 GsChk	BP N N	92-6-2 .	303 314	LBT Blue	imr 4198 19.2	Win LR	1800 Est.
MILITARY TECH DATA & SCORES																			
Bell, Sherman Chetek, WI	MMS .		191 6 x	2.757	8 x 57 Mauser	CZ Yugo	Issue .	None Issue	Vortex 6 x	. Lb. . Oz.	NOE 324252RN	235 GsChk	. N N	Lino type	. 325	LBT Blue	imr 4759 21.0	Win LR	1800 Est.
Fredrickson, Lloyd Cameron, WI	MMS .		189 5 x	2.185	7.5 x 55 .	. K31	. .	None .	Burris 6	9 Lb. 6 Oz.	NOE 311334	188 GsChk	BP N N	92-2-6 .	301 309	LBT Soft Blue	imr 4756 15.2	Fed 210m	1320 Chro.

WIND HILL RANGE --- ALEDO, IL

Match Director: Stan Livingston — **TECH DATA & SCORES** — **May 12, 2018**

Temperature: 50°F — **Skies: Rain** — **Winds: East 10 mph** — **Range Faces:**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	Scores	100 Yard Score		Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun With Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom Pour / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Pri-mer / No.	Muzz Vel. / Est. Chro
Rickertsen, Chad Clinton, IA	PBB BrchS		195 1 x		32 Miller Short	Peregrin 33	Ron Smith 24 -- Gain	None .	Leupold 24	15 Lb. 7 Oz.	Vietz .	232 PBB	BP N N	23 - 1 Pb - Sn	319 323	BzWax 1 Vaslne 1	AA # 9 11.7	Fed 205	1375 Est.
Allen, Kathy Dewitt, IA	PBB BrchS		194 3 x		35 Miller Short	Peregrin .	Douglas 20	None .	Sightron 8 x 32	12 Lb. . Oz.	Mos .	275 PBB	L N N	20 - 1 Pb - Sn	. 358	Emmert's .	AA # 9 12.1	CCI 400	1400 Est.
O'Neill, Terry Princeton, IA	PBB BrchS		189 3 x		32 Miller Short	FBW J	BRC 27.5 -- 15	None Custom	Leupold 36	. Lb. . Oz.	Doc Brewer .	213 PBB	L N N	20 - 1 Pb - Sn	. 323	Emmert's Formula	AA # 9 11.8	Rem 7 ½	1450 Est.
Allen, Clark Dewitt, IA	PBB BrchS		189 1 x		32 Miller Short	FBW J	Douglas 24 -- 12	None CPA	Sightron 8 x 50	10 Lb. . Oz.	D. Mos 32	196 PBB	L N N	20 - 1 Pb - Sn	. 321	Emmert's .	AA # 9 11.8	CCI 400	1450 Est.
Rickertsen, Larry Bryant, IA	PBB BrchS		188 4 x		32 Miller Short	Miller DeHass	. 25 -- .	. .	Weaver 16	. Lb. . Oz.	Barnett .	207 PBB	BP N N	23 - 1 Pb - Sn	. 323	. .	AA4100 11.2	Wolf .	. .
Livingston, Stan Oquawka, IL	PBB .		164 0 x		32 - 40 Win	CPA 44 ½	Unknown 26 -- 16	None CPA	Leupold 12	11 Lb. . Oz.	Vietz .	190 PBB	L N N	20 - 1 Pb - Sn	318 322	White Label	imr 4227 14.5	Rem 2 ½	. .
Young, Gerry Viola, IL	PRO .		184 3 x	0.000	308 Win	Rem 700 V	Remington 24 -- 12	None Remington	Weaver 36	11 Lb. 10 Oz.	Eagan mx4ARD	215 GsChk	L N Y	Lino- type	302 311	Alox NRA	N 135 29.0	Rem 6 ½	. .
Hudson, Dan Iowa City, IA	UNR .		195 3 x		30 BR	Remington 40X	Lilja 24 -- 16	3/4 deg. Judd	B & L 36	. Lb. . Oz.	Old West .	168 GsChk	BP N N	Lino- type	302 310	MTL .	N 135 24.0	Win SR	2000 Est.

CHARLOTTE RIFLE & PISTOL CLUB, INC. --- CHARLOTTE, NC

Match Director: H. L. Yarborough — **TECH DATA** — **Dixie Regional -- May 4th & 5th, 2018**

