

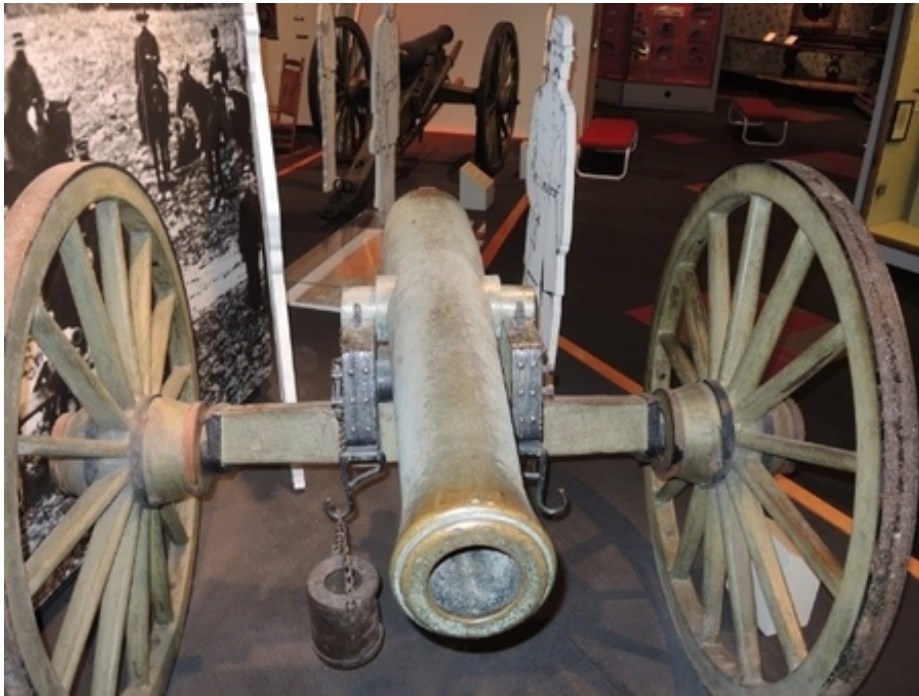
MuniRem Enables Safe Removal of Projectile from Civil War Cannon

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Nobody seems to know for certain how long the Napoleon 12-pounder Civil War Cannon had been placed outside the Tennessee State Capitol before being taken into the state museum (TSM). Neither is it clear exactly when it was actually taken into the shades and warmth of the Museum building, after the rain and shine during its days outside. Even less certain are the circumstances that led to the cannon ball lodged inside the cannon.

What is certain is that this 12-pounder bronze smooth-bore Napoleon cannon was used in Nathan Bedford Forrest's Cavalry and was given to Tennessee by Forrest's artillery chief John W. Morton. While the appetite for civil war artifacts amongst many Americans has remained high, thereby making the cannon itself an important part of the Civil War collection, the uncertainty and therefore the constant worry about the safety of such old weapons is never in doubt.

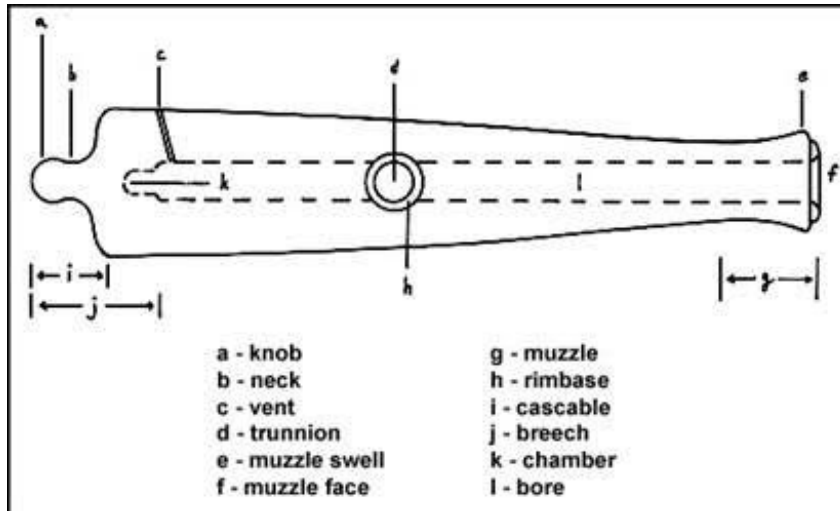


The Napoleon 12-pounder Civil War Cannon will become a center piece in the Tennessee State Museum currently undergoing renovation and scheduled to open its door to the public in 2018.

After the discovery of the cannon ball lodged in the cannon, the TSM needed to seek expert help for better clarity on what could possibly be an explosives laden and consequently dangerous civil war era cannon in the comfort of the new museum. The alternative was for the TSM to lose this important wartime artifact meant to quench the thirst of the knowledge seeking posterity.

This dilemma could best be resolved by safely taking out the cannonball from the rust ridden bore in

a non-destructive manner that would preserve the sanctity of the weapon and preserve it for posterity. Enter MuniRem" Solution!



As a projectile, the cannonball would normally be forced out of the bore by the force of the ignited energetics, most likely black powder, lodged in the cavity (Point K of above diagram) at the bottom of the barrel. The inability to ignite the black powder to force the projectile out in a controlled environment necessitated two important steps.

One was to use a chemical that would neutralize the black powder propellant so that the cannonball could be accessed within the chamber for safe extraction. The second was to fight the rust that had accumulated over time on and around the cannonball itself as well as on the walls of the bore, following the rain and shine from the time outside the state Capitol to the warmth of the museum.

The customized application of MuniRem" solution was designed to accomplish both roles, and more, given the TSM desires.

For MuniRem Environmental's UXO team to apply the above procedure in order to render the cannon safe, the cannon was removed from its original carriage (See image) and placed on a temporary mount. The temporary mount would also hold the heavy weapon steady during transportation to a safe site, constructed such that even if there was an explosion it would be contained.

In order to clean the rust from the walls of the bore, the cannon was tipped for the solution of MuniRem reagent to be poured in from the nose of the barrel. Some MuniRem solution was also inserted through the vent (see diagram attached) to neutralize the black powder inside the chamber at point K, behind the cannonball. The application of the MuniRem solution ensured that there was no undue damage to the smooth bronze bore during the extraction process. Neither was the cannonball itself harmed as it needed to undergo surface treatment to correct the patina and make it suitable for display.



As shown in the picture provided, the cannonball was extracted using proprietary techniques in conjunction with the MuniRem Solution. The next steps will constitute the cleaning and polishing of the cannonball as well as the cannon itself by the Conservationist for display as a central piece when the museum reopens.

After much fear and uncertainty about the safety of the much admired 12-pounder Napoleon cannon, MuniRem reagent has once again proven to be that evasive solution.

About MuniRem Environmental, LLC

MuniRem Environmental, LLC is a small disadvantaged business out of Duluth, GA., that provides solutions for safe chemical neutralization and destruction of energetics to non-hazardous end-products. They can be reached via their website (www.munirem.com), by email (info@munirem.com), or by phone (706-316-3525).