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NIAGARA'S CITIZEN SOLDIERS OF TODAY, TOMORROW, AND YESTERDAY

The Lincoln & Welland Regiment

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PUBLISHER'S NOTE



BUSINESS LINK
MEDIA GROUP

Dear Business Link Readers,

We hope you all enjoyed your Thanksgiving celebrations!
Today is November 11, 2022 otherwise known as Remembrance Day.

To commemorate this special day, we would like to present a very special Business Link November edition, in honor of our Canadian Armed Forces.

I trust every one of us to appreciate that our freedom is a result of unimaginable sacrifice and noble service. From the brave men and women serving overseas, to our reserves working hard within our borders, we thank you for providing us a safe and welcoming place to call home. In this special edition, we aim to raise awareness for the Lincoln and Welland Regiment that has been serving the country since the Second World War, and recognise our reserve soldiers who are living in the Niagara region.

The Lincoln and Welland Regiment marched through the streets of downtown St. Catharines on October 22, 2022, in honour of the Liberation of the town of Bergen-Op-Zoom. In recognition of this event, Business Link is providing video coverage of the parade, as well as a variety of interviews.

Military operations are changing in the way they are conducted. New technologies are rapidly emerging to support national defense efforts, many of which the mainstream population has yet to even learn of or experience for themselves. Our writer Ashwin Balakrishnan shares his insight on military advancement and how these new technologies will impact us in the future.

On October 26, the 40 under Forty Hamilton Business Achievement Awards Ceremony was held with great success! Business Link was thrilled to recognize the winners together with their family, friends and other alumni from the Greater Hamilton Area.

Today we pause in a moment of silence to honour and remember the men and women who have served, and continue to serve Canada during times of war, conflict and peace.

Yours in Business
Marilyn Tian, M.B.A.
President & Co-Publisher
Business Link Media Group

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A collage of four images: a pizza, a bottle of beer, a glass of wine, and a cocktail. Below the collage is a large white rectangular box containing text and logos.

The Carmen's Group logo, which consists of a stylized bird icon above the text "CARMEN'S GROUP".

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NIAGARA'S CITIZEN SOLDIERS OF TODAY, TOMORROW, AND YESTERDAY

THE LINCOLN & WELLAND REGIMENT

by Business Link Staff Writer

Lincoln & Welland Regiment, honours their veterans, retiring, new members on October 22, 2022

The Lincoln & Welland Regiment marched through the streets of downtown St. Catharines on October 22nd, 2022, in honour of the Liberation of the town of Bergen-Op-Zoom. This annual service of remembrance respectfully honours the regiment's members

whom they lost, injured of this battle and veterans lost since then veterans and currently serving members. Niagara's reservist unit members took time out of their civil jobs and life to honour their regiment's long history in Canada's military battle honours.



Photo: Lincoln & Welland Regiment, Oct 22nd 2022 Bergen Op Zoom Parade

Bergen-Op-Zoom is an important note of the Lincoln & Welland Regiment's history.

The day before the Second World War began; the Regiment was called out and posted to guard the Welland Ship Canal and various hydro-electric generation sta-

tions. In June 1940, the 1st Battalion, The Lincoln, and Welland Regiment were mobilized for active service.

The 1st Battalion arrived in the United Kingdom in July, 1943, and became a part of the 10th Canadian Infantry Brigade of the 4th Canadian Armoured Division.



History images: Bergen Op Zoom

The Regiment landed in France on July 25th, 1944, and formed part of II Canadian Corps's "long left flank" of the Allied advance, and would fight its way through France and Belgium before entering The Netherlands.

To help the Allies gain access to the port of Antwerp, Canadians fought to clear the Germans from the Scheldt Estuary in the fall of 1944. After days of grueling combat at Wouwsched Plantage, two companies entered the Bergen Op Zoom, city square on the 27th of October with little opposition followed by the remainder of the regiment. As the Germans had taken up defensive positions north of the canal, the fighting for control of the city would continue until the 30th of October, thus liberating the first major Dutch city during the war. Bergen Op Zoom would continue to be a base of operation for the allies in the remaining liberation of The Netherlands.

Following the battle of The Scheldt, the regiment would continue to fight its way through The Netherlands and Germany over the coming months, in battles like Kapelsche Veer, The Hochwald, Delden and Twentieth Canal, among many others.