Temperature: **Skies:** **Winds:** **Range Faces: North**

PERSONAL DATA					EQUIPMENT						BULLETS						LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	Scores: 100 Yd. Score / 200 Yd. Score	Grand Aggregate Score		Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Pri-mer / No.	Muzz Vel. / Est. Chro.
Bedi, Charles	PRO				308	Remington	Remington	None	Leupold	10 Lb.	NOE	186	BP	WW 1	303	Alox	imr8208	Fed	1850
Rock Hill, SC	.				Win	700	26 -- 12	H-S Prec.	40	6 Oz.	311188f	GsChk	N N	Lino 1	311	.	28.5	210m	Est.
Billings, James	UnP				338	Remington	Hart	1 deg.	Leupold	33 Lb.	Accurate	260	L	Lino-	.	Pig	Varget	Fed	.
Factoryville, PA	.				BR	XP 100	24 -- 11	D. Martin	36	. Oz.	340270E	GsChk	N Y	type	340	Fat	33.0	205m	.
Bottiger, Jerry	HVY		B		308	Nesika	McMillan	1 deg.	Nightforce	12 Lb.	Accurate	217	L	Lino-	300	Gray's	N 135	Fed	1900
Mifflinburg, PA	.				x 1 1/2	J	23 -- Gain	McMillan	42	4 Oz.	311230E	GsChk	N Y	type	310	# 24	28.5	205m	Est.
Crosby, Billy	UnR	S	E		30	Hall	Lilja	1 deg.	Nightforce	14 Lb.	Accurate	146	BP	Lino-	304	LBT	Varget	Fed	2000
Rock Hill, SC	.				BR	.	22 -- 12	.	42	6 Oz.	.	GsChk	N Y	type	310	Blue	30.0	205m	Est.
Federline, Dave	HVY	E	L		30	Remington	Lilja	None	Redfield	12 Lb.	RCBS	183	BP	WW 2	301	Moly	imr 4759	Win	1925
Knoxville, MD	.				BR	40X	19 -- 13	Lee Six	24	11 Oz.	180 SP	GsChk	Y Y	Lino 1	310	Alox	20.1	SR	Est.
Higgins, William	UnR	E	O		30	Remington	Lilja	1 deg.	Weaver	20 Lb.	LBT	180	BP	Lino-	.	LBT	Varget	Fed	2100
Indian Trail, NC	.				BR	700	24 -- 13	Lee Six	36	4 Oz.	.	GsChk	N Y	type	311	BlueSft	30.0	205m	Est.
Hisle, Dan	HVY		W		6.5 mm	Remington	McGowen	None	Sightron	12 Lb.	NOE	133	L	Lino-	259	Carnuba	imr 8208	Win	.
Newmarket, TN	.				Crdmore	700	28 -- 8	McMillan	36	9 Oz.	268140FN	GsChk	N N	type	264	Red	21.5	LR	.
Hisle, Sharon	PRO				243	Ruger	Ruger	None	Weaver	10 Lb.	NOE	100	L	Lino-	237	Carnuba	AL2400	Win	2250
Newmarket, TN	.				Win	M77 Var	24 -- 10	Ruger	36	9 Oz.	246105FN	GsChk	N N	type	244	Red	16.5	LR	Chro.
Jones, Ruben Joe	UnP				30	Defiance	Lilja	1 deg.	Leupold	24 Lb.	Accurate	180	BP	Lino-	304	LBT	Varget	Fed	2150
Rock Hill, SC	.				BR	Rebel	22 -- 12	Lee Six	36	. Oz.	.	GsChk	N Y	type	310	Blue	30.0	205m	Chro.
Lineberger, Robbie	UnP				30	Remington	Lilja	1 deg.	Sightron	22 Lb.	LBT	179	BP	Lino-	302	LBT	AA LT32	Rem	2284
Rock Hill, SC	.				BR	XP 100	21 -- 13	McMillan	10 X 50	7 Oz.	190SP	GsChk	N Y	type	310	Blue	27.9	7 ½	Chro.
Lowther, Scott	HVY				30	Remington	Lilja	None	Leupold	13 Lb.	Accurate	200	BP	Lino-	3005	LBT	N 135	Fed	2000
Harpers Ferry, WV	.				BR	40X	22 -- 10	McMillan	36	6 Oz.	310220E	GsChk	Y Y	type	310	Blue	28.6	205m	Chro.
Martin, Dave	UnP				30	Remington	Lilja	1 deg.	Leupold	25 Lb.	LBT	185	BP	Lino-	304	LBT	Varget	Fed	2100
Orwigsburg, PA	.				BR	XP 100	22 -- 13	Kelbly	45	. Oz.	190 Tpr	GsChk	N Y	type	310	Blue	30.0	205m	Chro.
Reyes, Rudy	PRO				308	Remington	Remington	None	Leupold	9 Lb.	LBT	208	L	Lino 1	301	LBT	N 133	Win	1650
Leesburg, VA	.				Win	700	20 -- 12	Remington	36	6 Oz.	310210	GsChk	N N	WW 1	3095	Blue	27.2	LR	Est.
Ross, Don	HVY				30	Stiller	Krieger	1 deg.	Sightron	14 Lb.	Accurate	214	BP	Lino-	301	Voodoo	N 133	Fed	1900
Rock Hill, SC	.				BR	Viper	22 -- 12	Lee Six	10 X 50	0 Oz.	310230F	GsChk	N N	type	3094	Red	27.5	205m	Est.
Sechrist, Jeffrey	HVY				308	Remington	McGowen	None	Sightron	13 Lb.	Accurate	181	L	Lino-	298	Carnuba	AL2400	Win	2250
Newmarket, TN	.				Win	700 Var	26 -- 10	Dan Hisle	36 x 42	2 Oz.	31-190H	GsChk	N N	type	310	Red	20.0	LR	Est.
Silver, Ray	UnR				30	Hart	Lilja	None	Nightforce	27 Lb.	Accurate	175	L	Lino-	.	LBT	Varget	Fed	2200
Rock Hill, SC	.				BR	1-A	24 -- 13	Lee Six	12 x 42	0 Oz.	.	GsChk	N Y	type	309	Blue	30.0	205m	Est.
Turner, Tom	UnP				30	Remington	Lilja	1 deg.	Weaver	. Lb.	LBT	186	BP	Lino-	302	LBT	Varget	Rem	1800
Rock Hill, SC	.				BR	XP 100	22 -- 13	McMillan	36	. Oz.	.	GsChk	N Y	type	310	BlueSft	29.0	7 ½	Est.

CHARLOTTE RIFLE & PISTOL CLUB, INC. --- CHARLOTTE, NC

Match Director: H. L. Yarborough — **SCORES & GROUPS** — **Dixie Regional -- May 4th & 5th, 2018**

Competitor	Class	Sort	100 Yd AGG.		200 Yd AGG.		GRAND AGG.	
Reyes, Rudy	PRO	5	192	5 x	184	0 x	376	5 x
Bedi, Charlie	PRO	5	174	1 x	171	0 x	345	1 x
Hisle, Sharon	PRO	5	154	0 x	174	0 x	328	0 x
Bottiger, Jerry	HVY	7	193	4 x	197	2 x	390	6 x
Federline, Dave	HVY	7	196	4 x	188	0 x	384	4 x
Ross, Don	HVY	7	195	3 x	187	1 x	382	4 x
Lowther, Scott	HVY	7	192	1 x	183	0 x	375	1 x
Hisle, Dan	HVY	7	160	0 x	169	0 x	329	0 x
Sechrist, Jeff	HVY	7	151	1 x	160	0 x	311	1 x
Silver, Ray	UnR	9	199	5 x	197	1 x	396	6 x
Higgins, Bill	UnR	9	197	5 x	195	0 x	392	5 x
Crosby, Billy	UnR	9	189	4 x	189	1 x	378	5 x
Martin, Dave	UnP	11	194	5 x	186	1 x	380	6 x
Lineberger, Robbie	UnP	11	192	4 x	186	0 x	378	4 x
Turner, Tom	UnP	11	192	3 x	185	1 x	377	4 x
Billings, Jim	UnP	11	192	5 x	184	0 x	376	5 x
Jones, Joe	UnP	11	183	2 x	192	1 x	375	3 x

5 SHOT GROUP AGGREGATES

Competitor	Cls.	Sort	100 Yd	200 Yd	MOA
Reyes, Rudy	PRO	5	1.529	2.638	1.424
Bedi, Charlie	PRO	5	2.210	2.961	1.845
Hisle, Sharon	PRO	5	3.559	4.705	2.956
Bottiger, Jerry	HVY	7	0.808	1.775	0.848
Lowther, Scott	HVY	7	1.030	2.434	1.123
Ross, Don	HVY	7	1.208	2.482	1.224
Federline, Dave	HVY	7	1.673	2.650	1.499
Sechrist, Jeff	HVY	7	1.431	3.316	1.544
Hisle, Dan	HVY	7	1.595	3.335	1.631
Silver, Ray	UnR	9	0.448	1.503	0.600
Crosby, Billy	UnR	9	0.893	1.834	0.905
Higgins, Bill	UnR	9	1.173	1.531	0.969
Jones, Joe	UnP	11	0.999	1.605	0.901
Martin, Dave	UnP	11	0.889	2.355	1.033
Billings, Jim	UnP	11	0.914	2.373	1.050
Turner, Tom	UnP	11	1.120	2.154	1.099
Lineberger, Robbie	UnP	11	1.612	2.282	1.377

10 SHOT GROUP AGGREGATES

Competitor	Cls.	Sort	100 Yd	200 Yd	MOA
Reyes, Rudy	PRO	5	1.376	2.749	1.375
Bedi, Charlie	PRO	5	2.128	3.193	1.862
Hisle, Sharon	PRO	5	4.062	5.310	3.358
Bottiger, Jerry	HVY	7	0.856	1.746	0.864
Lowther, Scott	HVY	7	1.363	2.057	1.195
Ross, Don	HVY	7	1.782	2.582	1.536
Federline, Dave	HVY	7	1.493	3.230	1.554
Hisle, Dan	HVY	7	1.920	4.430	2.068
Sechrist, Jeff	HVY	7	1.766	5.830	2.340
Silver, Ray	UnR	9	0.917	1.268	0.775
Crosby, Billy	UnR	9	1.390	1.381	1.040
Higgins, Bill	UnR	9	1.404	1.869	1.169
Lineberger, Robbie	UnP	11	1.150	1.848	1.037
Jones, Joe	UnP	11	1.068	2.034	1.042
Martin, Dave	UnP	11	0.999	3.059	1.264
Billings, Jim	UnP	11	1.264	2.910	1.359
Turner, Tom	UnP	11	1.371	2.815	1.389

