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THE GALLIPOLI GAZETTE

OFFICIAL ORGAN OF THE GALLIPOLI MEMORIAL CLUB LTD

How the Rifle changed history – Part 2

Patrick O'Neill continues his history of the weapon that replaced the bow and arrow and the musket to become the weapon of choice for foot soldiers

In Part 1 of our story of the modern rifle, we covered how it never became the main weapon of the battlefield until well after the Battle of Waterloo.

In Part 2, we explore the major changes in engineering and chemistry that enabled the rifle to become the major weapon of today's army. But we also speculate on how it too, may soon be sidelined and replaced by drones.

While the rifle played a minor but vital role at Waterloo, the battle was still largely fought with musket, bayonet and sword. Muskets were smooth bore, highly inaccurate and their discharges soon covered the battlefield with confusion. Their smoke from black powder soon obscured the enemy from the musketeer, or gave away the position of a sharp-shooter.

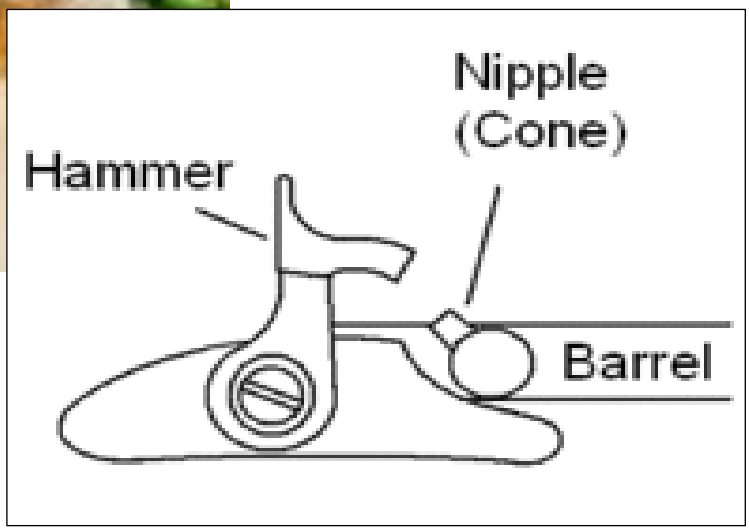
The only way to get rapid fire from muskets was to drum strict loading drills into the soldiers of the rank and file. Only well-trained soldiers could unleash a poorly aimed volley every 45 seconds - if it wasn't raining!

At Waterloo, musket-firing technology was literally stone-age. In theory the spark from a flintlock ignited dry powder to send a badly fitting musket ball rattling down a barrel towards its target – that's if the powder was dry.
If not, it was a fizzer! Over the coming decades, developments in explosives, bullets and metal engineering would be crucial in rifle-making technology, which would come together as the 19th century unfolded. But first, a way had to be found to overcome damp gunpowder.

The 1853 Lee-Enfield muzzle loading rifle used by the armies of the British Empire from 1853 to 1867; after which many were replaced in service by the cartridge-loaded Snider-Enfield rifle.

1861 Springfield muzzle loading Rifle USA was a Minie type rifled musket used by the US Army and Marine Corps during the American Civil war. Commonly referred to as the "Springfield" after its original place of production, Springfield, Massachusetts

The Percussion Cap



In the search for a water-proof percussion cap, shock-sensitive fulminates had already been patented in 1807 by a Scottish clergyman, Rev. Alexander Forsyth (1768-1843).

The legal actions of Alexander Forsyth

Despite the patent being in force since 1807, several British gunsmiths, most notably the father of sport shooting, Joseph Manton, invented other forms of detonating gunlock ignition in order to evade Forsyth's patent, which would not expire until 1821. Forsyth continually protected his patent between 1807 and 1821 in Britain with legal action. He fought cases against Joseph Egg, Collinson Hall, Isaac Riviere, Joseph Vicars, and Joseph Manton (twice). The most notorious of these attempted patent evasions was Manton's 'pellet lock' patented in 1816, which importantly worked with a hollow nipple - a feature invented by Hall which became mainstream later. Manton's pellet lock patent was decided in court to be an infringement of Forsyth's patent. The pellet lock had not been a great success, but Manton's tube lock was a much better device. Manton patented it in 1818, which Forsyth also challenged successfully. However, despite conceding legal defeat, Manton continued to produce them and finally negotiated licensing terms which led to Forsyth's company deciding to license the use of locks using fulminates to a number of other gunmakers from the Autumn of 1819, 18 months before the expiry of the patent.[1] A number of other British gunmakers and sportsmen also attempted to evade Forsyth's patent by avoiding complicated gunlocks likes Forsyth's. They hit on the idea of a simple percussion cap (or 'copper cap'), a small cup with fulminating paste inside, which, when placed over a hollow nipple and struck with a hammer, would ignite the gunpowder in the end of the breech. These men included Joseph Egg, James Purdey, Col. Peter Hawker and the British born artist, Joshua Shaw. In the face of so much competition, Shaw moved to America in 1817 and, once he was legally allowed to do so, was granted an American patent for a percussion cap in 1822. Shaw made a series of claims of being the inventor in order to gain compensation from the U.S. government for their use of copper caps without permission. This has led some vintage gun enthusiasts to claim Shaw was the inventor of the copper cap. Many gun historians have concluded that the inventor will probably never be known for certain.

