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

July 2024

Over the Top: Canada and the First World War

Our next temporary exhibit, *Over the Top: Canada and the First World War (1914–1915),* marking the 110th anniversary of the start of WWI, opens on 8 August 2024. We will include a WWI-era artifact featuring the phrase "over the top." The artifact is a well-preserved, 15x17-inch linen, over plywood, embroidered with a depiction of Canadian soldiers on the Western Front.

Soldiers began using the phrase "over the top" during the early stages of trench warfare in 1915. The term refers to when soldiers climbed out of their trenches and exposed themselves to enemy fire as they charged the enemy trench. It was a dangerous manoeuvre because soldiers were highly vulnerable while crossing no man's land, often littered with barbed wire and land mines, and subjected to artillery and machine gun fire.

Our staff have limited knowledge of the provenance of the embroidery, integral to its identity and historical importance. We can only speculate about the artist who made it. We do, however, know it was handmade and crafted with care. The needlework depicts two Canadian soldiers in WWI uniforms. One soldier is holding a rifle, and the other is holding a grenade. The grenade held by the soldier on the left is one of the first officially adopted by the British Army in the early 1900s, a No. 1 Grenade or No. 2 Grenade (Hales pattern).

The soldiers are walking away from a barbed-wire fence with a large Canadian Red Ensign in the background. The Red Ensign, which served as the Canadian flag between 1892 and 1965, symbolizes the close relationship between Great Britain and Canada. During the First World War, this flag often appeared on recruiting posters and photographs of Canadian troops, showing their patriotism.

Despite having limited information about its provenance, the story it tells is poignant. The embroidery commemorates Canadian involvement in WWI and carries a message of patriotism, sacrifice, and determination. It immortalizes the trials of war, honours the spirit of Canadian soldiers, and is a fitting WWI-era title for our next exhibit.

Summer Students in 2024

This summer, we have two returning students working at the museum: Brayden and Graeme. Their presence helps lighten the workload and brings a fresh perspective. The students help with our *Over the Top: Canada and the First World War* exhibit, finding the best artifacts for cases and writing exhibit labels. They also conduct guided tours and assist with artifact accessioning. Their enthusiasm and knowledge make them excellent ambassadors for our museum. I thank Brayden and Graeme for their hard work this summer.

From the left, Graeme holding a Bren Gun Mk 1 and Brayden with a PPSh 41 Submachine Gun in our WW2 Gallery.

Brayden Sutherland

I am excited to work at Shilo's RCA Museum this summer. I can work with old artifacts and help create captivating displays for museum visitors to learn more about history. I am particularly fascinated by the cannons and old muskets in our collection. I grew up in Souris but now live in Brandon, where I attend BU, majoring in history with a minor in religion and philosophy. My favourite historical periods are ancient Mediterranean history and the Renaissance.

After I finish university, I intend to become a teacher and share my passion for history. My hobbies include playing the drums, listening to metal and rock music, reading historical books, and collecting old books. These days, I am reading the Iliad and the oldest book in my collection is an 1893 book on Jewish history. I also enjoy playing historical-themed board games and strategy video games. Additionally, I love playing DND (Dungeons & Dragons) and designing exciting adventures for my friends.

Graeme Chapman

This is my third summer as a research assistant. Working at the museum is the perfect summer job for me, as it aligns with my passion for history and education. My interest in history started in elementary school. I was always intrigued by ancient battles and beliefs, and this interest continued through my history degree, where I focused on early modern sword duels, magic, and religion. Although the Canadian Artillery is outside my usual area of interest, learning about Canada's military history is a welcome change. Currently, I am working towards an education degree.

Working at the museum played a significant role in my decision to pursue a career in education. Teaching students about the history of guns has evolved into a broader passion to teach all kinds of history. Apart from my academic pursuits, I am an avid board gamer. For the last two years, I have organized Dungeons and Dragons games for Student Accessibility Services at Brandon University. Recently, I completed my first year as a venue coordinator for PrairieCon, the longest-running board game convention in Manitoba. I am excited to spend another summer at the Artillery Museum which will help broaden my academic and personal interests.