CHARLOTTE RIFLE & PISTOL CLUB, INC. --- CHARLOTTE, NC

Match Director: H. L. Yarborough — **TECH DATA & SCORES** — **April 4, 2018**

Temperature: **Skies:** **Winds:** **Range Faces: North**

PERSONAL DATA					EQUIPMENT						BULLETS							LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	Scores: 100 Yd. Score / 200 Yd. Score	Grand Aggregate Score	100 Yard 5 Shot Grp. Agg.	Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Pri-mer / No.	Muzz Vel. / Est. Chro.
Higgins, William	PRO	184 3 x	333 3 x		308	Savage	Savage	1 deg.	Weaver	11 Lb.	LBT	206	BP	Lino-	Taper	LBT	AA LT32	Fed	2056
Indian Trail, NC	.	149 0 x			Win	12	26 -- 10	Savage	36	10 Oz.	311-220	GsChk	N N	type	311	BlueSft	27.0	210m	Chro.
Bedi, Charles	PRO	171 0 x	304 0 x		308	Remington	Remington	None	Leupold	10 Lb.	NOE	186	BP	WW 1	303	Alox	imr8208	Fed	1850
Rock Hill, SC	.	133 0 x			Win	700	26 -- 12	H-S Prec.	40	6 Oz.	311188f	GsChk	N N	Lino 1	311	.	28.5	210m	Est.
Stora, Ray	PRO	153 0 x	277 1 x		30 - 06	Sprgfield	Springfield	None	Unertl	. Lb.	NOE	193	L	Lino+	301	LBT	2400	Fed	1525
Matthews, NC	.	124 1 x			Sprgfield	1903	24 -- 10	Springfield	8	. Oz.	314202	GsChk	N N	Scrap	311	Blue	16.5	210m	Chro.
Silver, Ray	UnR	194 2 x	385 2 x		30	Hart	Lilja	None	Nightforce	27 Lb.	Accurate	175	L	Lino-	.	LBT	Varget	Fed	2200
Rock Hill, SC	.	191 0 x			BR	1-A	24 -- 13	Lee Six	12 x 42	0 Oz.	.	GsChk	N Y	type	309	Blue	30.0	205m	Est.
Yarborough, H.L.	UnP	194 5 x	383 5 x		30	Defiance	Lilja	1 deg.	Leupold	24 Lb.	Accurate	180	BP	Lino-	304	LBT	Varget	Fed	2150
Rock Hill, SC	.	189 0 x			BR	Rebel	22 -- 12	Lee Six	36	. Oz.	.	GsChk	N Y	type	310	Blue	30.0	205m	Chro.
Turner, Tom	UnP	192 1 x	378 1 x		30	Remington	Lilja	1 deg.	Weaver	. Lb.	LBT	186	BP	Lino-	302	LBT	Varget	Rem	1800
Rock Hill, SC	.	186 0 x			BR	XP 100	22 -- 13	McMillan	36	. Oz.	.	GsChk	N Y	type	310	BlueSft	29.5	7 ½	Est.

IZAAK WALTON LEAGUE of AMERICA --- LEETOWN, WV

Match Director: Scott Lowther — **TECH DATA & SCORES** — **May 3, 2018**

Temperature: **Skies:** **Winds:** **Range Faces: West**

PERSONAL DATA					EQUIPMENT						BULLETS							LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	Scores: 100 Yd. Score / 200 Yd. Score	Grand Aggregate Score	100 Yard 5 Shot Grp. Agg.	Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Pri-mer / No.	Muzz Vel. / Est. Chro.
Lowther, Scott	PRO	182 2 x	369 3 x		308	Savage	Savage	None	Weaver	11 Lb.	LBT	205	BP	Wheel	3005	LBT	imr8208	Fed	1725
Harpers Ferry, WV	.	187 1 x			Win	12	26 -- 12	Savage	36	3 Oz.	200 gb	GsChk	Y Y	Weights	310	Blue	26.7	205m	Chro.
Bottiger, Jerry	HVY	199 7 x	397 15 x		308	Nesika	Krieger	1 deg.	Nightforce	12 Lb.	Accurate	217	L	Lino-	300	Gray's	N 135	Fed	1900
Mifflinburg, PA	.	198 8 x			x 1 1/2	J	23 -- Gain	McMillan	42	4 Oz.	311230E	GsChk	N Y	type	310	# 24	28.5	205m	Est.
Beveridge, Roger	HVY	199 5 x	389 6 x		30	Remington	McMillan	None	Leupold	11 Lb.	Accurate	206	BP	Lino-	302	Orange	imr 3031	CCI	2034
Shepherdstown, WV	.	190 1 x			BR	700	28 -- 10	McMillan	45	0 Oz.	31-220F	GsChk	N N	type	310	Magic	28.0	400	Chro.
Federline, Dave	HVY	191 3 x	375 3 x		30	Remington	Lilja	None	Redfield	12 Lb.	RCBS	183	BP	WW 2	301	Moly	imr 4759	Win	1925
Knoxville, MD	.	184 0 x			BR	40X	19 -- 13	Lee Six	24	11 Oz.	180 SP	GsChk	Y Y	Lino 1	310	Alox	20.1	SR	Est.
Young, Dick	UnR	191 2 x	384 3 x		30	Savage	Shilen	None	Leupold	15 Lb.	Hoch	216	BP	Lino-	Taper	LBT	N 133	Fed	1950
Berkeley Spring, WV	.	193 1 x			BR	Target	26 -- 12	ShrpShotr	45	8 Oz.	Custom	GsChk	N N	type	310	Blue	27.8	205m	Est.
Reyes, Rudy	HNT	184 1 x	371 1 x		308	Remington	Remington	None	Leupold	9 Lb.	LBT	208	L	Lino 1	301	LBT	N 133	Win	1650
Leesburg, VA	.	187 0 x			Win	700	20 -- 12	Remington	36	6 Oz.	310210	GsChk	N N	WW 1	3095	Blue	27.2	LR	Est.