On May 5th, 1945, the battalion was out of contact with the enemy near Bad Zwischenahn, Germany, when it received orders to cease all offensive operations and stand fast. The war officially ended three days later. Over 1500 members of the Regiment were casualties, and of the original men who enlisted in 1940, only 3 officers and 22 men were on parade with the Battalion in St. Catharines in 1946 when it was dismissed.



Photo: WWII Lincoln & Welland Regiment

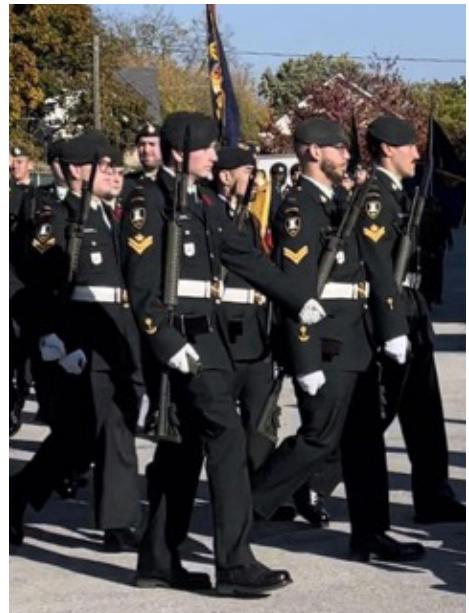


Photo: Lincoln & Welland Regiment Parade downtown to Church

Significance of the Lincoln & Welland Regiment Battle Honours

The War of 1812

Defence of Canada 1812-1815,
Detroit, Queenston, Niagara

The First World War

Ypres, 1915, 17; Festubert, 1915;
Somme, 1916, Arras, 1917, 1918;
Hill 70; Amiens; Hindenburg
Line; Pursuit to Mons

The Second World War

Falaise; Falaise Road; The Liaison;
Chambois; The Seine, 1944; Moerbrugge; The Scheldt; Breskens
Pocket; The Lower Maas; Kappelsche Veer; The Rhineland; The
Hockwald; Veen; Twente Canal;
Friesoythe; Kusten Canal; Bad
Zwischenahn; North-West Europe, 1944-1945.

Afghanistan



Photo of Her Royal Highness, The Countess of Wessex, presented the Lincoln & Welland Regiment with new Battle Colours Niagara.

2022 Colour Party

Colour Officers: Captains Justin Blachfield and Davis Bick

Colour Warrant: Drew Neufeld

Escorts: Sergeants Jeremy Gamble and Joel Prudin

In 2012, as part of the Diamond Jubilee tour of Canada, Her Royal Highness, Countess of Wessex, Sophie presented new regimental colours to the regiment which included the battle honour Niagara based on the regiment's perpetuation of The Incorporated Militia of Upper

Canada. The regiment also perpetuates the 1st, 2nd, 3rd, 4th, and 5th Regiments of the Lincoln Militia as well as the Coloured Corps from the War of 1812 thus linking the regiment to the Battles of Detroit, Queenston Heights and the Niagara campaign.

Citizen Soldier of Today

Today's Lincoln & Welland Regiment is commanded by Lieutenant Colonel (LCol) Christopher Canavan who joined the Canadian Armed Forces in 2002 as an Infantry Officer (Army) with the Lincoln & Welland Regiment. Throughout his career LCol Canavan has been appointed to many key positions within the Regiment before taking command. He has been deployed domestically and internationally to support a variety of Operations; Op Athena in Afghanistan, Kuwait, Op IMPACT Iraq where he was awarded the Commander CJOC Commendation.

Recently, LCol Canavan deployed domestically on OP LASER 20-01, serving as Deputy Commanding Officer initially with 32 CBG's Local Response Unit, and then with the 1st Territorial Battalion Group. Both units were in direct support to the Ontario Government's Request for Assistance related to COVID-19. Joining him on this recent local response unit was (40 members) of the Lincoln & Welland Regiment.

The Lincoln & Welland Regiment headquarters is located at 81 Lake Street, St. Catharines. The armoury is the homebase for 160 members. These dedicated soldiers who also work in their civil jobs, attend school have become masters at balancing their civilian jobs while serving their country.

