BARRAGE

The RCA Museum News

THE RCA MUSEUM
CANADA'S NATIONAL ARTILLERY MUSEUM
LE MUSÉE NATIONAL DE L'ARTILLERIE DU CANADA
LE MUSÉE DE L'ARC

June 2017

Opening of In the Footsteps of Vimy

I would like to thank everyone that came to our official opening of In the Footsteps of Vimy on April 7th, 2017. The picture to the right is from the official ribbon cutting of In the Footsteps of Vimy. Honored guests included from the left: our current MP for Brandon – Souris, The Honorable Larry Maguire; Board of Director's Chairman, Honorary Colonel Rick Felstead; Special Envoy for Military Affairs & MLA for St. Norbert, Mr. Jon Reyes; and CFB Shilo Base Commander, Lieutenant-Colonel John Cochrane.

Our M101 Storage and Maintenance Facility

Our museum is fortunate to have a large storage, maintenance and restoration facility that is separate from the main museum. At the RCA Museum we can only display a small portion of our collection and many unique items, such as guns and vehicles, need to be stored off-site. M101, which is next to base headquarters, houses the majority of the larger pieces in our collection that are not displayed on the museum grounds or in the museum.

M101 notably operates as an automobile and gun restoration and repair workshop specializing in Canadian military artifacts. We employ a heavy-duty mechanic that is responsible for the care of the vehicles and guns. The majority of our restoration and repair work is completed in-house. In our shop, we try to strike a balance between repairing vehicles to an authentic condition and preserving historical artifacts. We try our best to ensure that our museum examples are historically accurate while preserving original details and materials.

Our museum is privileged to have more than a dozen running military vehicles used for parades and outreach events. Maintaining our collection is no easy task. Many of the parts we need come from the military or we purchase them on the private market. To see more of our collection please check out our website under Artifacts.

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Website: rcamuseum.com
Facebook: The RCA Museum

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Royal Manitoba Winter Fair

I would personally like to thank all our volunteers who gave their time to man our display during the Royal Manitoba Winter Fair. We were fortunate this year to be asked back to participate from March 27th to April 1st. We manned a 50 foot display for the week and brought along two artillery pieces and two vehicles.

We included a prototype Canadian Bantam Anti-Aircraft gun that was manufactured and developed in 1944. The gun could be towed by a Jeep or larger truck and was originally intended for jungle warfare. The second gun was the L5 105mm Pack which was first produced in 1956. It was adopted by Canada in 1969 as a modern, light-weight howitzer which could be transported in parts and carried by mule-packs, or behind Jeeps, in M113's, or by helicopter.

We included the M113 Armoured Personnel Carrier (APC) designed to transport soldiers and equipment cross-country or for amphibious operations. They were originally purchased in the 1960s and have received upgrades to the present day. We also included a Jeep or Utility Truck M38A1CDN2. The original M38CDN were purchased in 1951 and 1952 and the CDN2 remained in service until 1986.

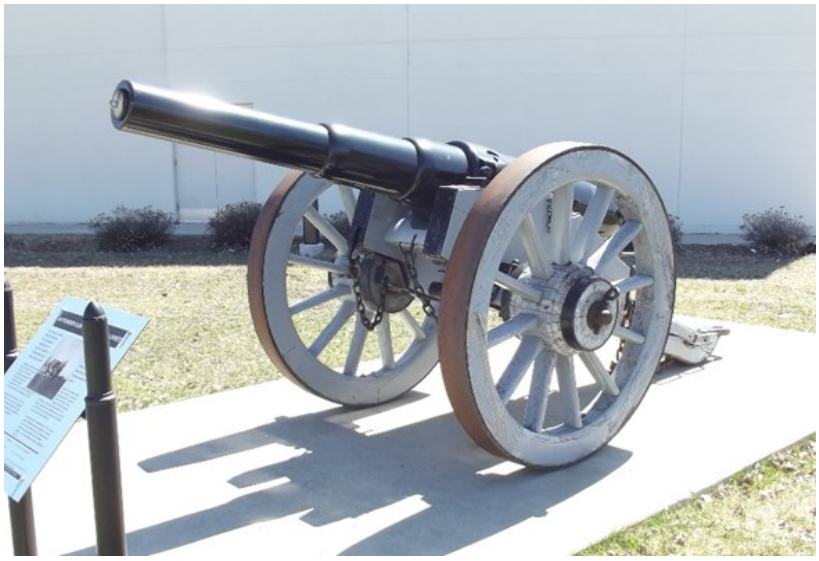
We opened the back of the M113 and made it interactive for children and adults. Thousands saw our display and over one thousand entered our M113 APC, with the majority climbing the hatch and going behind a de-activated 50 caliber machine gun. We had great support for this display with 54 volunteer hours from civilians and military personnel.

Armstrong Guns

Walking through the RCA Museum, the first breech loaded artillery on display is the 12 Pounder BL, adopted into service by the British Royal Field Artillery in 1885 and used during the Boer War (1899-1902). However, the first breech loaded artillery was invented in 1846, and the British started issuing breech loaded artillery in the late 1850s, used operationally during the Second Opium War (1856-1860). The Armstrong rifled breech loaded guns (RBL) were manufactured from 1855 to 1864. The British Army and Royal Navy purchased over 3,400 Armstrong guns in six variants including: the 6 pounder, 9 pounder, 12 pounder, 20 pounder, 40 pounder and 7 inch.