The Highly Effective No. 56 Time & Percussion Fuse

The RCA Museum has six No. 56 mushroom-shaped time and percussion fuses in the Boer War exhibit circa 1895. Canadians effectively used the No. 56 fuse with shrapnel shells during the Boer War (1899-1902). The introduction of the No. 56 fuse was a significant technological advancement ahead of its time.

"The fuse is the soul [for] any system of explosive projectile." Artillery Notes by Quartermaster Thomas Maxwell, RCA, 1895.

A fuse is the central mechanism responsible for igniting the bursting charge of a shell. The fuse conveys the message to the bursting charge to explode when it reaches the point at which it should explode. The fuse increases the lethality of the shell and maximizes its destructive potential.

The earliest fuses were rudimentary, slow-burning cords from the 14th century. Between 1829 and 1832, the British Artillery standardized time fuses. By 1850, they had 19 variations of time fuses, including 16 wooden models and three metal varieties. While the British Artillery had tested percussion fuses since the 17th century, they did not stock them for general use until 1846.

By the 1890s, Canada stocked four classes of fuses, including percussion, delayed action, time, and combination (T & P). Percussion ignites when it strikes an object. Delayed action hits an object and ignites after a certain period. Time fuses act after the expiration of an interval of time. T & P fuses ignite in the air after a specified time or on impact with a hard surface.

12 Pounder HE Shell with No. 56 Time & Percussion Fuse

During the Boer War, Canada deployed the 12 Pounder Breech Loader (BL) gun, replacing the 9 Pounder Rifled Muzzle Loader (RML). Improvements included an increased muzzle velocity of 1,700 feet per second, compared to 1,400, with an increase in range of about a mile, or 5,000 yards. The 12 Pounder BL included smokeless cordite cartridges with no thick cloud of smoke after firing. The gun also had a lightweight steel carriage for agile field mobility.

The shrapnel shell for the 9 Pounder RML had thick walls and a small payload of bullets that flew out the bottom of the shell backwards. It also used an inaccurate time fuse, undermining the effectiveness of the shell against enemy formations. The 12 Pounder BL shrapnel shell had thin walls and a large payload of bullets that burst from the top with limited loss of momentum, enabling the bullets to disperse in a predicted cone pattern.

The Canadian Artillery purchased the No. 56 fuse and regular percussion fuses in significant quantities for the Boer War. The Canadian Artillery used the No. 56 fuse with shrapnel and high explosive (HE) shells, which exploded in the skies over enemy soldiers or on land. T & P fuses enabled artillery units to adjust their firing capabilities, providing great flexibility when targeting enemy positions.

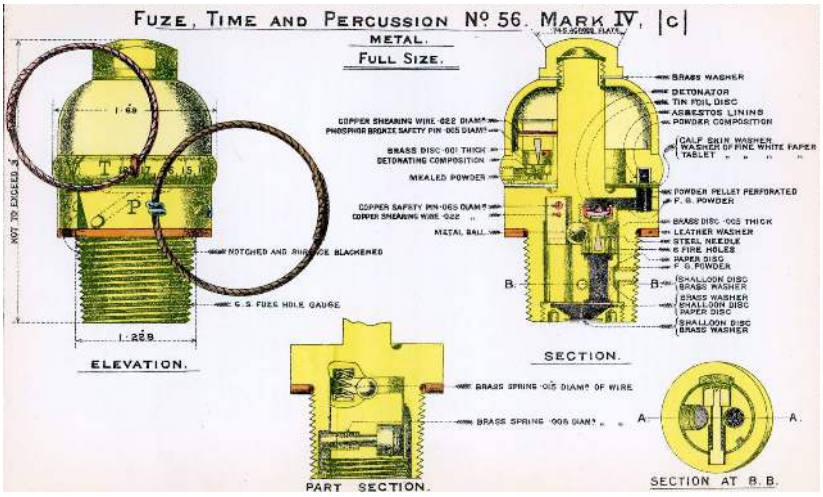

Illustration of No. 56, Mark IV, Time and Percussion Fuse, 1905.