TAMAQUA RIFLE & PISTOL CLUB --- TAMAQUA, PA

Match Director: David Martin — **TECH DATA & SCORES** — **June 3, 2018**

Temperature: 60 **Skies: Overcast w/Light Rain in AM** **Winds: 2 - 5 mph** **Range Faces: South**

PERSONAL DATA					EQUIPMENT						BULLETS							LOADS		
Competitor / Home Town	Class / Breech Seat PBB Only	Scores: 100 Yd. Score / 200 Yd. Score	Grand Aggregate Score	100 Yard 5 Shot Grp. Agg.	Cartridge Designation	Firearm Make / Firearm Model	Barrel Mfg. / Length -- Twist	Throat-ing / Stock Mfg.	Scope Mfg. / Power	Gross Weight of Gun Including Scope	Mould Mfg. / Design No.	Bullet Wt. As Loaded (gr.) / Gas Check	Ladle or Bottom / Heat Trt. & Bump	Bullet Alloy	Nose Dia. / Base Dia.	Bullet Lube	Powder / Charge (gr)	Pri-mer / No.	Muzz Vel. / Est. Chro.
Bottiger, Jerry	HVY	199 7 x	391 9 x	0.742	308	Nesika	Krieger	1 deg.	Nightforce	12 Lb.	Accurate	217	L	Lino-	300	Gray's	N 135	Fed	1900
Mifflinburg, PA	.	192 2 x			x 1 1/2	J	23 -- Gain	McMillan	42	4 Oz.	311230E	GsChk	N Y	type	310	# 24	28.5	205m	Est.
Simon, Buddy	HVY	193 4 x	382 4 x	0.759	30	Hart	.	None	Nightforce	14 Lb.	LBT	192	BP	Lino-	301	Hawkeye	N 133	Fed	.
Walnutport, PA	.	189 0 x			Wasp	1-A	23 -- 13	McMillan	55	0 Oz.	190 Sp	GsChk	N N	type	312	.	29.0	205m	.
Kattell, Gary	HVY	191 3 x	377 4 x	0.767	7.62 mm	Remington	McMillan	Taper	Leupold	13 Lb.	Eagan	170	L	Lino-	302	Gray's	N 133	Win	2200
Afton, NY	.	186 1 x			Kern	700	22 -- 12	McMillan	36	8 Oz.	mx3-30kb	GsChk	N N	type	312	# 24	24.0	LR	Est.
Kranch, David	UnP	182 2 x	360 2 x	1.049	30	Remington	Hart	None	Leupold	65 Lb.	LBT	195	BP	Lino-	301	Hawkeye	N 133	Fed	.
Coplay, PA	.	178 0 x			Wasp	XP 100	23 -- 14	Self	36	0 Oz.	190 Sptz	GsChk	N Y	type	312	.	29.0	205m	.
MILITARY TECH DATA & SCORES																				
Billings, James	MII	171 1 x	312 1 x	5.989	30 - 06	Remington	RA 63	None	Issue	9 Lb.	NOE	192	L	Lino-	300	Pig	2400	Fed	.
Factoryville, PA	.	141 0 x			Sprgfield	03 - A3	24 -- 10	Longo	Iron	0 Oz.	311299	GsChk	N N	type	310	Fat	17.0	210m	.

Military Match Reports

CHARLOTTE RIFLE & PISTOL CLUB, INC. --- CHARLOTTE, NC --- 2018 MILITARY RIFLE REGIONALS

Match Director: Bill Higgins — **Tech Data & Scores** — **DATE: May 3, 2018**

Temp: 61 — Skies: Clear — Winds: SW 9 — Range Faces: North

Competitor		Scores											Equipment			Bullets					Loads	
Name / City	Class	100 Yd	X	100 Yd Agg	X	200 Yd	X	200 Yd Agg	X	Grand Agg	X	Crtrdge	Rifle Mk / Model	Scope / Power	Mould / Design	Wgt	Alloy / Ladl/Btm	Nose / Base	Bullet / Lube	Powder / Charge	Prmr / No.	M/ V / E/C
Jim Billings	Mod Scp	95	1	192	6	92	1	187	4	379	10	30-06	Rem	Burris	Accurate	190	Lino		Pig	2400	Fed	
Factoryville, PA		97	5			95	3						03-A3	6	311299		Ladle	.310	Fat	17.5	215M	
Charles Bedi	Mod Scp	88	1	166	1	82	1	166	3	332	4	30-06	Rem	Weaver	NOE	186	Lino/WW	.303	ALOX	2400	Fed	1500
Rock Hill, SC		78	0			84	2						03-A1	3x5	311188F		Btm	.311		16.0	210M	E
HL Yarborough	Mod Scp	94	1	167	2	78	0	152	0	319	2	30-06	Rem	Nikon	LBT	180	Lino		LBT	4227	Fed	1600
Rock Hill, SC		73	1			74	0						03-A1	4-16	180		Btm	.310	Blue	19.5	210.0	E
Billy Crosby	Issue	95	3	179	3	92	2	179	2	358	5	30-06	Rem		Accurate	185	WW		LBT	2400	Fed	1720
Rock Hill, SC		84	0			87	0						03-A3				Btm	.310	Blue	16.0	210.0	E
Bill Higgins	Issue	91	0	178	3	82	1	172	2	350	5	30-06	Rem		NOE	180	Lino		LBT	4227	Fed	1752
Indian Trail, NC		87	3			90	1						03-A3		311188F		Btm	.311	Blue	20.0/22.0	210M	C
Charles Kish	Mod Iron	95	1	189	3	91	1	185	4	374	7	30-06	SC		Lyman	204	Range	.302	ALOX	H2400	Fed	1500
Charlotte, NC		94	2			94	3						03A3		311299		Btm	.310		17.0	210M	E
Barry Waits	Mod Iron	91	0	183	1	90	1	189	5	372	6	30-06	Eddystone		NOE	209	Range		ALOX	AL2400	Rem	1200??
Waxhaw, NC		92	1			99	4						1917		312299		Btm	.311		17.0		E
Dave Martin	Mod Iron	84	0	167	0	81	0	154	0	321	0	30-06	Springfield		NEI	190	Range	.301	LBT	IMR 2227	Fed	1800
Orwigsburg, PA		83	0			73	0						03A3				Btm	.310	Blue	20.0	210M	E

Match Director: Bill Higgins — **10 SHOT GROUPS** — **May 3, 2018**

Temp: 61 — Skies: Clear — Wind : SW 9 — Range Faces:N

Competitor		Scores					Equipment			Bullets				Loads		
Name / Home Town	Class	100 10grp		200Yd 10grp		Grand Agg	Crtrdge / Mod	file	Scope / Power	Wgt	Alloy / Ladl/Btm	Nose / Base	Bullet / Lube	Powder / Charge	Prmr / No.	M / V / E / C
Billy Crosby	Issue	3.028	4	5.612	3	3.4840	Same									
Rock Hill SC		4.289		7.626												
Bill Higgins	Issue	4.047	4	9.545	4	4.2804	as									
Indian Trail NC		4.555		7.494												
Jim Billings	Mod Scp	3.278	3	5.894	3	2.8991	Score									
Factoryville PA		2.329		6.085												
Charlie Bedi	Mod Scp	4.877	5	8.306	4	4.6190	Tech									
Rock Hill SC		5.870		7.152												
HL Yarborough	Mod Scp	3.607	4	7.774	DNF	DNF	Data									
Rock Hill SC		4.955		DNF												
Barry Waits	Mod Iron	4.205	3	7.764	3	3.0154										
Waxhaw NC		2.455		3.039												
Charles Kish	Mod Iron	2.211	2	8.063	4	3.0625										
Charlotte NC		2.637		6.741												
Dave Martin	Mod Iron	4.559	4	9.180	DNF	DNF										
Orwigsburg PA		3.373		DNF												