Continued page 11.

Editorial

This edition continues the history of the rifle and the centuries of development and upgrading that turned a gunpowder propelled sphere pushed down a thin cylinder, called a musket, into the highly engineered rifle of modern warfare. Retired British Army Officer, Patrick O'Neill, ends by predicting that the rifle will be superseded in most of its functions by the mini-drone that seems likely to become the weapon of choice for anti-personnel warfare.

Our President, John Robertson, informs us of the latest developments in the building of the new Gallipoli Memorial Club. We are getting there, but the Committee is not taking any unnecessary shortcuts and is standing up for our rights as members and therefore co-owners of the premises.

He also reports on Committee members attending a commemorative ceremony in memory of the late Consul General of the Republic of Turkey, Mr. Şarık Arıyak and Attaché Engin Sever, who were victims of one of the first terrorist attacks on Australian soil in December 1980 at Dover Heights in Sydney.

Bruce McEwan takes us to the Bare Island military base that was built nearly 150 years ago at the northern tip of the entrance to Botany Bay. With the British military forces being withdrawn from the colonies by Prime Minister Gladstone, British military engineers designed forts at most of the major coastal cities of Australia as the threat and fear of Russian invasion grew.

We also report on the opening of entries to the 2022 Gallipoli Art Prize. Time to get your paint brushes out and allow your creative self to take over!

Presidents Report Autumn 2022

A quiet few month's on the home front. Things are starting to open up but we are a long way from getting out of this disease. Numbers are starting to come down, but too many still getting sick, hospitalised and dying. Close contact for a number of your directors and even one positive as we go to press. So again, at the risk of sounding like a broken record, I hope you are all keeping safe and well both mentally and physically and taking the appropriate precautions.

Slow progress on the development I'm afraid. But at least I don't think that we are going backwards. A number of outstanding matters have been rectified and we are hanging in there. I can assure you all that we will continue working towards an outcome that is of maximum benefit to the members and the Gallipoli legacy.

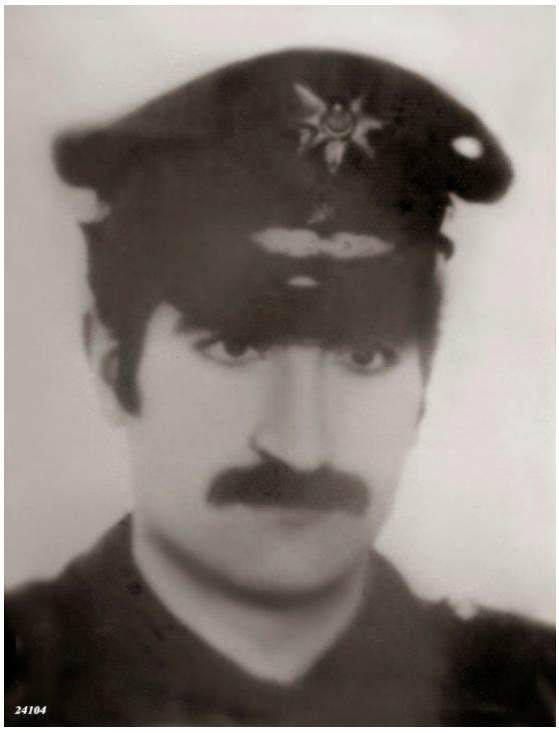
A number of directors, the Building Committee and the Museum Committee were able to have an on-site inspection on February 9. Darren Mitchell has prepared a comprehensive draft Plan for the operation of the Museum and we thank him sincerely for that work.

Three directors attended a commemorative ceremony in memory of the late Consul General of the Republic of Turkey, Mr. Şarık Arıyak and Attaché Engin Sever, who were victims of one of the first terrorist attacks on Australian soil carried out by Armenian terrorists on December 17, 1980.

The assassination took place outside the residence of the Consul at Dover Heights. The culprits have never been caught, but the police made a breakthrough last year, finding the weapon used. While the occasion and the commemoration are very solemn occasions, the Turkish hospitality afterwards is always memorable.

John Brogan and I will be attending the next meeting of the Building Management Committee for the strata scheme. We have raised our concerns regarding the allocation of costs and the fact that (I seldom use that phrase) the budget presented is not consistent with what was agreed between us and AMP. Also, we have been charged for use of various items which obviously as we do not possess either property, we have not used. Having said that, the Building Manager has heard our concerns and is very sympathetic to our position.