The No. 56 fuse proved highly effective during the Boer War and highlighted the significant role that time & percussion fuses played in warfare. During WW1, the Allies utilized the same technology, including the No. 56 fuse, paired with shrapnel and HE shells in the tens of millions on the Western Front. It was a remarkable technological innovation ahead of its time.

By Andrew Oakden

Bofors 40mm Light Anti-Aircraft Gun

In 1941, Canada acquired the Swedish-designed 40mm Bofors Light Anti-Aircraft (Bofors gun) to replace obsolete WW1 artillery. Deployed for light anti-aircraft defence and as a multipurpose gun against land targets, the Bofors gun earned a reputation for accuracy and reliability. Allies and Axis powers purchased and built versions of the Bofors gun, which saw action in all theatres of war during WW2. Allied war production included over 19,000 units.

The Bofors gun was an autocannon, with a standard rate of fire of 120 rounds per minute, firing a 1.6-inch (40 mm) calibre, 900-gram (2-pound) HE high explosive round. The round included a proximity fuse, designed to detonate when near a target, increasing the probability of hitting low-flying enemy aircraft. The maximum firing ceiling was 23,600 feet (7,200 metres), with an effective range of 12,500 feet (3,800 metres). The Bofors could elevate and fire past 90 degrees and at a low angle of -5 degrees.

LAA in France with Bofors gun, 1944.

My grandfather, Charles Oakden, served with the 4th Light Anti-Aircraft (LAA) Regiment during WW2. The Canadian Army had seven LAA Regiments in Europe, each with 24 Bofors guns and approximately one thousand personnel. Canada raised the 4th LAA Regiment in February 1941, arriving in Essex, England, in September 1941, then receiving 40mm Bofors guns. The 4th LAA Regiment served in a Defence of Britain role from 1941-44 and were known for shooting down 61 enemy planes over a two-month timeframe, a record number for the war. Their motto was "Bring on the Luftwaffe."

For the Allies, the Bofors 40mm gun provided a vital light anti-aircraft function during the Battle of Britain (September 1940 to May 1941) and played a significant anti-aircraft role in defending Britain until the end of WW2. From 1941 to 1945, 40mm Bofors represented more than half of the anti-aircraft guns in Canada for air defence. In the First Canadian Army, two-thirds of the light anti-aircraft guns were 40mm Bofors, self-propelled and towed versions, with the remaining third, 20mm Polsten machine guns mounted on quad trucks.

On D-Day, June 6, 1944, one battery from the 4th LAA Regiment landed on Juno Beach at H plus 7 hours, with most of the regiment arriving on June 12, 1944. The 4th LAA Regiment fought across Northwest Europe, fighting in France from June to September 1944, Belgium from October to November 1944, Holland from November 1944 to February 1945, and Northern Germany from February to VE Day. In addition to their anti-aircraft role, they also served in infantry roles, defending their guns. In October 1944, at the Battle of the Scheldt, they turned their 40mm guns down at buildings and enemy strongpoints, pulverizing targets with 2-pound HE rounds at 120 rounds per minute.

Canadian LAA units helped secure the skies during the Normandy landing. Its direct-fire cartwheel sight and No. 3 Predicter automated sighting system allowed troops to engage enemy aircraft quickly and effectively. After the Normandy Landing, LAA units, such as the 4 LAA, continued to target the Luftwaffe. In 1944-45, across Northwestern Europe, Canadians deployed the Bofors against the low-flying German aircraft and in multipurpose roles against ground targets.

Post-WW2, the Bofors gun had a lasting impact on military doctrine and 20th-century weapon development. Its usage worldwide demonstrated a future need for reliable anti-aircraft defences, leading to more advanced air defence systems. Armies worldwide deployed the Bofors gun in the following notable conflicts: WW2, the Korean War, the Vietnam War, the Falklands War, the Gulf War, and the Yugoslav Wars. In Canada, the Bofors gun remained in service until 1959. A variant of the gun, a Boffin 40mm, returned to service to defend Canadian airfields in Germany from 1970 to 1989.