Dakota Benchrest, Sioux Falls, SD

Match Director: John Carlson — **Tech Data & Scores** — **DATE: 5-12-18**

Temp: 50 - 55 — Skies: Cloudy — Winds: E 5 - 10 — Range Faces: South

Competitor			Scores													Equipment			Bullets					Loads	
Name / City	Class	100 Yd	X	100 Yd	X	100 Yd Agg	X	200 Yd	X	200 Yd	X	200 Yd Agg	X	Grand Agg	X	Crtrdge	Rifle Mk / Model	Scope / Power	Mould / Design	Wgt	Alloy / Ladl/Btm	Nose / Base	Bullet / Lube	Powder / Charge	Prmr / No.	M/ V / E/C
Jim Eckman	Issue	89	1	97	3	186	4	89	1	86	1	175	2	361	6	30-06	rem		saeco	175	#2	.300	WL	5744		
Cavour, SD																	03 a3		315		Btm	.311	2500	18.7		
Jim Eckman	Issue	81	3	97	2	178	5	90	1	91	2	181	3	359	8	30-06	rem		saeco	175	#2	.303	Lee	Red		
Cavour, SD																	03 a3		315		Btm	.311		12.0		
Tom Knabel	Issue	92	2	77	1	169	3	78	1	87	1	165	2	334	5	30-06	M-1		Lyman	205	#2	0.301	Lee	2400	CCI	1550
Tea, SD																			314299		Btm	0.311		17.2	200	E
Allen Eckman	Mod Iron	90	0	84	1	174	1	94	3	88	2	182	5	356	6	30-06	Spr		saeco	175	#2	.300	WL	5744		
Cavour, SD																	1903		315		Btm	.311	2500	18.7		
John Carlson	Mod Iron	90	2	91	2	181	4	89	0	80	1	169	1	350	5	30.06	Rem		NOE	192	BHN 16	T	WL	2400	CCI	1520
Lennox, SD																	03A3		311188		Btm	.311	2500	16.7	250	C
Allen Eckman	Mod Iron	90	0	84	0	174	0	74	1	80	1	154	1	328	2	30-06	Spr		saeco	175	#2	.300	WL	Red		
Cavour, SD																	1903		315		Btm	.311	2500	12.0		
Bob Haufschild	Mod Scope	100	3	99	6	199	9	97	2	94	2	191	4	390	13	30.06	SC	Leupold	Lyman	206	#2	.3025	LBT	4759	CCI	1550
Arlington, SD																	03A3	6	314299		Btm	.312	Blu	19	250	E
John Carlson	Mod Scope	86	0	95	4	181	4	94	2	94	1	188	3	369	7	30-06	S-C	Sightron	NOE	207	BHN 16	.3015	WL	2400	CCI	1530
Lennox, SD																	03-A3	4-16	311202		Btm	.311	2500	18.0	250	C
Mark Moncreif	Mod Scope	82	0	79	0	181	0	21	0	21	0	42	0	202	0	7.62x 54R	Mosin Nagant	BSA	Lyman	206	WW	.302	LS	5744	Fed	1450
Sioux Falls, SD																		4-16	314299		Btm	.314	Lube	18.5	LR	E

Clark Rifles Brush Prairie, WA

Match Director: Lee Alexander **Wednesday, May 02, 2018**

Tempature: 39 Wind 0-5 SSE Range faces: East

Name / Home town	Class	100 Yard	X	100 Agg	X	200 Yard	X	200 Agg	X	Grand Agg	X	Cartridge	Make / Model	Scope / Power	Mould / Design	Wgt gr	Alloy / Ldl / Btm	Lead / Base	Lube	Powder / Charge (gr)	Prmr / No.	M / V / E / C
Virgil W Edwards	Mod	100	3	200	7	96	2	194	4	394	11	.30-'06	Springfield	Nikon	Hoch	170	lino/lead mix	0.302	LBT	SR 4759	CCI	1600
Sandy, OR	Scp	100	4			98	2						1903-A3	6x	311 168		ladle	0.310	Blue	21.0	250	Est
Bud Lawry	Mod	97	3	196	8	97	4	197	7	393	15	.30-'06	Springfield	Weaver	Lyman	205	1/2 Scp /1/2 mono	0.302		AA 410020.5	CCI	1650
Camas, WA	Scp	99	5			100	3						1903-A3	6x	311299		ladle	0.311	Alox	20.0	250	Est
Mike Boynton	Mod	99	3	197	9	96	2	194	6	391	15	.30-'06	Winchester	Weaver	NCE	195	50/50 lino-lead	0.302	Tamarack	4759	Rem	1400
Vancouver,WA	Scp	98	6			98	4						P-17	T6	312299		bottom	0.310		19.8	9 1/2	Est
Bill Anderson	Mod	98	3	196	8	98	5	194	12	390	20	.30-'06	Springfield	Bushnell	Hoch	183	1/2ww / 1/2 lino	0.298	K&M	AL2400	CCI	1550
Camas, WA	Scp	98	5			96	7						1903-A3	4x12	311-180 RN		ladle	0.309		17.0	300	Est
Doug Shellenberger	Mod	97	3	195	6	97	5	194	10	389	16	7.62x54R	Sky	Vortex	Schauf	204	75/25 lino-scrap	0.301	LBT	AL2400	Rem	1620
Puyallup, WA	Scp	98	3			97	5						M39	4x12	Taper		ladle	0.311	Blue	18.5	9 1/2	Est
Lee Alexander	Mod	96	5	196	10	97	2	191	4	387	14	.30-'06	Springfield	Mueller	RCBS	185	75/25 Scrap/Lino 2%tin	0.302	Jakes	H110	Win	1570
Vancouver,WA	Scp	100	5			94	2						1903-A3	6x18	30/180 SP		ladle	0.311	Green	20.4	WLR	Est
Mike Henniger	Mod	90	3	181	3	85	1	168	1	349	4	.30-'06	Winchester	Leupold	NOE	195	lino	0.302		AL2400	Win	1450
Portland , OR	Scp	91	0			83	0						P-17	6x	311299		bottom	0.310	SPG	18.0	WLR	Est
Tim Hayes	Mod	83	1	168	2	77	0	167	0	335	2	.30-'06	Springfield	Weaver	Lyman	200	W-W scrap	0.299	Lyman	2400	Rem	1700
Ridgefield, WA	Scp	85	1			90	0						1903-A3	4x	311299		ladle	0.311	Ideal	17.5	9 1/2	Est

Paul Bunyan R & S Club CBA Military Rifle May 12, '18
Entries 11

Name	Class	M 1 100 Yd 10 Shot Gr	M 2 100 Yd 10 Shot Gr	M3 100 Yd 10 Shot Agg	M4 200 Yd 10 Shot Gr	M5 200 Yd 10 Shot Gr	M6 200 Yd 10 Shot Agg	M7 Grand Agg 10 Shot Gr
Mitch o	ISS	2.584	3.024	2.8040	6.120	4.201	5.1605	5.3843
Al Richardson	ISS	3.747	3.880	3.8135	7.118	12.063	9.5905	8.6088
Ben Locicero o	ISS	4.508	6.375	5.4415	8.750	8.096	8.4230	9.6530
				0.0000			0.0000	0.0000
John Schauf	MI	2.305	1.636	1.9705	3.978	6.690	5.3340	4.6375
Steve Conner	MI	1.795	3.378	2.5865	5.449	9.964	7.7065	6.4398
Ron Bingham	MI	2.767	2.281	2.5240	4.435	5.506	4.9705	5.0093
				0.0000			0.0000	0.0000
Alice Gardner	MS	5.445	2.668	4.0565	7.500	5.165	6.3325	7.2228
Mike Henninger	MS	3.263	3.174	3.2185	6.668	9.782	8.2250	7.3310
Ron Heilman	MS	2.176	1.328	1.7520	2.528	2.451	2.4895	2.9968
Bill Anderson	MS	1.502	2.226	1.8640	3.015	5.515	4.2650	3.9965
Anna Banana Lynn	MS	2.058	1.133	1.5955	7.118	3.642	5.3800	4.2855
Doug Shellenberger	MS	1.981	1.858	1.9195	4.130	1.856	2.9930	3.4160
				0.0000			0.0000	0.0000