Mr Sari Ariyak



Engin Sever

As I hinted at last report, we can't take anything for granted. Failing the wheels falling off the bus, the Art Competition will be held this year. We have an interesting site in a former bond store (co-incidence) in The Rocks for the exhibition, and Property NSW have provided space for us to receive, judge, store and dispatch the art works in the International Convention Centre in Darling Harbour. Fingers Crossed!

John Brogan and I will be attending the AGM and presentation of the Gallipoli Scholarship Fund on April 28. We have yet to be informed who our bursary recipient is this year, but we will inform you all once we know.

The Board continues to meet regularly via tele-conference. We managed to get most, bar Queensland, together in December. Scott (Qld) was able to attend the inspection on February 9. A good omen for the future?

Keep safe, keep well, get your triple vaccine and keep smiling.

John Robertson
President

The facade of the Gallipoli Memorial Club

Gallipoli Art Prize 2022: Call for Entries

The Gallipoli Art Prize Organising Committee annually invites any eligible artist to submit a painting for the Gallipoli Art Prize, which will be administered by the Gallipoli Memorial Club Limited (the "Club") and under the control of the Gallipoli Art Prize Organizing Committee.

Prize money of $20,000 is awarded to the artist of the winning entry subject to the conditions below. The acquisition of the work and its copyright remain property of the Gallipoli Memorial Club Museum Fund.

The Gallipoli Art Prize will be awarded to the artist who best depicts the spirit of the Gallipoli Campaign as expressed in the Club's "Creed".

The Club's Creed is:

We believe that within the community there exists an obligation for all to preserve the special qualities of loyalty, respect, love of country, courage and comradeship which were personified by the heroes of the Gallipoli Campaign and bequeathed to all humanity as a foundation for perpetual peace and universal freedom.

Each competitor must either have been born in Australia, New Zealand or Turkey or hold Australian, New Zealand or Turkish citizenship.

Each competitor may, at their expense, submit one piece of original work produced in either oil, acrylic, water-colour or mixed. The term of reference to be used is the spirit of the Gallipoli Campaign as expressed in the Club's Creed.

To read the conditions and download the Application Form please visit: *https://www.gallipoliartprize.org.au/2022-call-for-entries*

Entries close 4pm, Wednesday, March 16, 2022.

Previous winners

Winner 2021: "Forgotten Heroes" by Geoff Harvey

Winner 2020: "Breathe" by Alison Mackay

Winner 2019: "War Pigeon Diaries" by Martin King

Winner 2018: "Mont St Quentin" by Steve Lopes

Winner 2017: "The Sphinx, Perpetual Peace" by Amanda Penrose Hart

Winner 2016: "Yeah, Mate" by Jiawei Shen painting

Winner 2015: "Boy Soldiers" by Sally Robinson.

Winner 2014: "Gallipoli evening 2013" by Idris Murphy.

Winner 2013: "Dog in a Gas Mask" by Peter Wegner.

Winner 2012: "Trench Interment" by Geoff Harvey.

Winner 2011: "Sacrifice" by Hadyn Wilson.

Winner 2010: "The dead march here today" by Raymond Arnold.

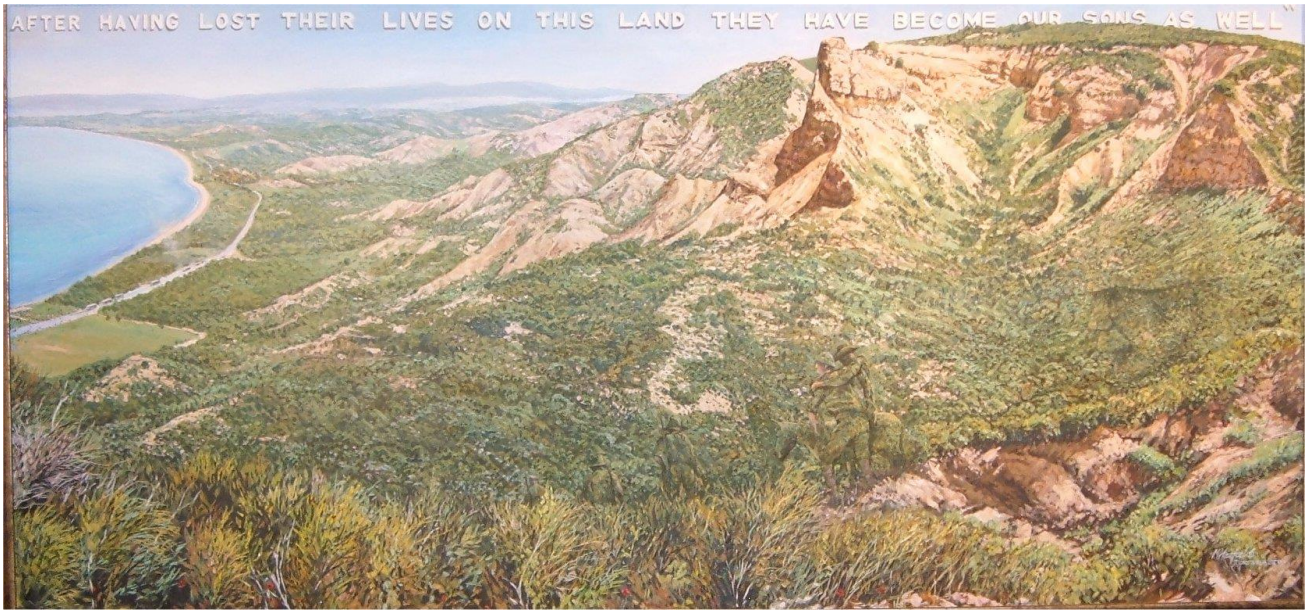
Winner 2009: "Smoke/PinkLandscape/Shovel" by Euan Macleod.