By Andrew Oakden

Buried Alive: Gunner Ignatius Singleton

Ignatius Singleton joined the Canadian Expeditionary Force (CEF) with his three brothers, Francis, George, and Zeno, in January 1917. The Canadian Militia recruited the four brothers from the Roman Catholic Mission at the Fort William Reserve in Ontario. The brothers hailed from the Ojibway Band on the reserve, established through the Robinson-Superior Treaty in 1850. The four Singleton brothers fought overseas during the First World War. The German Army wounded three brothers in battle, including Ignatius, George, and Zeno, while Francis got through the war "without a scratch."

At the start of the First World War in August 1914, the Indian Act, which governed Indigenous people, limited their autonomy and restricted their ability to participate in Canadian society. Despite these systemic barriers, over 4,000 Indigenous Canadians answered the call to arms, enlisting in the CEF and serving as infantry, snipers, scouts, and in support roles on various fronts; a small number served as Gunners with the Canadian Artillery, including Ignatius Singleton.

Gunner Ignatius Singleton, circa 1918, LAC.

Ignatius Singleton was born in Grand Portage, Minnesota, in the United States, on February 11, 1898. He enlisted at eighteen on January 27, 1917. Ignatius was single, living on the Fort William Reserve, and worked as a teamster (driver) and axman. He was 5 foot 7 1/4 inches tall, with brown eyes and black hair, and listed as fit for service on his military physical. Gunner Ignatius Singleton is in the photo to the right.

Ignatius initially joined the 230th Forestry Battalion, CEF, based out of Ottawa, Ontario, and served with them from January 27 to February 21, 1917. The CEF transferred him to the 15th Canadian Field Ambulance (Queen's Field Ambulance), part of the Canadian Reserve Artillery (CRA). The unit was under the patronage of Queen's University in Kingston, Ontario.

Gunner Singleton departed Canada aboard the Saxonia on March 28, 1917, and landed in England on April 7, 1917. The 15th Canadian Field Ambulance arrived with ten officers and 182 other ranks, part of the 5th Canadian Division. They transferred injured Canadian soldiers to hospitals across southern England and moved essential supplies. Ignatius remained in England with the 15th Field Ambulance at Camp Witley for the remainder of 1917. This was a temporary WW1 army camp on Witley Common in Surrey, England, approximately 40 miles southwest of London.

In late December 1917, the CEF transferred Gunner Singleton to the Depot Pool, Canadian Field Artillery (CFA), 5th Division. Ignatius arrived in France on January 18, 1918, and deployed with the 5th Heavy Trench Mortar Battery on February 2, 1918. The 5th Divisional Artillery operated field howitzers and trench mortars. The CFA required Gunners to work the weapon systems and supply them with ammunition. The battery trained him for two weeks and then sent him to the front-line trenches on February 23, 1918.

The trenches, a defining feature of the battlefield in WW1, were a network of fortified ditches that stretched for miles across the Western Front from the North Sea to the Swiss border. These earthen

passageways served as defensive and offensive positions, where soldiers endured relentless artillery bombardments, machine gun fire, and the constant threat of enemy incursions. On February 28, 1918, after six days at the front, during an enemy bombardment of the trenches, Gunner Singleton was buried alive.

Soldiers on both sides suffered on the battlefield, and one of the most terrifying and gruesome fates was being buried alive. One common occurrence was the collapse of trenches due to heavy artillery fire. A direct hit from an enemy shell could send tons of earth and debris crashing down on the soldiers below. Another situation was tunnelling warfare; a cave-in during tunnelling could leave soldiers trapped underground, gasping for air and praying for rescue. The chances of survival for those buried alive were slim, and those rescued often suffered from severe physical injuries, mental trauma, and haunting memories of the ordeal.

Gunner Singleton was one of the lucky ones. His fellow soldiers dug him out of the earth, and he recovered from unconsciousness at a dressing station. His injuries included a “shell concussion,” a "back flesh" injury, and a leg injury. The CEF shipped Gunner Singleton from France to England on March 5, 1918. He first went to the Northampton War Hospital, Duston, a repurposed asylum (Berry Wood Asylum), which saw 25,000 soldiers pass through the facility during the war. On April 9, 1918, the CEF transferred him to the Northampton General Hospital for further treatment.