During the mid-1800s, artillery innovations were in step with small arms advancements. In 1849, the French developed a rapid loading muzzle rifle called the Minié rifle, which used a soft lead bullet with a hollow base. When fired the base of the bullet expanded, engaging the rifling and providing spin and accuracy. In 1852, the British adopted the Enfield Pattern 1851 Minié rifle that greatly improved the range and accuracy of the infantry. Before this time, smoothbore muskets had an effective range of 100 to 200 yards, the new Enfield Pattern 1851s, and subsequent Enfield Pattern 1853s - used extensively during the Crimean War (1854-56) - had effective ranges in excess of 500 yards, and could hit targets at twice this distance.

Before the W. G. Armstrong guns came on the scene, cannons were cast from a variety of metals including bronze, cast iron, wrought iron, and steel. Armstrong determined that cast iron was too weak and brittle to construct a breach loading gun. He favored wrought iron because it could be hammered and forged into any shape and was difficult to melt. It also had good tensile strength at about twice that of cast iron. Armstrong constructed the barrel in layers of wrought iron. Some of the barrels employed a steel inside layer to provide extra hardness and resistance to wear. This provided the proportionate strength to withstand firing.



(Shown above is a 40 Pounder Armstrong Gun)

The Armstrong Guns used a basic vertically sliding breechblock, and a hollow breech screw attached to a crank screw. The breechblock moved vertically in a slot cut in the breech, and upon loading it was lifted completely out to load the projectile and gunpowder charge bag. The barrels of the Armstrong gun were rifled with a uniform twist which proved to be sound in design by distributing stress and reducing wear. The ammunition was revolutionary in design. Iron shells were cast in molds and then machined in a lathe to exact specifications. The outer shell was then coated from the base to shoulder with lead. Upon firing the lead would fill the rifled grooves in the barrel, removing any windage creating a gas tight fit.

The Armstrong guns were a technological improvement, but they were not perfect. The breech mechanism was tricky to operate and required significant training. If care was not taken, propellant gas could leak from the breech, causing bending and cracking of the vent pieces.

Commonly, officers were not on board with the new technology of breach loading. Many officers perceived the gun as very complicated and too difficult to understand for the average gunner. Drill books were designed for muzzle loading weaponry and did not conform to the new technology. Drill books then would need to be rewritten to conform. The new Armstrong guns also cost significantly more than smoothbore guns to produce.

In 1863 an Ordnance Select Committee in England convened to consider the merits of muzzle-loading or breech-loading ordnance. In August 1865, they concluded that muzzle-loaders were far superior to breech-loaders, noting that the breech-loading system was too complicated and expensive in comparison to muzzle-loaders. The simplicity of the smooth bore muzzle loader prevailed for the next fifteen years. However, the committee did affirm that the Armstrong system of barrel construction with layered wrought iron was the safest.

Armstrong technology was widely used during the American Civil War (1861-1865) and demonstrated its superiority over smoothbore muzzle loaders. In 1866, another British committee noted that gunners with breech-loading guns were less exposed to enemy fire while loading, and breech guns were less likely to cause accidents while firing. The British government authorized the construction of muzzle-loading guns using Armstrong's layered construction method.

(Note the unusual breech screw on the 40 pounder RBL.)

W. G. Armstrong stopped production in 1864, and by 1870, many of the guns were converted to muzzle loaders or shipped to the colonies. Canada received a number of Armstrong guns. Canadian Battery's had 6-pounder RBL guns, 12-pounders, 20-pounders and 40-pounders. The RCA Museum has one example of an Armstrong gun. We have a 40 Pounder RBL that was used in Canada from the 1870's to 1900's. The 40 pounder was initially designed for ironclad warships. 819 of these guns were produced. Many were mounted on field carriages for garrison artillery or coastal defense. They were considered inadequate for field use due to problems sealing the breech. The gun had a range of 4,000 yards and used five pounds of gunpowder to fire a 41.2 pound common shell. It could also fire a 64-piece segment shell, or 162 ball shrapnel shell, or 35 to 37 case shot shell, or a practice cast iron shot. By 1906, the 40 pounder was out of service in Canada but remained in service for ceremonial purposes.

Sometimes innovations are not adopted in short order. This is true of the Armstrong guns. They were certainly innovative but not universally accepted. By the late 1860s, the British decided to go back to muzzle-loading artillery and it wasn't until the late 1890s that they reverted to the breech loading weaponry. The Armstrong guns play an important role in the development of artillery. They paved the way for more modern guns such as the 12 Pounder BL. While they were not widely appreciated during their day in the 1860s, they are certainly appreciated with the benefit of hindsight. Our one Armstrong example is located in front of the gym at CFB Shilo.

