



The Picket Post

The Central Virginia Civil War Collectors Association

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Meeting Time & Date

Our meeting location is the American Legion Hall at 2522 Indale Road in Glen Allen and our meeting date is the fourth Tuesday of each month at 7:15 pm.

Our upcoming meeting is June 24, 2014 and Ron Rigney will give a PowerPoint presentation on *Hut Digging in Culpeper and at Berkeley Plantation* and will show some of his incredible finds! Please bring items that you have found in huts and trash pits.

Monthly Meeting

Relic of the Month –



John Billeter – Riker of bullets and a Steel & Johnson Eagle C. Congrats to John for taking Relic of the Month!



Dave Garnett dug this possible Mississippi Rifle lock plate.

This Month's Presentation

Is this a cannonball?

That's the question Pete George, who gave this month's presentation, *The History of Artillery*, says he gets most often! So, a lot of Pete's time at relic shows is spent with

calipers checking metal balls. Pete is an educator and wants to bring people in contact with the actual historical record. As such, he often queries those bringing him items for identification with such questions as, "According to the 1860 census records, what percentage of southerners do you think owned slaves?" 50-80% is the typical answer. The real answer is slightly under 6%!

So, Pete does a lot of authentication of mystery balls. Precision measurements of weight and diameter are critical. Got a question? Send it to Pete on Treasurenet.com. He's "the cannonball guy!" The "What is it" section on Treasurenet.com is Pete's recommendation for ID of mystery items. Solid Shot Essentials is posted by Pete there. Diameter is crucial for proper firing with no slap on the way out. Balls were sized prior to approval. But diameters are not nice, even fractions. Most are oddball, such as 3.56, 4.62, 5.72 due to their being cast by weight and not by size. The 32-pounder is 6.25 fortuitously. Civilwarartillery.com/shottables.htm will take you to the size charts. Measurements are to the 100th of an inch and are the same for US and CS. Precise measurements must be done with a precision measuring tool. Need digital calipers? Pete got his for \$20 at Harbor Freight. You can also use a special diameter tape and wrap around the equator to measure balls too large for a caliper. These read to 64ths of an inch. To do this, measure the fattest part on the equator. Cannonballs are not lumpy/bumpy. The slight mold seam is about it. There are no flat spots, no flat belts or ground down areas as on modern shot put balls. In the CW era, they used chisels.

Some balls, if having bubbles in the casting, can be lighter than specified, but none can be heavier. Steel is approximately 10% heavier than a cast iron ball and was not used. Steel signifies a modern ball bearing. The ordnance manual specified a cast iron, but the exception is that the British did manufacture some 10-inch steel balls for use against ironclads. The CS imported some, but they were either captured by the blockade or otherwise never used.

You cannot rely on bathroom scales. Instead, use a postal scale to 0.1 ounce. And use a jewelers scale for bullets.

So, just how do we distinguish an artillery shell from a civilian metal ball? The number one example of metal balls found are mill balls used in tumbler mills to grind and pulverize rock for gravel or to make the pieces small enough for extraction of ore. And they are still in use today. Ball bearings can be over a foot in diameter, but are steel. Sports

shot put balls are also found and mistaken for cannon balls. Pete's large "solid shot" is an exactly 16 pound shot-put ball! Some even have a hole in them filled with lead to adjust the weight to exactly 16 pounds and some use a screw-in plug for fairness. And there are ornamental ironwork balls, such as gate weights. And monuments that originally used original balls now often use repro copies of balls! And, believe it or not, cement delivery trucks use iron balls to break off crusted concrete from the inside and rotate just as a tumbler mill.

Pete noted that steel is more resistant to rust pitting. Pitting of CW cast iron is caused by micro-bubbles in the surface.



Pete showed these exceptional condition solid shot "cannonballs." Then we learned that the one on the left is a shot-put ball and the other a steel ball bearing!

The History of Artillery. The Chinese first invented cannons and gunpowder, but it was the Europeans who put them to military use. The first guns were metal staves and were very unwieldy. Even as cannons developed and evolved into cast metal tubes, they were ponderously heavy. Black powder is a low-yield explosive. Casting flaws were a terrible problem and highly likely to burst from overloading. Almost all were muzzleloaders. The earliest balls were made significantly smaller than the bore diameter and the balls were wrapped in canvas to prevent the blast from going around. Sometimes smoldering remnants of wadding would remain and the next load of powder ignited. Not good.

Many times people ask if they have a stone cannon ball. Surprisingly, very early ones, ca. 1200-1300 AD, were stone, but it took a huge amount of labor to make a stone round and casting of balls was found to be more practical. The leftover balls were used to for the new sport of curling.