Winner 2008: "Max Carment, War Veteran (The last portrait)" by Tom Carment.

Winner 2007: "Glorus Fallen" by Lianne Gough.

Winner 2006: "Ataturk's Legacy" by Margaret Hadfield.

“Forgotten Heros" by Geoff Harvey 2021 Art prize winner



Margaret Hadfield has been a consistent entrant in the competition. Her initial entry "Ataturks Legacy" won first prize in 2006

The Russians are coming!

Bruce McEwan was taken by the history of Bare Island at the mouth of Botany Bay. In looking at his history he discovered the major fear of the Australian colonies in the 1870-80s was a Russian invasion

In the late 1800s, visits of Russian ships in Australian waters were considered to be merely commercial and friendly.

Australian shores first saw a Russian ship in June 1807, when the sloop *Neva* sailed into Port Jackson, Sydney. Russian ships from then on continued to anchor in Australian ports to replenish food and drinking water.

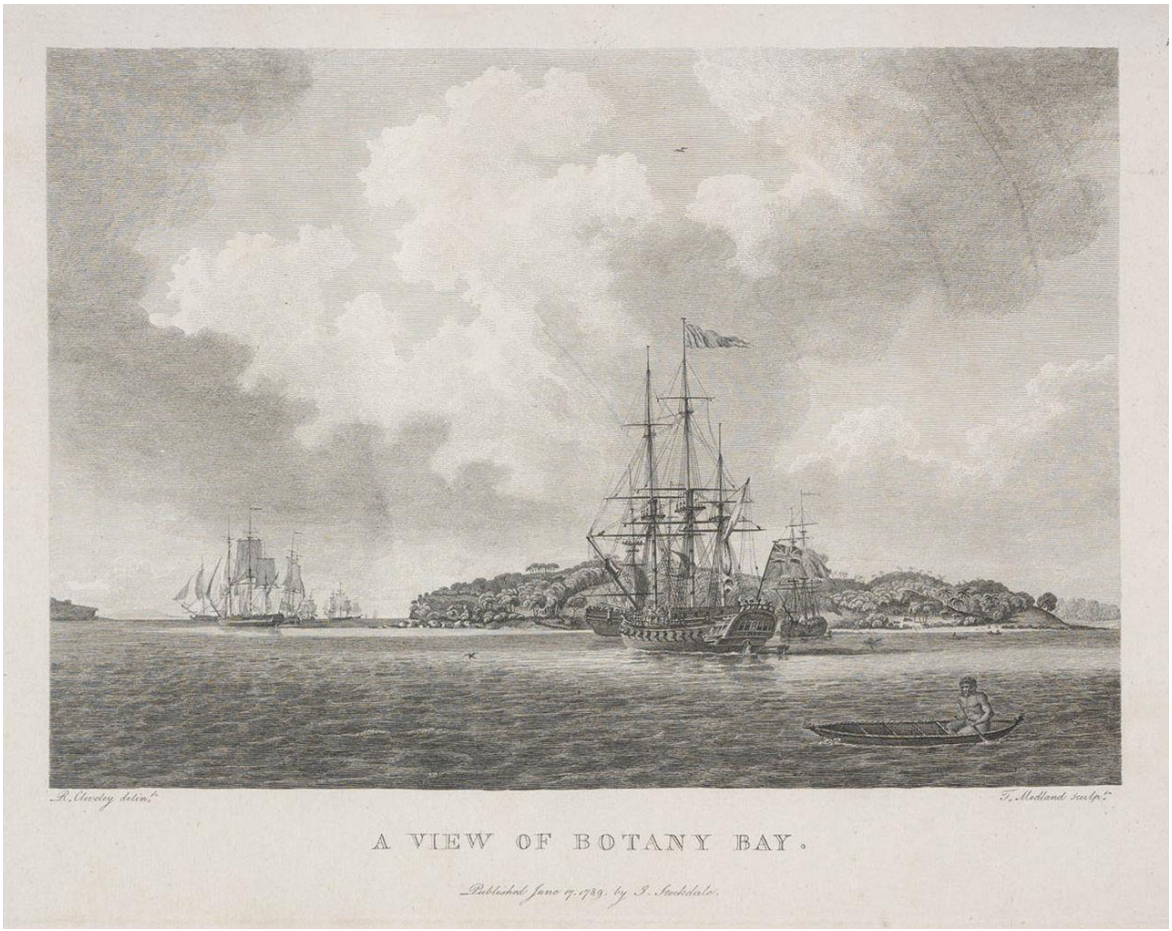
Russian navigator Mikhail Lazarev was the first to bring news to Australia in 1814 of Napoleon's humiliation following the War of 1812. But due to the exaggerated stories of Australian journalists, for almost a century the continent was in constant fear of a Russian invasion.