Business employers, like Inniskillin Winery in Niagara-on-the-Lake, who employ Chris Canavan as their Cellar Master have been in support for LCol deployments. Winemaker, Nicholas Gizuk reflected during on-site at Inniskillin winery this fall's grape harvest crushing season that the company has been in full support of Chris's reservist service to our country. His military experience has brought great leadership and teamwork skill sets that create a perfect blend in Chris's integral winemaking staff position at Inniskillin.



Photo: Chris Canavan at Inniskillin Winery



Photo: Chris Canavan presenting an award

Lincoln & Welland Regiment's Regimental Sergeant Major Change

Chief Warrant Officer (CWO), Fred Randall was honoured during the October 22nd, 2002, Lincoln & Welland Regiment's annual Lake St. Armoury parade floor for his 38 years of dedicated service in the Canadian Armed Forces. Born and raised in St. Catharines, ON, CWO Randall has spent

his entire life within the Niagara Region where he raised his family. He is married to Antoinette Randall CD, who Fred met years ago when she was the former SNCO for the Lincoln & Welland Regiment. They have two children, Emma (29) and Chelsea (26).

Randal's career in the military transitioned from May of 1984 as a PTE recruit where he first trained in the basics and small arms. He was slated for leadership training. Completed his Infantry Section Commanders Course in July 1988 and was immediately launched into teaching other reservists. Promoted to MCPL in Sept 1988 and promoted to SGT in 1990. Randall's teaching each summer in Borden, Meaford and Petawawa. He has held all NCO positions within the Infantry companies and The Regimental Band as Drum Major of the Lincoln & Welland Regiment.



Photo: RSM Frederick Randall (now retired) at the Arm



Photo: Incoming RSM, CWO, Andrew Gliosca

Chief Warrant Officer Randall was promoted to Warrant Officer in Jan 2010. He has held all key leadership positions within the Infantry Company. CWO Randal has been the CSM of both Companies within the Regiment and Stalwart Guardian 2028. He was presented with the Command Team coin from the Brigade Commandeer and BSM. CWO Randall was the DSM from October 2016, until October 2019. As of October 19, 2010, CWO Randall has been appointed the Regimental Sergeant Major.

CWO Randall states, "I have great pride in being able to lead so many of the soldiers that he taught throughout the years".

In his civilian job Fred Randall has been employed with UPS as a driver since 1987. He has also been Business Representative for Teamsters Canada Locals 879 and 938 in 1995. In 2015 he returned to UPS as a driver and has held the position as CHCP Co-Chair for Health & Safety Committee till 2021. He is an avid Motorcyclist and loves to spend time with his wife and two daughters. He is also a proud member of the Royal Canadian Legion Branch 24 and now is the President of the Lincoln & Welland Association.

Incoming Regimental Sergeant Major, CWO, Andrew Gliosca enrolled in the Canadian Forces Primary Reserve on November 10, 1994, with 32 Service Battalion as a Weapons Technician. From 1994 to 1998 CWO Gliosca mastered his trade through various courses and on the job training taskings. Completed his Junior Leadership Course JLC in 2001 and various instructor roles training, Basic Military Qualifications as well as trade courses at the Electrical and Mechanical Engineering School. He was promoted to Sergeant in 2004, Warrant Officer in 2011, Master Warrant Officer in 2015, and has held every Non-Commission Officer position within the Service Battalion including the role of Regimental Sergeant Major.

CWO Gliosca participated in two operational deployments, the first in 1998 Op Palladium, with the NATO Stabilization Force in Bosnia-Herzegovina, and in OP Impact in Kuwait and Iraq in 2017-2018.

Chief Warrant Officer Gliosca went to York University where he obtained a Bachelor of Arts (BA) in Political Science and a Specializa-

tion Certificate in Practical Ethics. He also attended Daemen College in New York State and earned a Teaching Certificate (BED). Chief Warrant Officer Gliosca was employed with the Toronto Catholic District School Board from 2001-2004 as a middle school teacher. In 2004 CWO Gliosca accepted a position as a firefighter with Toronto Fire Services and is currently an Acting Captain and an Associate Training Captain.

WO Gliosca resides in Woodbridge, Ontario with his wife Vanessa and son Noah.