Range Faces North Wx: Temp - 55˚F -> 70˚F Wind - From SSW at 3 -> 10 mph

CHARLOTTE RIFLE & PISTOL CLUB, INC. --- CHARLOTTE, NC

Match Director: Bill Higgins **Tech Data & Scores** **DATE:** **June 12, 2018**

Temp: 67 Skies: Partly Cloudy Winds: E 3-5 Range Faces: North

Competitor		Scores											Equipment			Bullets						Loads	
Name / City	Class	100 Yd	X	100 Yd Agg	X	200 Yd	X	200 Yd Agg	X	Grand Agg	X	Crtrdge	Rifle Mk / Model	Scope / Power	Mould / Design	Wgt	Alloy / Ladl/Btm	Nose / Base	Bullet / Lube	Powder / Charge	Prmr / No.	M/ V / E/C
Ray Stora	Mod Iron	95	1	192	5	94	0	188	2	380	7	30-06	Sprg		NOE	209	Range	.303	LBT	2400	Fed	1525
Matthews, NC		97	4			94	2						1903		314299		ladl	.311	Blue	17.0	210M	C
Bill Higgins	Issue	94	3	179	3	91	4	172	4	351	7	30-06	Rem		NOE	180	Lino	.301	LBT	4227	Fed	1752
Indian Trail, NC		85	0			81	0						03-A3		311188F		Btm	.311	Blue	22.0	210M	C
Tom Turner	Issue	80	0	162	1	89	0	173	1	335	2	30-06	Rem		NOE	191	Lino	.301	LBT	2400	Win	1450
Rock Hill, SC		82	1			84	1						03-A3		312299		Btm	.311	Blue	17.0	LR	E
Charles Bedi	Issue	88	0	170	0	75	0	163	3	333	3	30-40	Sprg		NOE	196	ww/lino	.303	ALOX	2400	CCI	1400
Rock Hill, SC		82	0			88	3						1898 Krag		311299		Btm	.311		13.6	200.0	E
Barry Waits	Issue	82	1	160	1	84	0	150	1	310	2	30-40	Sprg		Lyman	209	Range	.301	ALOX	2400	Rem	1200
Waxhaw, NC		78	0			66	1						1898 Krag		311299		Btm	.311		16.3	LR	E

POSTAL MATCH NEWS

This issue of *The Fouling Shot* includes the 2018 match results for Matches #3 (Winter Military BR) #4 (Spring Ice-Breaker BR), #5 (Spring Warm-Up BR), #6 (May Season BR, and #7 (May Season Military BR).

By the time you read this, the season matches will have only one month left to be fired but there is still time to enter some of the fall postal matches.

I would like to remind those ordering targets to please make sure you send all orders for targets to me at the address listed below and to include if you are using scope or iron sights in those matches that have an option for sights. Sending orders to the scorers only delays your receipt of the targets.

Enjoy the postal season and good shooting, Mike

2018 POSTAL MATCH SCHEDULE

#1 WINTER BENCHREST, group/score/ scope sights, due 1 March
#2 WINTER OFFHAND, score, scope or iron sights, due 1 March
#3 WINTER MILITARY BR, group, issue sights, due 1 April
#4 SPRING ICEBREAKER BR (first-time entrants only), score, scope sights, $4.00, due 1 May
#5 SPRING WARM-UP BR, group & score, scope sights, due 1 May
#6 SEASON BENCHREST, group/score, scope sights, due 1 May, June, July, August
#6a SEASON PISTOL BR, group/score, scope or iron sights, due 1 May, June, July, August
#7 SEASON MILITARY BR, group/score, sights**, due 1 May, June, July, August
#8 MILITARY CARBINE BR, group/score, sights**, due 1 August,
#9 SEASON OFFHAND, rifle/pistol, scope or iron sights, due 15 May, June, July, August
#10 MILITARY BIG-BORE BR, group, issue iron sights, due 1 December
#11 MILITARY OFFHAND, score, sights**, due 15 July
#12 LITTLE-BORE BR, group, scope sights, due 15 August
#13 SINGLE-SHOT, score off-hand and benchrest group / score: scope or iron sights, due 1 September
#14 MID-BORE BR, group, scope sights, due 1 September
#15 BIG-BORE BR, group, scope or iron sights, due 15 September
#16 LEVER/PUMP/AUTO BR, group/score, scope or iron sights, due 15 October
#17 DEER HUNTER, rifle/pistol, score, scope or iron sights, due 1 December, targets $4.50
#18 200-YARD COMBINED, group & score, scope sights, due 1 November, targets $3.50
#19 200-YARD MILITARY BR, score, sights**, $4.00, due 1 October
#20 ANTIQUE MILITARY BR, group, issue iron sights, $4.00, due 15 November
#21 TIMED FIRE HANDGUN, score, offhand, fixed sights, 50 feet, due 15 July

** Sights for these matches are: (1)Issue (2)Modified Iron (3)Modified Scope. Unless otherwise stated, each set of group targets costs $4.00, score $3.50. For full match details, ask for free copy of our Postal Match Guide.

PLEASE BE SURE TO SPECIFY GROUP OR SCORE AND SIGHTS USED WHEN ORDERING MAKE ALL CHECKS PAYABLE TO "CBA POSTAL MATCH" & MAIL TO:

Mike Kastning
Postal Match Director
PO Box 744
Elk Point SD 57025

Match #3, WINTER MILITARY BENCHREST, 1 APRIL 2018

Competitor home state	Score or Group ***** Award	Equipment: Cart-ridge des-igna-tion	Rifle make ***** Model	Bbl mfg ***** Length & twist	Stock mfr	Scope mfr ***** Power	Total wgt rifle and scope lb/oz	Bullets: Mould mfr ***** Design no.	Wgt ready to load (gr.)	Alloy ***** Heat treat ***** Bmpd	Diam nose ***** Diam base	Lube	Use ladl or btm pour	Load: Powder ***** Charge (gr)	Pri-mer ***** No.	Muzz vel ***** est/ chro
ISSUE:																
Tom Davis	3.143	30-06		Springfield			9/08	Lyman	171	ww	0.305	Tamarak	btm	IMR4759	Win	1530
Pennsylvania	$5.00		M1	24 10				311413		N N	0.312			15.5	LP	Chro
Charlie Huebner	3.419	30-06		US Remington			8/8	NOE	205	Scrap	0.300	JPW	ladl	IMR4198	Win	1600
Florida	$4.00		03-A3	24 10				314299		N N	0.311	Alox		21.5	LR	est
Other Scores:	Joe Richards, 3.732" ; Jon Welda, 6.541"; Ron Talbott, 6.669"															
Smallest Group	Tom Davis, 2.074"															