Unknown Canadian Soldiers at the front in France, circa 1918.

Regarding his injuries, on April 9, 1918, a doctor said: "There is a dark area in the middle of the back where it was hit. Tender to the touch." Doctors prescribed aspirin for his physical injuries. During WWI, doctors routinely prescribed aspirin to injured Canadian soldiers. It became one of the most prescribed medications during the war. He remained at the Northampton hospitals for ten weeks, until May 17, 1918. It is unknown if enemy artillery fire or an errant shovel blade caused the back injury. Soldiers had to dig Ignatius out of the earth after he was buried alive.

Gunner Singleton recovered from his physical injuries and returned to Camp Witley, UK. Ignatius stayed in England for the remainder of the war, transporting injured Canadian soldiers with the CRA. After the Armistice, he left the UK on December 11, 1918, and returned to Canada in January 1919. In Canada, the 230th Forestry Battalion took him on strength and honourably discharged him one year after he was buried alive on February 28, 1919. He died in London, Ontario, on January 26, 1968.

Gunner Singleton’s story stands as a chilling reminder of the extraordinary sacrifices made by soldiers who endured trench warfare on the Western Front. Additionally, Gunner Singleton, like thousands of other Indigenous soldiers, made an invaluable contribution to the war effort. They enlisted across Canada, served overseas, fought on the battlefront, and faced enemy artillery bombardments, machine gun fire, small arms fire, exposure to gas, and the threat of being buried alive or killed. Their courage and their wartime experiences helped shape and define Canada.

By Andrew Oakden

The John Dick Collection

Artillery museums are not just for weapons; they house artifacts that embody the stories of the past, including cap badges, decorations, service badges and unit patches. In 2022, LCol John Dick, a retired artillery officer, donated thousands of pocket-sized artifacts to the museum. In terms of numbers, it is one of the most significant donations to the museum in decades. I thank LCol Dick for donating this extensive collection of RCA artifacts. Large donations are of immense importance, not just for preserving the artifacts, but also for fostering a deep understanding of military history.

Various Cap Badges, circa 1900s.

Various Pins.

LCol (retd) John B. Dick joined the Canadian Forces in 1968. He served in various artillery units, including airborne, light, and medium. LCol Dick served in Germany and participated in two peacekeeping missions in Cyprus, one of which was during the 1974 war. He spent three years as an instructor and later as the Chief Standards Officer at the Artillery School in Gagetown. Additionally, he held several staff officer positions, including in Ottawa at Headquarters and for the Canadian Defense Liaison Staff in Washington, DC. In 2005, LCol Dick retired from the Canadian Forces.

The John Dick Collection includes 116 Gunner medal sets, mainly rank-and-file soldiers who served over the past 150 years, with the majority serving during WW1 and WW2. LCol Dick painstakingly researched each Gunner, finding newspaper articles, reports, and miscellaneous papers. He completed the requisite paperwork for the service files from Library and Archives Canada and included the genealogy files with the donation. Perhaps most importantly, behind campaign medals lies a story of courage, resilience, and sacrifice.

Most of the collection included buttons, service badges/titles, unit patches, and other items Gunners wore on their military uniforms. Our curators grouped the artifacts in hundreds of batches. Other common artifacts included buckles, cloth crests, collar badges and assorted army insignia. There are hundreds of miscellaneous badges, coins, patches, and tokens. Other notable artifacts include berets, CF caps, cross belts, lanyards, miniature figurines, ties, shell casings, sweatshirts, and t-shirts.

My favourite artifact is a metal tankard inscribed "Canteen, B, RCA," circa 1883 to 1893 - the formative period of the Regiment. The Canadian Militia established the Regiment of Canadian Artillery in 1883 with the initials RCA. The "B" stood for B Battery, out of Quebec City. It's unknown if B Battery sold the cup or used it to distribute rations and sales items. At any rate, it is a rare and unusual artifact that found its way to the museum.