The first quarter of the 19th century was a time when Russia was in close contact with its American colonies in Alaska and as far south as Sonoma County, California.

Russian merchant vessels and warships frequently anchored on Australian shores to purchase provisions and rest up. Australia, at the time, was still a British colony. Great Britain and the Russian Empire were never formally allied against Napoleon; but when Russians occupied Paris in 1814, British concerns about the Empire's naval and military power were stoked. Russian warships were becoming habitual guests in Australian ports, and colonial authorities reported their concerns to London.

Russo-British tensions built up eventuating in the Crimean War (1853-56) but subsided temporarily afterwards.

However, a decade later after the Russo-Turkish War of 1877–1878, Russia was seen by Britain as part of a potential expansion plan southwards by that empire into India, and the Australian colonies were advised to upgrade their defence capabilities.



The inadequacy of defences in the colony was seen in 1862, when the *Svetlana* sailed into Port Phillip Bay (Melbourne) and the fort built there had no gunpowder for its cannons to use to return a salute.

William Jervois, a Royal Engineer, was commissioned to determine the defence capabilities of all colonies, with the exception of Western Australia. He was assisted in this reporting by Lieutenant Colonel Peter Scratchley. In their Report, they stated their conviction that the Russian Empire would attack Australia and New Zealand shipping in an attempt to destroy the local economies. As a result of Jervois-Scratchley Report colonial defences were reorganised on one model with slight variations for each colony. Wealthier colonies tended to have a higher proportion of paid permanent soldiers and militia whilst the smaller colonies opted for more volunteers. Given that a large portion of their reports concentrated on sea ports, the most visible signs of their influence are the many fortifications from the 1880s, and later, that may be found at the entrance to the larger ports of Australia and New Zealand. In addition to Bare Island these included:

- Fort Scratchley, Newcastle, New South Wales;
- Fort Lytton, Brisbane, Queensland;
- Fort Glanville, South Australia;
- Fort Jervois, Ripapa Island, New Zealand;
- Fort Nepean and Fort Pearce on Port Phillip Bay, Victoria; and
- The Hobart coastal defences on the River Derwent, in Hobart, Tasmania.

Bare Island was designed by Peter Scratchley (who was also primarily responsible for the design of both Fort Glanville and later Fort Largs in South Australia, where Jervois became Governor) along with civil engineer Gustave Morell and Colonial Architect James Barnet who was responsible for its construction. It was built from 1881 to 1889 by John McLeod on behalf of the NSW Department of Public Works.

Bare Island is connected by a footbridge to the mainland of La Perouse.

Bare Island was mentioned in the journals of both Joseph Banks and James Cook. Banks collected shell specimens there, while Cook noted that the island, which he described as "a small bare island" provided a convenient navigational marker. The name stuck from this first usage. As such the name is one of the first European names for a part of the east coast.

A modern photograph of Bare Island

Governor Phillip and French explorer Jean-Francois de La Perouse were the next to enter Botany Bay, but neither group is known to have personally visited Bare Island. The French built a stockade and kitchen garden there and also buried their dead priest, Father Receveur.

William Bradley, in his journal *A Voyage to New South Wales*, relates that in July 1788 noticeboards were erected on the island to advise visiting ships that the settlement had moved to Port Jackson.

The removal of all remaining garrison troops from Australian colonies excepting those retained and paid for by colonial governments as a result of the Cardwell Reforms in the late 1860s (implemented by Prime Minister Gladstone to redirect defence force financing) forced a rethink of local defence preparedness, especially with the outbreak of hostilities between Russia and Britain in 1876. As a result, the Australian colonies requested the services of an Imperial Engineer to advise them on defence matters and so Scratchley and Jervois were sent.

Jervois recommended a small base in Botany Bay as protection from small squadrons of hostile cruisers making lightning raids on Sydney and holding it to ransom for its gold reserves. Scratchley was responsible for turning Jervois's strategic vision into a detailed design and specification of the works. Construction of Bare Island fort was completed in 1885 at a cost of £34,000; work inside the fort began in 1889.

Bare Island Fort reflects the development of coastal fortifications design by the British Army, from locations around the world over more than a century. This was combined with a newly generated understanding of ballistics and materials science that was a product of the late nineteenth century Industrial Revolution. Bare Island, in comparison with earlier coastal defences constructed in Australia, such as Fort Denison or the Middle Head Batteries, shows the impact of new materials such as concrete, as well as the ever-increasing power of guns.