Colonel McEwen has served as a Military Advisor in Sierra Leone and in Afghanistan as Senior Advisor to the Afghan Ministry of Defense. In 2011, he was the Battle Group CO for Exercise Maple Defender in Wainwright, Alberta and has worked as the Deputy Director, Army Reserve.

While Commander of 32 Canadian Brigade Group, he oversaw deployments on three missions to assist during the pandemic – Operations Globe, Laser, and Vector – as well as

guided the maintenance of normal Brigade activities during the various stages of COVID restrictions. Colonel McEwen lives in Oakville, Ontario, with his wife Patty and their three children.

Introduced the new Regimental Sergeant Major, Andrew Gliosca. The role as a RSM you will be senior non-commissioned officer in the regiment and are responsible to advise the CO on the welfare of the soldiers and how they are doing. Observations, suggestions on training, known areas of improvement, how's morale. Also, to sit in on his order groups and offer opinion on operations and how you think they should go, provide advice and guidance to both company commanders, some of the junior officers and the men and women who serve in the unit.

RSM's ultimate responsibility is to be the interface between the regiment's commander and the troops. Provides advice and guidance to both while always making sure their welfare is considered.

Lincoln & Welland Regiment Foundation

Lincoln & Welland Regiment, active unit of the Canadian Armed Forces. The Lincoln and Welland Regiment Association, an association composed of serving and past members of the Regiment that support activities of its veterans and the serving battalion.

Lincoln & Welland Regiment Foundation, an entity incorporated as a charitable organization. The Lincoln and Welland Regiment Band is made up of both serving and voluntary members, the band has helped maintain a strong Regimental presence in the community for over one hundred years.





Photo: Lincoln & Welland Regimental Band awarded 1st Place at the The Warriors Day Parade at the August 20, 2022 Commemoration of the 100th Anniversary

68 Royal Canadian Army Cadet Corps was formed 23 May 1900 as St. Catharines Collegiate Institute Cadet Corps and is now affiliated with the Lincoln & Welland Regiment. Today, the Cadet Corps continues to parade out of the armoury on Lake St. and continues its long tradition of excellent leadership/citizenship development. Many of their members over the years have gone on to serve in the unit and continue to serve the nation in other elements of the Canadian Armed Forces.

Cadet Corps: Cadet Corps have been in existence in Canada from the middle 1800s, the general belief being that the training of young men & women would enhance the defence capabilities of the country.

68 Lincoln & Welland Regiment Cadet Corps
613 Lincoln & Welland Regiment Cadet Corps
162 Ridley College Cadet Corps
2968 Lincoln & Welland Regiment Cadet Corps
(Robert Land Academy)

The Lincoln and Welland Regiment Band

From the time of Butler's Rangers, music has always been part of the fabric of the Regiment. Like their British regular counterparts, the Rangers carried a Drummer and a Fifer on the strength of each company. The nature of duty of the Rangers probably precluded the musicians' employments as such, other than in garrison, but while on campaign they undertook some hazardous duties. Historical records note that when a flag of truce was sent forward to the enemy it was often accompanied by a Drummer or Fifer.

The Lincoln & Welland Reg-

iment band origins date back to the late 1700's as a drum corp with the Lincoln Militia. The drum corp transformed over time to a military brass band until 2009 when it was disbanded from the military. Composed of volunteers, the band continue to play as a brass band, supporting the Regiment and local community in a wide variety of events each year.

In the early 1950s, the Regimental Association and the Band began attending the Warriors' Day Parade at the Canadian National Exhibition, a practice which

continues. On Saturday, August 20th, 2022, in Commemoration of the 100th Anniversary of The Warriors' Day Parade this unique and spectacular event that includes the colour, sound and traditions of our Regiments and Squadrons as well as the recognition of those who served and those who serve today. The Lincoln & Welland Regiment Association Band was awarded 1st Place in the Elwood Hughes Trophy, (Bands, Brass, Trumpet, or Bugle). Plus was the winner of the Frank Jamieson Memorial Trophy, Parade Champions winning the highest score in all contingents.

The Lincoln & Welland Band has been a voluntary status since the 1994 overall reduction of military bands. These dedicated volunteers practise at the armoury several times a week. They represent the Lincoln & Welland Regiment throughout Niagara by participating in parades, events including Remembrance Day ceremonies, annual regiment Levy (Jan 1st annually) and so much more throughout the year.