Museum History

The RCA Museum has a notable past that is interwoven with the history of Shilo. During the Second World War, Camp Shilo experienced phenomenal growth, which included moving the home station of The Royal Regiment of Canadian Artillery to Shilo in 1946. In the 1940s and 1950s, the RCSA (Royal Canadian School of Artillery), which was located in Shilo, managed a large collection of WW1 and WW2 era guns and artifacts.

It wasn't until 1962, with the founding of the Royal Canadian Artillery Museum that RCA artifacts had an official home for display to the public. In our archives, I found pictures from the opening of the first RCA Museum in 1962, listed to the right.

On the left of the picture, Brigadier P.A.S. Todd, the Colonel Commandant of the Royal Regiment of Canadian Artillery, opened the RCA Museum on 26 January 1962. It was located at Building C-2 that does not exist today. To the left is a picture of the front-yard in 1962. On display are two 18 pounder guns with converted Martin-Perry rubber tires.

In 1986, 24 years later, the RCA Museum underwent another significant change. The Museum was expanded and moved to building A-12. I found pictures in our archives of the building and museum exhibits listed below. The picture below is from the grand opening of the RCA Museum in 1986.

This picture above shows a 12 pounder BL on display at the RCA Museum in 1986. We currently have this gun on display in our National Artillery Gallery. This gun was in Canadian service from 1897 to 1911.

In 2001, the Director of the RCA Museum, Rick Sanderson, submitted a proposal to the Base Commander to move the museum to building N-118 which was at the time not being used operationally by the base. Building N-118 was abandoned by the artillery in 1998 when they moved to the new RCHA complex. Of interest, the grounds of N-118 have been used as a gun park since the 1950s. In our collection, I found a picture dated 1965 showing N-118 with the grounds used for the display of artillery artifacts, shown to the right. The same guns are in our museum collection today and some can be found in our gun park.

By March 2003, building N-118 was undergoing extensive renovations. Note the picture below of the inside of N-118, showing a portion of our exhibit and office area under construction. In June 2003, the RCA Museum opened for business at its current location, which now connects the old gun park location with the museum.

To the right is a picture of our museum in March 2017, which is somewhat similar to the picture from 1965. Many of the same guns can be seen today. Externally, the building appears much the same with a few changes, but the inside, with the addition of our expanded museum galleries, is certainly a welcome improvement.

The new museum location certainly has room for growth. From my perspective as Museum Director, it is fascinating to see the progression of the museum over the last fifty plus years. Who knows what the future holds for our museum? No doubt it will continue to grow and develop. One day possibly expanding to a new location on CFB Shilo.

In The Footsteps of Vimy
A Role-Play Experience

Kathleen Christensen

The Vimy exhibit includes a unique feature that the RCA Museum has never tried before, an educational role-play activity. During their guided or self-guided tour of the exhibit, individuals, families and groups are invited or, as in the case of school groups, instructed to choose and don an item of a WW1 soldier's kit, anything from a tunic to a canteen. Then they can select a "buddy" from a group of 12 WW1 soldiers' biographies who were actually at Vimy. These biographies were selected and researched by two public history students, in partnership with Brandon University for use in this role play experience. With the biographies provided on laminated sheets, they can learn about their "buddy's" life prior to enlistment for the Canadian Expeditionary Force and early war experiences if they had any. They can carry these sheets with them until the end of the role-play experience.

The next step in this role play is for the participants to move to the beginning of the large scale map of the Battle Plan of the Canadian First Division at Vimy that was painted on the floor by painters from Base Construction Engineers (CE). The map details were applied by a summer student, Brittany Weber. There the participants are to review the map legend and details, just as Major General Curry's soldiers of the 1st Division would have trained with and provided before the battle. The participants then are to read and follow the Battle Plans that are provided on marked posts in strategic places on the map. These instructions detail the orders that a rifleman within a platoon would have received during training and prior to battle. As they follow these instructions on the map, they are "following in the footsteps" of this Vimy soldier within the brigade of this division, his battalion and company from the jumping off point in the Bentate Tunnel until their final objective of the Commandant's House on the Ridge itself.

Once their objective is taken and the battle is over for the 1st Division, they can look on the board provided at the end of exhibit for the fate of their "buddy" both during the Battle of Vimy Ridge and depending on survival, their fate during the rest of the war and after.

This exercise has proven to be a very popular and powerful experience with school groups and will be improved slightly for individual and family groups who will be encouraged to utilize this "role-play" to enhance their experience of this temporary exhibit, and their visit to The RCA Museum throughout the summer. The exercise will also be available into the fall as part of the Remembrance Day programs at the museum.

If you are out to the museum this summer, we invite you to do the same. The exhibit is scheduled to close November 30th, 2017.

RCA MUSEUM: APPLICATION FOR MEMBERSHIP or RENEWAL

	TYPE	COST	BENEFITS
_____	Individual	$ 30.00 / yr	- Free Admission; - Newsletter; and - Invitations to special events
_____	Family (individual, spouse, children under 18 yrs)	$ 50.00 / yr	- Free Admission; - Newsletter; and - Invitations to special events
_____	Association/ Corporate	$ 300.00 / yr	- Newsletter; - Director's Tour of RCA Museum and collection (max 20 participants); and - Association/corporate members may purchase Museum memberships at half price

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