The earliest cast were solid shot and hollow ones came about in the 1400s. How was the fuse lit? Initially, the actually fuse was lit before loading, but this quickly gave way to a time fuse. The artillerist eventually learned how long it takes to go how far in how many seconds and he can cut the fuse accordingly. The fuse must always face away from the inside of the barrel and is lit by the blast.

Impact shells came about much later. A French fort in Caribbean was bombarded with impact shells in the 1500s. Impact shells in America first came about in the Civil War.

Movies where the blast goes off upon impact is historically inaccurate prior to the Civil War and is done for actor protection. Now movies have perfected fake air bursts.

The shells had to be extremely thick into the Civil War era. The caliber and pounder designation began based on the weight of a solid shot of the same size. If the weight was the same, the size was also. Metal casting had improved by CW to allow a closer fit into the bore. They kept the bore the same and made the ball only a tiny amount smaller.

But what about the strength of the cannons themselves? Cast iron is strong, but brittle, so it can fracture. Brass and bronze were preferred because they have small amount of elasticity that can better withstand the blast pressure. Air bubbles cast inside the metal during the process do not show on the outside and could cause fracturing. So, much testing was done prior to commissioning.

Colonial era – 1492 through the American Revolution. Cannons through 1830s were long and thick, which made them heavy and difficult to haul around. "Light" was added onto cannon names to distinguish, for instance, an earlier, heavier 12-pounder from the later, lighter one of brass. The CS had more problems with bad castings and bursting cannons than the Union.

Rifling for cannons was developed in the late 1830s-early 1840s. Rifling is a series of spiraling grooves cut into the barrel of the cannon to provide a stabilizing gyroscopic spin for the shell that stabilizes the travel – just as a quarterback throwing a football. But how could they get the projectile to catch the rifling? For muzzle loading, the projectile has to be smaller than the bore and must expand on its way out. Smoothbores fire only balls, grapeshot or canister. This is why we see so many different shells in the Civil War in an ongoing attempt to best catch the rifling.

When breechloaders were made, this first allowed a projectile slightly larger than the barrel to be used and the problem was solved. One of the most famous examples is the Whitworth with a shell with a hexagonal spiral that matched the barrel. The CS used a lot of Whitworth breechloaders, but had so much trouble that they ended up locking the breech and using them as muzzle loaders!

Most muzzleloaders were retired worldwide after the Civil War, but naval and seacoast defense ships actually used Parrot Rifles and 15-inchers through the end of the 1800s. Because of this, some of what turns up in the Civil War market is actually post-war. For example, a lot of Watervleit items are 1880-90 era.

Diggers who find shell fragments often ask Pete if it's likely it killed anyone. It is estimated that only 10-15% of Civil War casualties were caused by artillery. Most fragments are 2-4 inches. When true high explosives were developed, the blast would shatter them into fingernail size fragments. Since a projectile travels at 600 mph, which is faster than the speed of the blast, the pieces do not tend to spread out significantly. Pete has found 156 shells in his digging career!

“Displays – This month members brought and discussed the following items from their collections, with emphasis on artillery items.

Afterward, Pete offered his expert comments on each of the artillery items members brought for display.



Steve Schmit dug his first shell right out of HS in Summer of 1967. His dad asked him what he wanted for graduation and Steve wanted a relic hunting trip in the valley through the area of Jackson's campaign – just like your kids. This is Steve's first and only relic that day with his Metrotech. Steve first thought it was a nose from a Hotchkiss, but it turned out to be a CS Archer. Pete noted that most Archers are solid shot. The shell is much more rare.



Ran displayed this Brittan shell from Mine Run that Pete deactivated for him. Ran debated electrolysis, but the issue is the brass fuse and lead sabot. Pete says to keep the waterline a quarter inch below where you don't want the electrolysis to work.



Dyer shell dug with the broken-off tip of an Austrian Lorenz bayonet stuck in the fuse where someone tried to use it to unscrew the fuse! The broken bayonet was dug with the shell.



Late war CS Read shell. The poor quality of the iron toward the end of the war led to portions flaking off during firing some of which landed in the CS troop area ahead of the cannons! It also uses a wooden fuse due to the scarcity of copper.



Lloyd Pugh dug this six-pound Bormann in 1956 during the cutting of I-95 through Petersburg. Lloyd used a WW2 metal detector at the time. He has the Bormann set up as it would look for loading. His Bormann fuse punch is above. Pete noted the slightly scimitar shape for blade and brass holder. The Bormann time fuse was sealed under a thin layer of sheet zinc and the punch was used to punch the fuse at the selected time. The flat edge on the fuse punch handle was so it wouldn't roll off the limber chest. Some fuses had Braille dots for night firing.



David Garnett procured this Shenkl shell from a gentleman whose house the shell probably struck!



Ben Greenbaum showed this rare 1847 Grimsley Saddle. Three were used on horses with artillery drivers and three off horses with valises. Ben also brought this 1863 artillery headstall with intertwined USA.