Photo: Drew Neufeld, Curator at the Niagara Military Heritage Centre

Military Heritage in Niagara

In Niagara there is a rich history of significant numbers of historic sites, buildings, and monuments. Together, they form "Niagara National Historic Sites" and help tell the story of 250 years of Canadian History, from the early Loyalist days to the War of 1812, the 1837 Rebellion, as well as the story of Camp Niagara during the Boer War, First World War, Second World War, and Korean War. As military reserve properties, all these sites (except Navy Island) were used to train soldiers during the First World War and the Second World War for overseas service.

Fort George, located in Niagara-on-the-Lake alongside the Niagara River is a National Historic Site. To protect their interests in Upper Canada, the British constructed a fort across the Niagara River from Fort Niagara (granted to the United States). By 1802, Fort George had been completed and became headquarters for the British army, local militia, and the Indian Department. During the War of 1812, Fort George served as the headquarters for the Centre Division of the British Army. These forces included British regulars, local militia, aboriginal warriors, and Runchey's corps of freed slaves. Major General Sir Isaac Brock, the saviour of Upper Canada served at Fort George until his death at the Battle of Queenston Heights in October 1812.

Fort George is an important site in Niagara that brings life inside back to 1812. Visitors may

wander through eight restored buildings, hear military music performed by the 41st Fife and Drum Corps, watch live musket demonstrations and enjoy beautiful views of the mighty Niagara River. Trained interpreters in historical dress share stories of the lives of British soldiers and their families, as well as the fateful day the fort fell to American forces.

Niagara Parks Heritage brings visitors back in time to learn more about Indigenous history, the blazing battles of the War of 1812, our role as a last stop on the Underground Railroad, and so much more at each of their heritage sites on the Niagara Parkway.



Photo: Doug Reece at the Niagara Military Heritage Centre



In commemoration of the 210th year of the Battle of Queenston Heights, reactors came from across North America to participate in the historic battle. Commander of the British Army, Major General Sir Isaac Brock lost his life in this battle and an historic monument stands on Queenston Heights. Visitors may climb the spiral stairs (235 steps) of the monument that commemorates Major General Brock's heroic leadership and courage and marks his final resting place. (Note: Seasonal hours May to Oct)

The Niagara Falls History Museum was founded by Thomas Barnett, an Englishman from Birmingham in

1827. In 2012 the city opened the Niagara Falls History Museum and is open to the public. The City of Niagara Falls has been building a new cultural building and new Farmers Market building – known now as the “Exchange” is under construction and will be opening next spring. Inside the museum is the Woman’s Work is Never Done, War of 1812 Hall, plus so much more.

In October tours were offered as an unique opportunity to discover Niagara Falls through a visit to one of the most historic cemeteries in Canada. Led by a costumed guide, the human drama unfolds as guests wander the

grounds and happen upon theatrical performances that provide a glimpse into the lives of some of the people from Niagara Falls city history. The museum has other community and visitor events such as Halloween Music Trivia.

Niagara Military Heritage Centre, home of the Lincoln & Welland Regiment Museum. Honour the citizen soldiers and peacekeepers that served and continue to serve.

The Story behind the Poppy In Flanders Field

“In Flanders Fields” was written by Lieutenant Colonel John McCrae, an army doctor who cared for wounded soldiers on the Western Front. He noticed wild red poppies growing on the desolate battlefields and among the burial places of fallen soldiers, which inspired his well-known verses.

Canadians across the country on November 11th Remembrance Day services will recite these famous verses.

City of Niagara Falls, Ontario, Canada Friday November 11th, 2022, service will take place in the Fairview Cemetery. Royal Canadian Legion members, dignitaries, veterans, families, and public will attend to pay their respects. 10:45 am will begin the marching procession, followed by the 11 am Minute of Silence.

Legions across the country continue the Remembrance Day tradition to honour our fallen soldiers, injured and currently serving members. This vibrant wild red flower, known as the “Poppy” reminds all of those who serve our country from veterans of WWI, WWII, Afghanistan, and all missions served domestically and internationally.