Match #6, SEASON BENCHREST, 1 May 2018

Competitor home state	Score or Group ***** Award	Equipment: Cart-ridge des-igna-tion	Rifle make ***** Model	Bbl mfg ***** Length & twist	Stock mfr	Scope mfr ***** Power	Total wgt rifle and scope lb/oz	Bullets: Mould mfr ***** Design no.	Wgt ready to load (gr.)	Alloy ***** Heat treat ***** Bmpd	Diam nose ***** Diam base	Lube	Use ladl or btm pour	Load: Powder ***** Charge (gr)	Pri-mer ***** No.	Muzz vel ***** est/ chro
Hunting Rifle/Group:																
David Pape Sr.	1.569	223	Tikka	Tikka	Tikka	Weaver	7/12	NOE	78	BHN14	0.220	Hi Tek	btm	RL 7	CCI	1400
Virginia	$4.50	Rem		21 8		6-24x		227-80SP		N N	0.225	Pcoat		9	450	chro
Other Scores:	Brian Poole, 2.011; Ron Talbott, 2.156															
Production/Group:																
Don Kost	1.216	308		Savage		Tasco	11/12	RCBS	165	lino	0.301	Orange	ladl	IMR4198	Win	1850
Pennsylvania	$5.50	Win	12BVSS	26 12		36X		165SIL		N N	0.309	Magic		25.5	WLR	est
Ben Seaman	1.299	308		Remington		Weaver	10/12	Lyman	182	lino	0.302	Grays	ladl	Varget	Win	1900
Pennsylvania	$5.00	Win	VLS	24 12		36X		314299		N N	0.310			29	WLR	est
Daniel Hisle	1.514	6.5		Ruger		Weaver	11/8	NOE	165	ww	0.255	Alox	ladl	A2400	Win	
Tennesee	$4.00	C Moore	Hawk I VT	28 8		36X		268-140FN		N N	0.264			13	WLR	est
Other Scores:	David Pape Sr, 1.598; Bill Urquhart, 1.648; Frank Leamon, 1.989; Mike Stekley, 2.247; Stan Dantzler, 2.412															
Heavy/Group:																
Ron Haralson	1.273	30-30	ERA	Smith	Self	BSA	13/13	Lee	160	ww-tin	0.308	Can Tire	ladl	H110	Fed	1900
British Columbia	$5.00	P14	Enfield	22 Gain		8-32x		C312155		N N	0.311	Moly		19	210M	est
Other Scores:	John Hughes, 2.121															
Break Action Rifle/Group																
John Jeffries	1.650	6BR	TC	Bergarg		Weaver	11/6	NOE	70.5	lino	0.240	emmert	ladl	N133	Fed	1600
West Virginia	$4.50		Encore	24 10		36x		245-75		N N	0.245			14	205	chro
Other Scores:	Dave Federline 1.976															
Hunting Rifle/Score:																
David Pape Sr.	81 - 0x	223	Tikka	Tikka	Tikka	Weaver	7/12	NOE	78	BHN14	0.220	Hi Tek	btm	RL 7	CCI	1400
British Columbia	$4.50	Rem		21 8		6-24x		227-80SP		N N	0.225	Pcoat		9	450	chro
Other Scores:	Brian Poole, 74 - 0x; Pat Weaver, 66 - 0x															
Production/Score:																
Don Kost	97-2x	308		Remington		Tasco	11/12	RCBS	165	lino	0.301	Orange	ladl	IMR4198	Win	1850
Pennsylvania	$5.50	Win	12BVSS	26 12		36X		165SIL		N N	0.309	Magic		25.5	WLR	est
Ben Seaman	97-2x	308		Remington		Weaver	10/12	EAGAN	182	lino	0.302	Grays	ladl	N135	Fed	1900
Pennsylvania	$4.50	Win	VLS	24 12		36X		RBR		N N	0.310			30	210	est
David Pape Sr	92-0x	308		Savage		BSA	11/9	NOE	78	14.3	0.220	Hi tek	btm	IMR4198	CCI	1700
Kansas	$4.00	Win	112	26 9		24-Jun		227-80SP		N N	0.226	Pcoat		11	450	chro
Other Scores:	Stan Dantzler, 88 - 1x; Mike Steakley, 88 - 0x; Bill Urquhart, 86 - 0x; Daniel Hisle, 85 - 0x; Frank Leamon, 79 - 1x															
Heavy/Score:																
John Hughes	88 - 0x	308		Remington	Richards	Burris	9/5	Accurate	192	L#2	0.301	2500+	btm	IMR4895	CCI	1900
Tennesee	Certificate	Win	700	20 12		4.5-14		31-190H		N N	0.309			32.5	200	est
Other Scores:	None															
Break Open Rifle Score																
John Jeffries	94 - 3x	6BR	TC	Bergarg		Weaver	11/6	NOE	70.5	lino	0.240	emmert	ladl	N133	Fed	1600
West Virginia	$4.50		Encore	24 10		36x		245-75		N N	0.245			14	205	chro
Other Scores:	Dave Federline 82 - 0x															
Small Groups:	Hunting: Hunter: Poole, 0.85"; Prod: Hisle, 0.726"; Hvy: Hughes, 0.816"; Break Open Rifle: Jeffries, 1.038"															

MATCH #4, SPRING ICE-BREAKER, 1 MAY 2018

Competitor home state	Score or Group ***** Award	Equipment: Cart-ridge des-igna-tion	Rifle make ***** Model	Bbl mfg ***** Length & twist	Stock mfr	Scope mfr ***** Power	Total wgt rifle and scope lb/oz	Bullets: Mould mfr ***** Design no.	Wgt ready to load (gr.)	Alloy ***** Heat treat ***** Bmpd	Diam nose ***** Diam base	Lube	Use ladl or btm pour	Load: Powder ***** Charge (gr)	Pri-mer ***** No.	Muzz vel ***** est/ chro
HUNTING RIFLE:																
Burnell McClellen	143 - 0x	30 -06	Federal Ord			BSA	7/8	Lee	200	Lino-pb	0.300	Lee	Ladl	IMR4198	Win	1400
Nebraska	Certificate		98 Mauser	21.5 10	Richards	6 - 24x		90370		N N	0.309	Lalox		17.4	WLR	est
Other Scores:	None															
PRODUCUCTION RIFLE:																
Sharon Hisle	188 - 3x	6.5	Ruger	Ruger		Vortex	11/15	NOE	140	ww	0.255	ALOX	Ladl	Al 2400	WIN	
Tennessee	$4.50	Creedmre	Hawkeye	28 8	Ruger	6 - 24x		268-140FN		N N	0.264			13	WLR	est
Other Scores:	Travis Morrison, 108 - 0x															