Private purchase buckle & stud spurs with leather.



US Model 1859 spur with replaced rowel. It has No. 1 in the middle and possibly PSM&C Co. around the edge. Can anyone identify what this came off of?



CVCWCA Caps & Patches!

Thanks to David Garnett for taking the initiative to do a new run of CVCWCA caps and patches. These have the club logo as shown on the upper left of this page, which David personally designed. \$17.00 for hats with patches sewn on. \$5.00 for patches alone. Contact David at 746-4668.

CVCWCA on Facebook!

Thanks to Robyn Bradshaw, our club treasurer for taking the initiative to create a Facebook page for the club. Visit us today, search for CVCWCA and become a friend!

Upcoming CVCWCA Programs

Ideas Wanted – David Garnett requests that members submit ideas for upcoming programs. If anyone wants to give a presentation, please also let David know.

July 22 – Roland Frodigh. *Relic Restoration*

Aug 26 – Craig Bell. *VA Manufactured Arms & Weapons*

Sept 23 – *Club Mini Relic Show*, an annual favorite

Oct 28 – *Club Annual Meeting at the MOC*, hosted by Robert Hancock

(MISSING MONTHS ARE TBA,
EXCEPT DEC. WHEN THERE IS NO MEETING)

President	Jack Mountcastle, 789-9818
Vice Pres./Show	Allen Lane, 928-1006
Vice Pres./Programs	David Garnett, 746-4668
Secretary	Bob Baird, 798-5555
Treasurer	Robyn Bradshaw, 339-0469

Upcoming Shows & Events

Remember, before traveling any distance to attend a show, be sure to call and verify the dates and time!

June 28-29, 2014 Gettysburg Civil War Show held at the Allstar Events Complex Eisenhower Inn Gettysburg. Contact 717-334-2350

July 2, 2014 Book talk, "Living Hell: The Dark Side of the Civil War," at the Museum of the Confederacy in Richmond. Noon. Free with museum admission. moc.org

July 5, 2014 Walking tour, "Battle of Smithfield," meets at the Isle of Wight Museum in Smithfield. 2 pm. Free. historicismleofwight.com

July 5, 2014 Guided walking tour of Fort Huger, 15080 Talcott Terrace, on the James River near Smithfield. 10 am. Free. 757-357-0115

July 6, 2014 Lectures, "Fur and Feathers in the Fight: Civil War Mascots," at the Petersburg National Battlefield visitor center. 11 am and 2 pm. Free with park admission. nps.gov/pete

July 9, 2014 Talk, "Early's Threat to Washington," at the Museum of the Confederacy in Appomattox. 12:15 pm. Free with museum admission. moc.org

July 11, 2014 "Spies, Family Fun Day," at the "In the Cause of Liberty," with talks and living history at the Museum of the Confederacy in Richmond. 10 am-4 pm.. Free with museum admission. moc.org

July 12, 2014 Van tour, "Howlett Line," guided tour of the Confederate defenses at Bermuda Hundred south of Richmond. Leaves from Henricus Historical Park. 10 am-2 pm. \$15. Register: chesterfieldhistory.com (click Civil War Tours).

July 13, 2014 "Meet the Curator," focus on a special item at the "In the Cause of Liberty," exhibit at the Civil War Center at Tredegar in Richmond. 1 pm. Free with museum admission. tredegar.org

July 18, 2014 Talk, "Recollections of the Battle of the Crater," at the Museum of the Confederacy in Richmond. Noon. Free with museum admission. moc.org

July 19, 2014 Walking tour, "Hazards on the Homefront," visiting prison and other downtown Richmond sites. Meets at the Museum of the Confederacy. \$15. Registration required: 855-649-1861 extension 121.

July 19-20, 2014 The National Civil War Show and Antique Arms Show held at RIR Complex Richmond Va. Contact Steve Sylvia 540-672-4845.

July 20, 2014 Lecture, "The Siege of Petersburg: The Stories the Cemeteries Tell," at the Petersburg National Battlefield visitor center. 11 am and 2 pm. Free with park admission. nps.gov/pete

July 22, 2014 Lecture, "Appomattox: Victory, Defeat, and Freedom at the End of the Civil War," at the Virginia State Library, 800 E Broad St, Richmond. Noon. Free. lva.virginia.gov

July 30, 2014 Anniversary programs, ranger tours, "The Battle of the Crater," at the Petersburg National Battlefield. Program at time of the blast (5:30-6:15 am), keynote speech at 10 am, special anniversary tours 7-9 am and 1-3 pm. Free with park admission. Walking tour at nearby Blandford Church 7-8:30 pm (free). nps.gov/pete

(Thanks to Dennis Madison for the
Calendar of Events for this month's newsletter!)

CVCWCA Newsletter

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