Photo: Today's soldiers LCol Chris Canavan & RSM Fred Randall training 2021

City of Niagara Falls History Located at 5810 Ferry St. Niagara Falls

In Flanders fields the poppies blow
Between the crosses, row on row,
That mark our place; and in the sky
The larks, still bravely singing, fly
Scarce heard amid the guns below.

We are the Dead. Short days ago
We lived, felt dawn, saw sunset glow,
Loved and were loved, and now we lie,
In Flanders fields.

Take up our quarrel with the foe:
To you from failing hands we throw
The torch; be yours to hold it high.
If ye break faith with us who die
We shall not sleep, though poppies grow
In Flanders fields.

The Poppy Project with local artists was a collaborative community art project which began several years ago and each year during the Remembrance Day – week. The poppies were knitted or crochet by our commu-

nity seniors and each year the poppies will be displayed each year on both the interior and exterior of the historic 1874 Stone building that houses the Niagara Falls History Museum.



Photo credit: Niagara Falls Tourism

BUSINESS LINK MEDIA GROUP Celebrated Hamilton's 40 Under Forty Leaders During Their 9th Annual Awards Ceremony on October 26, 2022

Business Link Media Group proudly recognized 40 of Hamilton's finest 40 Under Forty Business Leaders during their 9th annual gala event which was held at the Carmen's Group on October 26, 2022. Accolades were shared during the 300 people in attendance that recognized the incredible achievements of these business leaders. Proud family, friends, employers, and esteemed alumni of 40 Under Forty business leaders participated in the celebration.

Masters of ceremony Kristine Leadbetter-Gold and Dan Otter introduced the 40 award recipients, which included a diverse range of local entrepreneurs, business professionals and members of the non-profit sector. Joining in the celebration were dignitaries and past award-winners including, Mayor Fred Eisenberger and 14 alumni were also in attendance to offer their encouragement to the 2022 Hamilton's winners.



Group Photo of 40 Under Forty Winners at the Ceremony



Charlie Agro, Co-Chair of 40 Under Forty Hamilton, opening remarks “to all the winners, what you’ve accomplished and will continue to accomplish is incredible. You’re the completed embodiment of hard work, community engagement, professionalism, and entrepreneurship.”

Marilyn Tian, Business Link Media President & CEO and Chair of the 40 Under Forty Hamilton, closing remarks “congratulated this year’s winners and thanked everyone who took the time to submit their nominations. The Business Link team would also like to thank its many sponsors and patrons for their ongoing support. These annual awards wouldn’t be possible without the generosity of its many businesses and volunteers.”

Ms. Tian, who is in her early 40s commented to the winners, “in this golden age of 40 or under, enjoy this time in your life. You have passion, energy, motivation, and dream without fear. There is no doubt to say that Hamilton has another incredible group of young leaders guiding us into the future.”

Best In Class award winner--Giancarlo Salvatore Ferko, Plaza Nissan.

In the past 9 years, Business Link Media Group’s 40 Under Forty Business Achievement Awards have recognized over 360 of Hamilton’s next generation of business leaders.

Serving the Golden Horseshoe since 2003, Business Link Media Group has evolved from a direct mail publishing company into a multi-channel networking and promotion marketing company by integrating and offering digital publications, video productions, social media marketing, community events, and international conferences. The firm has also expanded its reach substantially by addressing the growing global and future technology marketplace.

Nominations are now open for 2023 40 Under Forty Business Achievement Awards,

<https://businesslinkhamilton.com/40-under-forty/>

Military: Research & Development

It is no secret that military operations are changing. New technologies are rapidly emerging to support national defense efforts, many of which the mainstream population has yet to even learn of or experience for themselves. If we acknowledge historical trends on warfare, although destructive, it is known to leave revolutionary discoveries in its wake. Nuclear power, digital cameras, the Internet, and even 2-way radio communication (discovered in the 1930's by Canadian inventor, Donald Lewes Hings) are all a product of military development in technologies.