Match #7, SEASON MILITARY BR, 1 May 2018

Competitor home state	Score or Group ***** Award	Equipment: Cart-ridge des-igna-tion	Rifle make ***** Model	Bbl mfg ***** Length & twist	Stock mfr	Scope mfr ***** Power	Total wgt rifle and scope lb/oz	Bullets: Mould mfr ***** Design no.	Wgt ready to load (gr.)	Alloy ***** Heat treat ***** Bmpd	Diam nose ***** Diam base	Lube	Use ladl or btm pour	Load: Powder ***** Charge (gr)	Pri-mer ***** No.	Muzz vel ***** est/ chro
Issue/Group:																
Charlie Huebner	2.653	30 - 06		US Remington			8/8	NOE	205	Scrap	0.301	JPW	ladl	IMR4198	Win	1650
Florida	$5.00		03-A3	24 10				314299		N N	0.311	Alox		21.5	LR	est
Leonard Thornton	3.759	7.62x54R		Mosin				Acurate	200	ww2%		Car	btm	H4198	Win	1850
Alabama	$4.00		91/30					31-200R		N N	0.314	Red		22	LR	est
Other Scores:	Ron Talbott, 4.489; Burnell McClellen, 5.339															
Mod Iron/Group:																
John Jeffries	1.917	7.5x55		Schmidt-Rubin			9/11	Saeco	186	Lino		Emmert	ladl	H4198	Fed	1600
Washington	Cert	Swiss	K31	26 10				301		N N	0.310			23	210	est
Other Scores:	None															
Mod Scope/Group:																
Charlie Huebner	1.917	7.62x54R		Finn		NC Star	10/4	NOE	205	scrap	0.301	JPW	ladl	IMR4759	Win	1625
Florida	Cert		M39	27 10		6x		314299		N N	0.311	Alox		19.5	LR	est
Other Scores:	None															
Issue/Score:																
Leonard Thornton	82 - 0x	7.62x54R		Mosin				Acurate	200	ww2%		Car	btm	H4198	Win	1850
Alabama	Cert		91/30					31-200R		N N	0.314	Red		22	LR	est
Other Scores:	None															
Mod Iron/Score:																
John Jeffries	97 - 2x	7.5x55		Schmidt-Rubin			9/11	Saeco	186	Lino		Emmert	ladl	H4198	Fed	1600
Washington	$4.50	Swiss	K31	26 10				301		N N	0.310			23	210	est
Other Scores:	William Gifford, 82 - 1x															
Mod Scope/Score:																
Andrew Sedivy	93 - 0x	30 -06		Springfield			8/8	NOE	180	HB	Taper	Blue	ladl	CFE BLK	CCI	1500
Iowa	$4.50	Swiss	1903-A3	24 10				311-188FN		N N	0.311	Angel		17	250	est
Other Scores:	Jon Welda, 73 - 0x															

Smallest individual groups: Issue:Thornton, 1.651"; Mod Iron: Jeffries, 1.478" ; Mod Scope: Huebner, 0.853"

MATCH #5, SPRING WARM-UP, 1 MAY 2018

Competitor home state		Equipment:						Bullets:						Load:		
	Score or Group ***** Award	Cart-ridge des-igna-tion	Rifle make ***** Model	Bbl mfg ***** Length & twist	Stock mfr	Scope mfr ***** Power	Total wgt rifle and scope lb/oz	Mould mfr ***** Design no.	Wgt ready to load (gr.)	Alloy ***** Heat treat ***** Bmpd	Diam nose ***** Diam base	Lube	Use ladl or btm pour	Powder ***** Charge (gr)	Pri-mer ***** No.	Muzz vel ***** est/ chro
HUNTING RIFLE:																
David Pape Sr.	89.133	223	Tikka	Tikka	Tikka	Weaver	7/12	NOE	78	BHN14	0.220	Hi Tek	btm	RL 7	CCI	1400
Kansas	$4.50	Remington		21 8		6-24x		227-80SP		N N	0.225	Pcoat		9	450	chro
Other Scores:	Kevin Muir, 84.293; Brian Poole, 78.805															
PRODUCTION:																
Sharon Hisle	90.587	6-Jan		Ruger		Weaver	11/7	NOE	140	ww	0.255	Alox	ladl	A2400	Win	
Tennesee	$5.00	Cmoore	Hawk I VT	28 8		T36		268-140FN		N N	0.264			13	WLR	est
David Pape Sr	86.784-0x	223	Savage			BSA	11/9	NOE	78	BHN14	0.220	Hi Tek	btm	IMR4198	CCI	1700
Kansas	$4.00	Remington	12	26 9		6-24x		227-80SP		N N	0.226	Pcoat		11	450	chro
Other Scores:	Bill Urquhart, 86.161; Joe Richards, 65.303; leondard Thornton 60.609															

Small Group: Hunt Rif: Pape, 0.837"; Prod: Hisle, 0.770"

Attention CBA Members:
Your articles are needed and appreciated. You can submit articles on disk, by email, typewritten or hand written. Send articles to:
The Cast Bullet Association
6465 Parfet St.
Arvada, CO 80004-2736
grlatham@comcast.net

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To insure delivery of your Fouling Shot, send address changes to:
David Reiss
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Santa Fe, Texas 77517
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The Cast Bullet Association, Inc.

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THE CAST BULLET ASSOCIATION'S NATURE AND PURPOSE

The Cast Bullet Association is an organization of shooters who enjoy shooting cast lead bullets in rifles and handguns for competition, hunting, or informal target shooting. The Association's central purpose is to help shooters enjoy cast bullet shooting by:

• Stimulating and encouraging experiments in casting and handloading cast bullets that will improve the design, accuracy and effectiveness of the ammunition and increase the satisfaction and enjoyment of shooters.

• Provide well-regulated shooting competition programs including postal matches that can be shot on the shooter's home range, for those who would like to test their loading and shooting skills against others.

• Publishing an official journal, The Fouling Shot, to serve as a forum for the exchange of ideas, to report on the results of experiments, experiences, and competitions with cast bullets; and to report all affairs of the Association to the membership.

• Conducting the Associations affairs in a manner which presents a favorable impression of the private ownership of firearms to the general public and to otherwise support the citizen's right to keep and bear arms.

MEMBERSHIP APPLICATION

I hereby apply for membership in The Cast Bullet Association, Inc. I agree to promote the objectives of the association and will fulfill the obligations of good sportsmanship and good citizenship.

All fields are required

Personal Signature _____

New Member [ ] Renewal [ ] CBA Membership #:_____ NRA Member [ ] Yes [ ] No

Please Print: Name:_____

Address: _____

City, State, Zip: _____

Phone _____ E-Mail:_____

Will you be shooting in CBA matches? _____

How did you learn about the CBA? (for new members)_____

Go to www.castbulletassoc.org/cba-store to join today!

or

Mail application, with dues payable to:
The Cast Bullet Assoc., Inc.
to:
David Reiss, 4206 S Elm Ave, Santa Fe, Texas 77517, chefreiss@ gmail.com

Foreign checks and bank drafts must be payable by banks in the USA. Canadian postal money orders payable in US funds are acceptable.

Annual dues schedule below includes six issues of The Fouling Shot per year.

[ ] **Email Fouling Shot any country**: $17 one year, $32 two years, $75 for five years
[ ] **Hard copy Fouling Shot USA**: $22 one year, $42 two years, $105 for five years
[ ] **Hard copy Fouling Shot Canada**: $30 one year, $58 two years
[ ] **Hard copy Fouling Shot all other foreign**: $50 one year, $90 two years