The design and construction was complex. The basis of the design was a symmetrical crescent, with the heaviest gun in the centre, which faced the likely line of attack.

Plans for a fort were drawn up by the Colonial Architect's department, and government tender for construction was awarded to a building company led by John McLeod, who also previously built the George's and Middle Head fortifications, when the French were the anticipated enemy.

Construction was completed in 1886, but by 1887 problems began to emerge as a result of poor construction. Between 1888 and 1889 barracks were constructed using the same contractor. The job did not go to tender. Lieutenant Colonel De Wolski raised questions as to the appropriateness of the barracks design and location, as well as the failure to call tenders. A Board of Inquiry was established to investigate his concerns, but work continued. De Wolski complained and the work and contract were suspended.

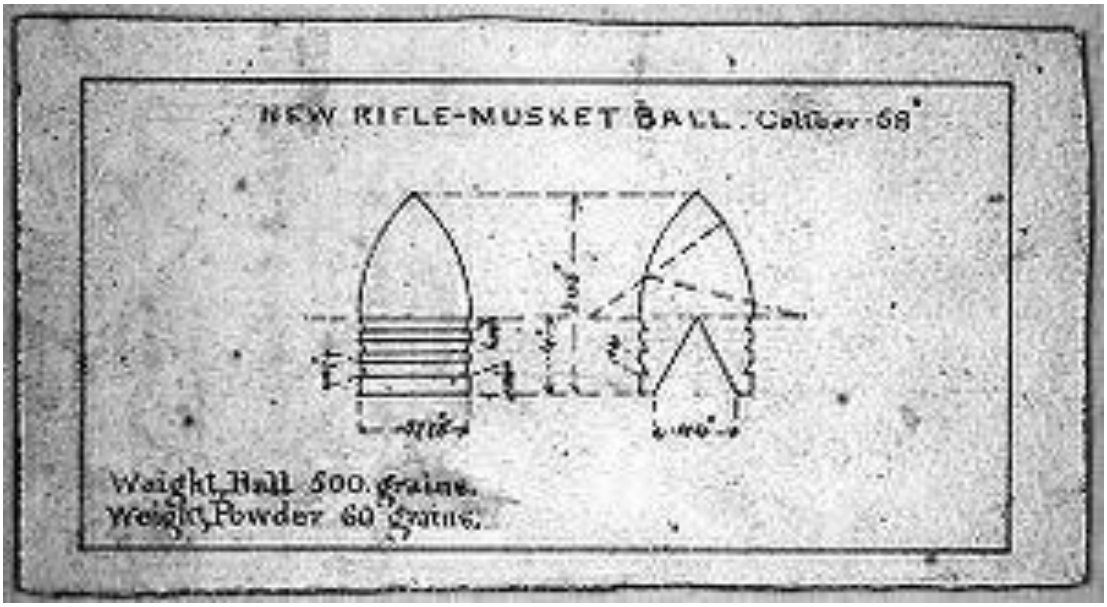
The fort was armed with two RML 9 inch 12 ton guns, two RML 80 pounder guns, a RML 10 inch 18 ton gun in an armoured casemate, and two five–barrelled 0.45-inch (1.1 cm) Nordenfelt guns.

At the same time, a Royal Commission of Inquiry was established into the contract and construction of Bare Island. It found that the Colonial Architect Barnet was responsible for the mismanagement of the Bare Island works. This finding and the controversy surrounding it led to Barnet's premature retirement from public life. McLeod was never awarded another government tender and Barnet resigned from his position around that time too. The bridge to the island was added in 1887. Until then, access relied on a flying fox (zip line), or a barge. It was by barge that the five major guns on the island – including a 12 tonne cannon – were brought across. During its operating years, the barracks were manned by about 70 soldiers. Bare Island was transferred to the Commonwealth in 1901. The garrison was reduced in 1902 and by 1908 no substantial military activity was occurring there.

Continued from page 2. (How the Rifle changed History - Part 2)

Inventing the modern bullet

In 1847 a French army officer named Étienne Minié, invented what came to be known as the Minié ball. This projectile could be used in muzzle-loaded rifles and muskets alike. It was also the first of the traditional bullet-shaped projectiles. Its secret lay in its 'skirt'. On firing, the hot gasses would expand the skirt round the bottom to ensure the projectile fitted the barrel preventing hot gasses escaping round the side of the ball. This was particularly effective with the rifle-grooves. This ensured not only more accuracy, but a higher muzzle velocity.



These new Minié balls would prove lethal as they improved accuracy on firearms in both the 1853 Crimean War and the 1861 American Civil War. But rifles still hadn't fully replaced smooth-bored muskets. They still took longer to load and gunpowder was still unreliable, particularly in damp conditions.