**This begs the question:
"What revolutionary technologies will come out of the military next?"**

Let's Talk About Super Speed

Hypersonic weapons are no new concept; however, it turns out that the requirement of breaking the sound barrier is proving quite challenging. Global security and aerospace leader Lockheed Martin have been working on and perfecting hypersonic technology for over 60 years, and it's shaping up to be a game changer. Hypersonic refers to a projectile that travels more than five times the speed of sound (above Mach 5) and in some instances can reach up to 25 times the speed of sound. For example, whereas a flight from Toronto to Los Angeles would normally take eight hours, a hypersonic missile could travel that distance in just one hour, moving through the air at an astounding 3000 miles per hour. Lockheed Martin goes on to describe how this technology will allow for ultra-fast speed while maintaining maneuverability,

"Hypersonic systems are a game-changer for national security. Creating hypersonic technology presents several tough, complex engineering challenges. Hypersonic systems will travel at Mach 5 and potentially even faster. To give you an idea, at Mach 5, you're traveling over a mile per second" (Source. Hypersonics | Lockheed Martin)

This statement indicates that military organizations will need to "go back to the drawing board" in order to effectively and proactively deal with the threats presented by Hypersonic travel. Some of the engineering challenges which military organizations may face are outlined by Lockheed Martin, including Hypersonic missile detection, outfitting fighter jets with engines capable of keeping up with or out-maneuvering a Hypersonic

aircraft or projectile, building exterior hulls which can withstand extreme heat, and maintaining the accuracy of data which comes from onboard sensors (a monumental task when considering the extreme speeds of Hypersonic travel)

Hypersonic jets are actively being developed for use in military aircrafts, raising the question of whether commercial flights are a viable option for future air travel. Thanks to the recent attention (and funding) being directed towards Hypersonic engine development in the military, we may one day be able to travel the globe at the speed of sound...or perhaps even faster.



The Military Welcomes Artificial Intelligence

Artificial Intelligence (AI) is also being heavily explored, with applications ranging from missile detection to autonomizing drones for independent operations. Unmanned Aerial Vehicles (UAV) are of particular interest due to their cheap cost, and removal of manual pilot operation which eliminates the risk of pilot injury. A new generation of UAVs and military drones are coming, with a frightening new addition: AI assistance.

Hive Minded Drones

The aid of artificial intelligence and 5G data transmission, will likely allow the next generation of military drones to operate in bee-swarm like groupings and will be capable of communicating with one another while maneuvering precisely to avoid collisions. An example of this functionality provided by scientists at Zhejiang University can be viewed here:

<https://www.youtube.com/watch?v=L0fJOEHHfOA&t=29s>

Additionally, swarm drones are potentially applicable in a wide variety of emergency service scenarios, including search and rescue operations, assistance with fire extinguishing, enabling enhanced security detail for large crowds, or perhaps even assisting in police pursuits (like the Porsche Taycan concept car with deployable scouting drone). If you are not involved with the military or emergency services, you can still look forward to cinematography benefits from this new technology. This will equate to higher quality movies and television shows with crazy new perspectives, detailed real estate photography,

increased output quality of photogrammetry scans (3-Dimensional models generated using pictures), and beautiful engaging drone light shows.

It will be interesting to see how competitive drone racing will adapt to the new technologies, potentially resulting in faster operating speeds and even closer flight proximities without collisions. Perhaps the most beneficial civilian application of coordinated drone swarming will be in relation to the e-commerce industry and more specifically, within Amazon's shipping empire. As Amazon continues to explore drone deliveries, it seems inevitable that AI assistance will find its way into their drone delivery system, to allow for efficient pick-ups and drop-offs from its distribution centers. Companies like Amazon could benefit from artificial intelligence with reduced shipping times and a significantly lower risk of drone or product damages that result from collisions. AI assistance would also allow delivery drones to better detect obstacles and threats to its flight path, while simultaneously warning other drones on the same network about potential threats.

Can We Have Infinite Clean Energy?

Arguably the most revolutionary and terrifying technology being perfected for the next generation of warfare is Nuclear Fusion. Many people believe that history repeats itself and that we should learn from our past, to predict possible future trends. If the discovery of nuclear fission atomic weaponry was any indication of where we are headed next, nuclear fusion bombs may establish the next threat of Mutually Assured Destruction; however, they will also provide an opportunity to reverse some of the damages we've caused to our environment. Although nuclear power is often negatively associated with the ending of World War II or the infamous reactor meltdowns of Fukushima & Chernobyl, nuclear energy is the safest and by far the most efficient means of energy production.

