



# CANNON RESEARCH PROJECTS

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## NEWSLETTER No. 11 - JULY 2004

A free service to the muzzle loading enthusiast

### WHY CANNONS ?

People often express amazement at my enthusiasm for cannons, "Why in heavens name do you spend your time on rusty old cannons"? "You do what"? " Ha Ha Ha, no really! What do you really do for a living"? And so forth. Then the same individual bores me to death about his moth collection, accumulation of lollipop sticks or the high cost of therapy for his pet rock!

I guess it is a case of taking a deep enough interest in whatever tickles your fancy.

In the front of our book we state that our intention was, and still is, to locate, record, identify, prevent the loss of, recover where appropriate, mount and display in a public place as many ML guns as we can. We can now report that our enthusiasm for cannons was infectious and that, the more people have learned about them, the more interest was taken in their preservation, and guns are being repaired and mounted all around the country.

The Voortrekker Monument in Pretoria now has a well mounted 6 pdr gunade which they fire at Fort Schanskop; The 6 pdr Dutch gun on Paarl Rock has been proofed and is fired on Heritage Day every year; Coppoolse and Finlayson have a working 8 pdr near Stellenbosch; Muizenberg has a firing 4 pdr and Grahamstown; Port Elizabeth and Fort Beaufort are still busy with their guns.

I believe that we have made, and are still making good progress with our goals.

### FIELD TRIP - APRIL - MAY 2004

Thanks to a sponsorship from Sentinel Wines near Stellenbosch, I completed a ten day, 4,100km trip to Philippolis, Bloemfontein, Johannesburg, Pretoria, Brits, Middelburg, Belfast, Bethel and Standerton to record and identify cannon. The trip was intended to include areas of Northern Natal, but time and family matters dictated otherwise.

I recorded six small cannon in the Cultural Museum in the old mint in Pretoria and six larger guns outside under the lean to. The most interesting of the large guns is a 30 pounder SBML cast at Stafsjo in Sweden in c.1780 (now Durr 843). The 30 Pdr calibre was not as common as the 24 or 36 pdr.

Jan van den Bos of the Cultural Museum also showed me the ammunition collection. Among the muzzle loader ammo were two 13 inch mortar shells and one 8 inch shell plus fragments of another, Whitworth twisted shells and studded 7 and 9 pdr shells. Most interesting among the solid spherical shot were a few which appear to be made of wrought iron as opposed to the normal cast iron. There are clear folds in the metal and the entire surface shows faint hammer marks. This type of shot was made by the early settlers, who also made shot from pieces of iron covered in lead. Whoever made this shot was a skilled craftsman.

One of the guns recorded on the trip is the famed "Bezuidenhout" cannon (Now Durr 794) which is preserved as a National Monument at a school in Belfast. The gun is an iron 1½ pdr weighing 83kg. Bezuidenhout removed the gun from a British position in Durban in 1842 and carried it on his shoulder back to the Boer camp. It was during this conflict that Dick King made his epic ride from Durban to Grahamstown to request reinforcements.

After the conflict Bezuidenhout refused to return the gun to the British Forces.

Another interesting piece (Durr 837) stands in the foyer of the Magistrates Offices in Standerton. This piece, identical to Durr 835 at Sentinel Wines, represents the evolution from smooth bore to rifled gun, from muzzle loader to breech loader, from bronze to steel guns and from bagged charge to cartridge case. It is made of bronze, but rifled. It is breech loading, but without a cartridge and it was still fired through a vent on the top of the chamber. The story of these guns will be in the next issue.

## **MORE GUNS PROOF FIRED**

I visited Port Elizabeth, Grahamstown and Fort Beaufort in early June. I recorded four more guns which brings the total recorded to 851 thus far. The purpose of the trip was to proof fire two 7 pdr RMLs in PE and a bronze howitzer and a ½ pdr iron gun in Fort Beaufort. This brings the total of proofed and now functional guns to 21. There are now also three more gunners, one in PE and two in Grahamstown, who have successfully completed the course for ML gunners.

## **PISTOL IGNITION**

Having suffered a few embarrassing misfires recently, and having to wait for several minutes among a restless crowd before the gun was deemed safe to approach, my thoughts turned to the Gun Igniting Pistol. These items are rare and almost impossible to obtain. The possibility of making one did cross my mind, until I imagined myself trying to explain to the licensing authorities why I needed a licence for such a strange contraption.

Necessity being a close relative of improvisation, I turned to my .38 S&W revolver. I pulled the bullets from a few rounds and began to experiment, using more and more black powder, not the nitro powder that came out of the casing, but pukker gunpowder. I did find that the coarser grained gunpowder gave a better flame than the fine powder.

The first test left a black smudge on the workshop wall. The second, accompanied by an 80mm flame, a larger smudge. The next eight shots were directed at short vent tubes which I improvised in a bucket of sand. In each case the unprimed vent tube was instantly ignited by the flame.

I found that a .38 S&W casing needed to be half full of gunpowder to be effective. The powder was held in place with a small wad of tissue paper stamped into the case with a wooden dowel.