The making of modern gunpowder

It's only when you try making traditional black gunpowder that you realise how messy it is. It quickly fouls the barrel and the firearm workings, with black soot, requiring cleaning after every discharge. There is no way modern weapons can work with gunpowder, particularly rapid fire repeating rifles or machine guns. Six shots and the weapon would jam. It was this lack of a workable propellant, that would hold up firearm technology for nearly a century.

In 1843 the Swiss chemist Christian Friedrick Schönbein (1769-1868), tried treating cotton fibre with a nitric acid and sulphur mixture.

But this gun cotton proved to be too fast burning and unstable for firearms or artillery pieces. We would have to wait another 40 years before a French chemist Paul Vieille would find a way to stabilise it.

The result was *Poudre B*, which started off an arms race between the European powers to find a better propellant. However, it wasn't until 1890 that cordite was developed and the first modern ammunition.

Breech loaders

The concept of breech-loading guns has been around for a long time. In the 16th century, Henry VIII owned one (below) though history doesn't relate what happened to the person who actually fired it. It burst open due to poor sealing. Other breech-loaders were developed in the 15th and 16th century (see next page). The problem with all breech-loaders was the integrity of the seals. If the breech exploded it would be more dangerous to the operator than to the targets. Major changes in precision engineering would be needed to create reliable seals. It would not be until the latter half of the 19th century that breach-loading rifles could even be contemplated.

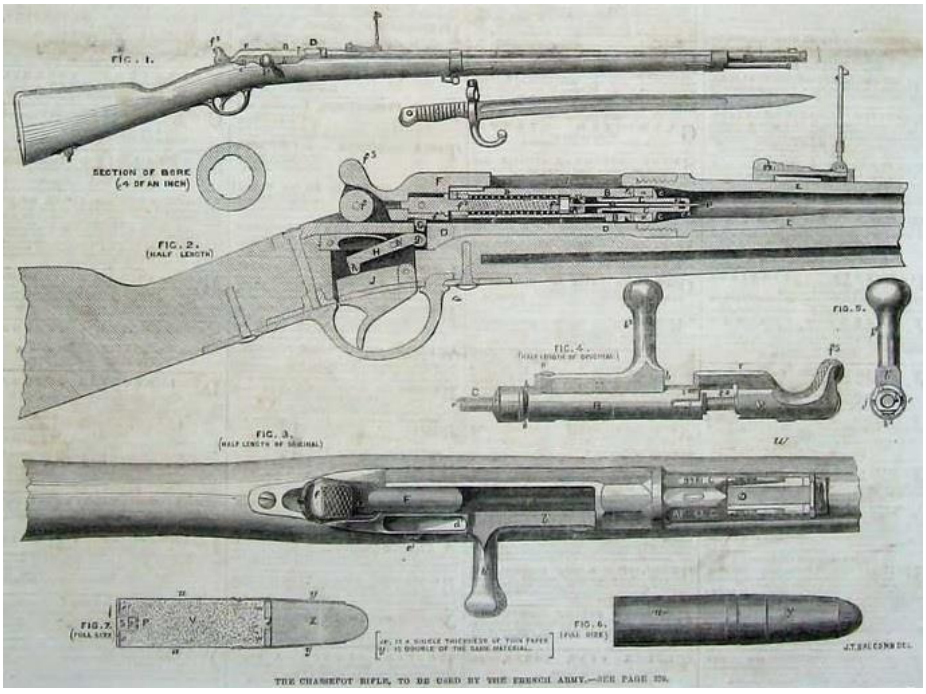
The breech loading gun owned by Henry VIII

The Invention of the Needle Gun

The *Zündnadelgewher or* 'needle gun' (above) was the creation of Johann von Dreyse (1787-1867) in 1841. It still had paper cartridges. A 'needle' would strike a percussion cap behind the bullet.

This was a modern rifle,of sorts. In the hands of a skilled rifleman, the new needle gun could fire five rounds a minute, accurate up to 1000 metres. It was decisive in the Austro-Prussian war.

The French soon came up with their breech-loader. The Chassepot (below) also had paper cartridges, however, it didn't help the French defeat Prussia in the Franco-Prussian War.



We have to wait until 1886 before the introduction of the first smokeless powder all-metal, rifle round, to fit breech-loading rifles. This was the Lebel 8x50mmR cartridge (below left). Gun manufacturers quickly developed breech-loading weapons to make use of this new ammunition. The world was at last ready for a modern rifle.

Human Rifle Skills

Tracing the history of the modern rifle over 300 years has been a story of engineering, chemistry and scientific invention. But it has also been a story of steady hands, courage and marksmanship.

As we saw in Part 1, the two snipers with the highest long-distance 'kill' scores recently, were Canadian and Australian marksmen who made their kills across distances of over a kilometre.

In terms of numbers killed, the highest kill-score claimed to date is by Abrorrasul Zarrin (right) who allegedly killed 700 + enemy soldiers in the Iran - Iraq war, with his rifle.