The John Dick Collection provided curators with additional artifacts for temporary and permanent exhibit display. Curators recently incorporated 33 of these military decorations in the Gunner Gallery, adding a short bio for each of the Gunners, representing 40% of the medal sets in the gallery and a significant contribution. LCol Dick helped ensure that these stories were celebrated and remembered.

LCol Dick spent many years putting this collection together, and it will take our curators many more to sort and place each artifact in permanent locations. The John Dick Collection helps us to tell the story of the Canadian Gunner, preserving history, educating the public, and honouring sacrifice. It helps our museum retain and preserve the historical record with tangible links to the past.

By Andrew Oakden

2 SSM (Training) Battery

From 1960 to 1968, 2 SSM Battery trained over 700 soldiers for deployment with 1 SSM Battery in West Germany. In the fall of 1960, the RCA formed both batteries, 1 SSM and 2 SSM, at Camp Picton, Ontario, under the command of Major J. N. Robertson. They trained with the 762-mm MGR-1 Honest John Rocket, a surface-to-surface missile deployed by NATO countries from 1953 to 1985.

A photo of the Honest John Rocket and launcher in Shilo, Manitoba, dated 1967.

A photo of the Honest John Rocket raised to the firing position, 1967.

The Honest John was a truck-mounted, unguided, solid-fuel rocket ranging from 5 km to 50 km. Gunners transported the missile in three parts, reassembled it, aimed, and fired it in approximately five minutes. Canadians deployed the rocket for counter-battery and harassment, delivering payloads, including high-explosive, nerve gas, and nuclear. The US Army held the nuclear warheads and could issue them to Canadians in a 'first strike' capacity. Canadians never fired the weapons system with nuclear warheads.

Early rocket training occurred in April and May 1961 at Fort Sill, Oklahoma. Canada fired its first Honest John missile at Camp Petawawa on 27 October 1961. In December 1961, the RCA deployed 225 personnel to Hemer, Germany, as part of the 4th Infantry Brigade (4 CIBG). In 1962, the Diefenbaker government purchased Honest John missiles for NATO service.

Major G.N.R. Olson presenting Sgt. Jewell W. R. with Honest John training certificate, 1967.

Visitors viewing Honest John on Army Day in Brandon, 1967.

In July 1962, 2 SSM Battery moved to CFB Shilo, Manitoba, partnering with the Royal Canadian School of Artillery. In 1963, after joining the 1st Canadian Infantry Brigade Group, Major J. G. Henderson became commanding officer of 2 SSM. In 1966, Major J. L. Mantin took command. In the spring of 1967, Headquarters, Mobile Command, took control of 2 SSM with Major G.N.R. Olson as the commanding officer.

The RCA Museum has an excellent photo album documenting the final years of 2 SSM in Shilo from 1967-68. The album includes photos of the last Honest John launched on 13 February 1968, in Shilo during a visit from the Minister of National Defense, Leo Cadieux.

The last Honest John Rocket fired by 2 SSM Battery in Shilo, Manitoba, dated 13 February 1968.

The photo album includes the last parade and march past on 26 September 1968, led by Major G.N.R. Olson, CD, at L Parade Square in Shilo. Among the dignitaries was LGen W.A.B. Anderson, OBE, CD, the Commander of Mobile Command, who inspected the unit and received the march past and the final salute, shown in photo to the left. As a memento of the final parade, LGen Anderson accepted the nose cone recovered from the last Honest John fired by the Canadian Artillery. Note the photo of LGen Anderson accepting the artifact. The RCA Museum currently has the nose cone in its collection.

LGen W.A.B. Anderson accepting the Honest John nose cone during the last parade, 26 Sept 1968.

The photo album shows a crucial period of Cold War history when Canadians fired massive 762 mm surface-to-surface rockets with nuclear capability. From 1962-68, CFB Shilo was home to 2 SSM Battery, tasked with training 1 SSM Battery replacement soldiers. The RCA Museum has one Honest John Rocket launcher displayed in the Gun Park.

2 SSM Battery in Brandon, rolling out, 1968.

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