The muzzle of the pistol was held about 40mm from the vent opening and at an angle of 45 degrees to avoid the vent flash.

IMPORTANT Remember that you can load only one of these cartridges into a revolver at a time or there is a danger of the flame setting off adjacent cartridges from the front, as was the case with the old cap and ball revolvers.

No! I thought of it before I carried out the trials!

## **TACTICAL USE OF A MORTAR C.1780**

The mortar was used mainly in siege situations to bombard the fixed positions of the enemy, or it was used as a defensive weapon to defend one's own fixed position. The time required to prepare a horizontal platform upon which to place the mortar bed, and the requirement to prepare shells fuzeed for specific ranges, and propellant charges for those ranges made it difficult to use all but the smallest mortars as mobile weapons which could move with, and in support of a manoeuvring army on the battlefield.

The 13 inch mortar shells which were apparently deployed to Muizenberg weighed 71,5 kg empty and 73,4 kg when filled with gunpowder. A full propellant charge of 3,2 kg of powder would hurl the shell a distance of 1200 metres, a time of flight of about 18 seconds.

The wooden fuze fitted to the shell had to be adjusted prior to loading to ensure that the shell exploded as near as possible to the predicted time of flight, which was naturally shorter for the shorter ranges. This adjustment of fuze time was done by cutting the inner end of the fuze to a specified length before inserting and driving it into the hole in the shell, a time consuming process.

The mortar was permanently set to an elevation of 45 degrees and the distance that the shell was to travel was adjusted by using varied charges of propellant powder. A successful explosion among the enemy thus depended upon the appropriate propellant charge for that range, and a correctly adjusted fuze to ensure an explosion at the instant that the shell landed.

Prior to the middle of the 18<sup>th</sup> century the firing procedure was complex and hazardous in the extreme. Two linstocks were used to fire the larger mortars, one to ignite the fuze on the shell and the other to fire the mortar. The results of a misfire by the mortar after the fuze had been ignited must have been interesting. In c.1770 the English learned that, if no wadding was used in the mortar, sufficient flame bypassed the shell in the bore to ignite the fuze head. Some trials and modifications were carried out to improve the sensitivity of the fuze head, and this then became the standard drill. The Dutch and

French continued using two linstocks for several years after the English had perfected the automatic ignition from the propellant charge.

Alternative tactics were possible with well trained crews. When the area of land between the gun and the enemy was fairly hard and flat they had the option of bouncing the shell into the enemy position. This had an added psychological effect as the shell could be observed in flight and the bouncing, rolling shell would explode on or close to the surface, ensuring maximum effect.

When the terrain was very sandy a shell often buried itself sufficiently for the surrounding sand to deflect most of the blast and fragments upwards, thus reducing the lethal effect. Experienced crews would shorten the time of the fuze to give an air burst above the target area, a result which was much more effective both in lethal and psychological terms than that of a partially buried shell.

When attacking the enemy trenches or powder stores, it was common practice to leave the fuze slightly longer than normal. This ensured that the shell had time to penetrate the structure before exploding.

In a siege situation the gunners had the time to fire a few trial shots and thereby determine the correct propellant charge for a fixed range, similarly they could determine the appropriate fuze length for the required time of flight.

In a defensive position, when the enemy was advancing on your position and the range was constantly changing, the range and time requirements were not as easily determined, and the settings on a loaded mortar, once adjusted could not be altered in the time available.

In a defensive scenario it was common practice to determine three or four "killing" ranges, open areas where the advancing enemy would have minimal cover and pieces of the exploding shell would not be deflected by obstructions. Four or five shells then had fuzes cut and inserted for each of the selected ranges. The prepared shells were marked with chalk or arranged in such a manner that a shell appropriate to the required range could be rapidly selected. Similarly, propellant charges were prepared in bags for each of the selected ranges and these were also marked or arranged in a recognisable manner.

The Dutch probably made these same preparations at Muizenberg in 1795, but the English never gave them the chance to put the theory to the test when they bombarded the Dutch defences from seaward. The mortar was of no use against the ships, and the mortar crew were forced to retreat long before the invading land forces could be engaged.

## **CHAVONNES BATTERY**

Cedric Galliet and Accomplices at Chavonnes Battery in the Clock Tower Precinct of the V&A Waterfront, Cape Town are planning special events on Heritage Day in September. They are planning additional activities, guided tours and more on that day. All historians that have visited the battery have been impressed by the preservation and interpretation of the battery. It is a rainy winter - the battery is indoors and the subject is unique. Go and take a look.

You can contact Cedric at the battery on 021 416 6230.

## **SPONSORSHIP**

This newsletter was sponsored by Jack Seale of the Hartbeespoort Museum, Zoo and Snake Park West of Pretoria. I learned that Jack had added two more guns (839 & 840) to his excellent collection on display. His private military museum has developed magnificently and is well worth a visit when in the area. Newsletter number 10 was sent to 314 first time readers and who knows how many get them passed on via e-mail and photo copies, something which I welcome.