Francis "Peggy" Pegahmagabow, was a Canadian first-nation's sniper in the Canadian army who was credited with 378 'kills' in WW1. Simo Hayha was a Finnish sniper who claimed 505 kills during the 1939 Soviet- Finnish Winter War.

Lyudmila Pavlichenko

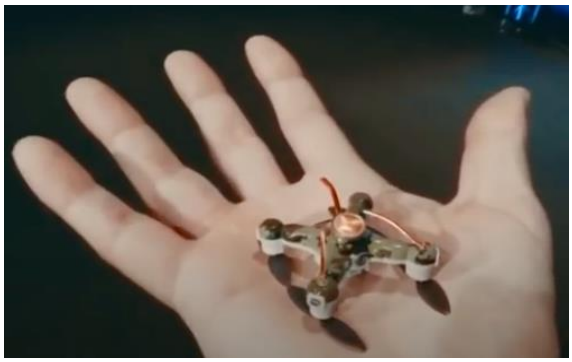
Francis "Peggy" Pegahmagabow

Simo Hayha

Not forgetting ‘markswomenship’. An often-forgotten aspect of WW2 was the devastating Soviet women snipers such as Lyudmila Pavlichenko (left) of the Red Army. “Lady Death”, was credited with 309 ‘kills’ in WW2. All these snipers learned how to handle their rifles, camouflage themselves, creep out to vantage points and ‘hunt’ their victims.

All today’s sniper will have to do, is sit behind a desk.

The Future



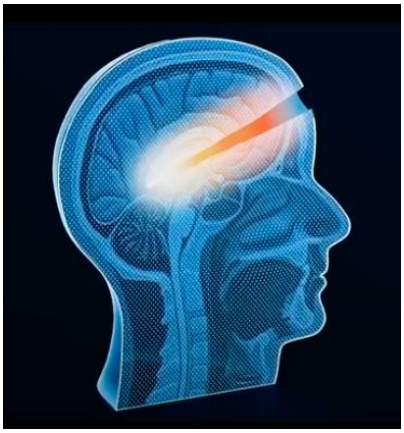
During the recent Nagorno-Karabakh war between Azerbaijan and Armenia, Turkish drones were used to devastating effect. We watched as Armenian tanks were blown apart by death from the skies. But drones are getting smaller. One is small enough to fit in the palm of your hand. These are anti-personnel drones.

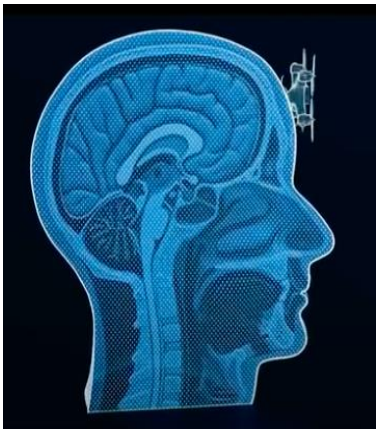
Bullet drones are programmed to seek out and destroy individuals simply by using facial recognition. The drone sniper will be able to programme them to fly out, find a target and kill it.

Indeed, the technology is there for them to do it right now.

Today, it’s possible to load thousands of these bullet drones into aerial transports. The pilot then drops them over a target area, all individually programmed to seek and destroy their pre-designated targets, and only those targets.

The day of the anti-personnel individual killer drone has arrived.





"The Landing" 25th April, 1915

THE GALLIPOLI CAMPAIGN
THE BEGINNING – "THE LANDING"

Men of the 1st Australian Division A.I.F. (Australian Imperial Force) landing under heavy Turkish fire at ARI BURNU, 4.30am on 25th April, 1915. The beach was later named ANZAC COVE.

The name "ANZAC" originated in Egypt early in 1915 where the Australian and New Zealand Army Corps were training. The Corps Commander, Lieut. Gen. William Birdwood, used the abbreviated title of the Corps, A.N.Z.A.C., as the code word for the Corps in preparation for the Gallipoli Campaign – a word that was to make history and be revered by Australians and New Zealanders for all time. An "ANZAC" was an Australian or New Zealand soldier who served in the Gallipoli Campaign. The term "an Original ANZAC" identified those men who participated in the initial landing on the 25th April, 1915 – the 1st Australian Division, A.I.F.

The Campaign ended on the 18th December, 1915, following the evacuation of all Allied troops from the Peninsula.

In the 8 months period of the Campaign, Australian casualties were:

Killed in action and died of wounds	8,079
Wounded in action and missing	17,924
Total	26,003

Our Club was originally "The Gallipoli Legion Club" until November, 1967 when it became "The Gallipoli Memorial Club" – a memorial where the legend of GALLIPOLI would be firmly entrenched as an inspiration to future generations of Australians.

It was founded and developed by the GALLIPOLI LEGIONS OF ANZACS, those "ANZACS" who survived the Gallipoli Campaign and following that, the Campaigns of France and Belgium until the Armistice on the 11th hour of the 11th day of the 11th month of 1918.