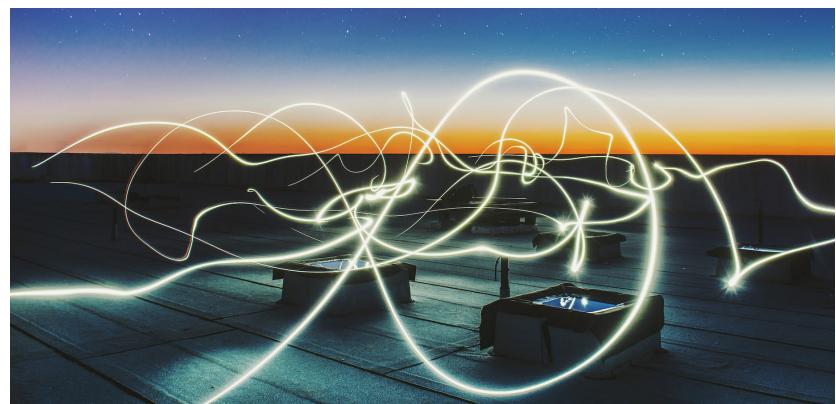
Following shortly after WW2, the United States of America had envisioned a future powered by nuclear energy. America in the 1950's could have been accurate with their assumption,



had it not been for the widespread fear of nuclear power resulting from tragedies; some may argue that the USA was predicting our future. As of 2021, it is estimated that 50% of America's clean energy is generated via nuclear sources (Department of Energy, 2021). Canadian nuclear power is also gaining traction, with 59% of Ontario's power generated via nuclear power.

Today in 2022, Nuclear fission occurs in all six Canadian plants and all the 92 reactors found in the United States (Uranium and nuclear power facts (nrcan.gc.ca). Unfortunately, fission (meaning; atoms splitting) generates radioactive byproducts that are extremely hazardous to our planet and stick around for millions of years, and the process of splitting results in an unpredictable chain of explosive reactions. On the other hand, fusion (demonstrated to us in the center of our solar system by the Sun) is an extremely efficient nuclear fusion reactor which combines atoms of Hydrogen, to form atoms of Helium, resulting in a massive release of energy. This provides us with essential energy in the form of heat and light.

Nuclear fusion also foregoes the generation of harmful radioactive byproducts, while still managing to provide several times more energy than fission is capable of. So, why are we not slamming Hydrogen atoms together to fix our energy problem right now?



Energy Energy Energy!

To produce a nuclear fusion reaction, tremendous amounts of energy are required. More specifically, temperatures exceeding 6 times hotter than the core of the Sun are necessary to generate a fusion reaction. The International Atomic Energy Agency (IAEA) states that,

"A prototype of a fusion reactor (DEMO) is expected to be built by 2040. Electricity generation and exploitation is also expected to take place in the second half of the century, depending on funding and technical advancement."

Obviously, this statement serves as proof that nuclear fusion is still a way off from meeting our energy demands; however, this could be a sign that history may indeed be repeating itself. A nuclear revolution began during the second World War in the 1940s, and it is looking increasingly more likely that a resurgence of nuclear development may occur proceeding the next (eventual) world conflict. Nuclear fusion is being developed separately for military and industrial applications but developmental streams will undoubtedly cross, as papers and findings are published more frequently to the public domain. Scientists are currently researching methods of increasing reactor energy output and reducing the amount of energy required to sustain a fusion reaction.

Writer's Opinion - Ash Balakrishnan

When some people think of the military, it may invoke feelings of fear, confusion, or raise the general question "why are we fighting in the first place?"

To these individuals, I invite you to consider another perspective. In my opinion, there is no "evil" nation, or generalized "bad" race of people. A flag is not the true source of war. Sure, conflicts may officially be attributed to colonialism, international policing, or disputes over physical resources like oil; however, this is not the root of our underlying tendency to fight with one another.

I believe that the primary factor that prevents

us from establishing a peaceful society, is the necessary existence of competition. Humanity has evolved to assert total dominance of our ecosystems similar to an apex predator. We are free of natural competition (with the exception of disease) and as a result, the arms race phenomenon was born. Fear of cultural suppression has led to the endless development of superior technologies to disincentivize colonialism and prevent a world conflict from breaking out once again. This competition with one another is what allows humanity to think deeper, innovate faster, and ultimately produce revolutionary technologies.



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