



# The Military Order of the World Wars

**The Association of All Military Officers**  
**Chapter 131, West Valley, Arizona**  
**P. O. Box 7938, Surprise, AZ 85374**  
**WEB SITE-[www.mowwestvalleyaz.org](http://www.mowwestvalleyaz.org)**



Bulletin No. 4

**SPECIAL EDITION**

June 2022



## Commander's Message

**John Hannan**  
**Commander**

Just a couple days ago G.O. Jensen inducted me as the Commander of MOWW Chapter 131; five years after recruiting me into the West Valley Chapter and the MOWW. It's a privilege to serve. The leadership bar has been set high and I'll do my best to measure up. I would like to especially thank both Buz Isban and Ken Coffman for holding this chapter together during the pandemic outbreak. Not an easy task, but they managed to not only hold it together but also recruit new members.

I have a great team to help me while we move forward. Linda Howry is Senior Vice and Randy Meyer is Junior Vice and we have many

## Breakfast Meeting

An in-person meeting is planned for Oct 8, 2022 at 1100 at Sun City Festival, Sage Center.

core companions helping with the management of our activities.

We'll be challenged in the near future, for different reasons, but also including the lingering effects of Covid. One issue is a monthly meeting location. Fellowship Square has been a very good place to meet but, rightfully, they have continued concerns with Covid. So as an interim measure, we'll be meeting at Sun City Festival, beginning this fall thanks to Ken Blanchard and The Festival Veterans Club. We'll keep you informed. It is a great facility, and starting in October we'll resume breakfast meetings. I know it will be a lengthy drive for some of you but, please bear with me. Even though we are still in an adjustment phase, please be patient and please attend our monthly meetings. Our missions of community involvement, patriotism, and in particular our youth are just too important to leave them unaddressed. If not us - who? So please stay involved and remember guests are welcome. So, invite a friend.

We just had one of our best MOC's and hope to replicate that success next February 21, 2023 at Palm Ridge Recreation Center in Sun City West. Jerry Wojtas is deeply involved in the success of the MOC. He is the guy who notifies and coordinates all of the VSOs and JROTC programs and as a result gets a great

## ***SPECIAL FEATURE*** (Page 14)

### **Going Underground: Ukraine's Subterranean and History of Tunnels in Warfare**



number of “flags” resulting in great attendance. But you too can help, please bring a guest. Anyone who experiences this event feels the charge of patriotism.

AZLYC, thankfully, is in great shape and under the care of two of our strongest leaders, Buz Isban and Fred Garnett.

I plan to attend the MOWW annual Conference in Jacksonville, Florida this summer and look forward to hearing about and hopefully voting for the expansion of membership opportunities for MOWW.

I got hooked on MOWW after attending a couple JROTC awards ceremonies. It's a great opportunity to mingle with these bright and focused young future military personnel. I was very impressed with the caliber of these cadets and their dedication, plus the values they were learning, i.e., trust, leadership, integrity, commitment and courage to name a few—not at all like what the TV news is telling us about what is being taught in our schools. Don't miss out; it's a joy to attend one of these events. We'll ask for volunteers; please consider being a presenter and don't rob yourself of this opportunity - you'll get recharged - I promise.

For the sake of our mission, we need to be available for these opportunities to ensure our values and the spirit of patriotism are not only encouraged but also passed on. For that reason, we have had to resort to calling in the Marines to increase our membership. When you're in a “we cannot afford to fail” position, Marines are required, and G.O. Jenson has stepped up to that critical mission. This will be the focus for the upcoming year and we need to count on you by your continued monthly participation and hopefully inviting a guest along. Word of mouth is our best recruiting tool.

See you in October and have a healthy and safe summer.

It is nobler to serve than to be served!

John F. Hannan  
Commander MOWW Chapter 131

### Surgeon's Note

By Linda Howry RN MS

### Keeping your immune system healthy Part 3

The best way to keep your immune system functioning at its optimum is to have a healthy lifestyle. Since the immune system is an interworking system, it functions at its best when you protect your body from environmental insults. You cannot protect this system from its genetic makeup or aging.

Even though products claim to boost the immune system, there is no scientific evidence to support this belief. This is because of complex interaction within this system. Which cells do you boost and what does that do to the interaction with its other components?

There are a number of ways to maintain the health of your immune system:

- Reduce stress because it interferes with the immune system response, although the exact causes are unknown. It is known that stress interferes with healthy body functioning.
- Eat a healthy well-balanced diet containing whole plant foods like fruits, vegetables, legumes, and nuts which are high in antioxidants. They are also high in fiber and Vitamin C. All help reduce inflammation. Eat less fatty and high sugar foods. Stay hydrated.
- Maintain a healthy weight and get regular exercise. This improves the cardiovascular system and prevents undue stress on other body organs.
- Get adequate sleep and rest. Adults need between 7 to 8 hours of sleep per night.

- Wash hands frequently and for 20 seconds and avoid touching your face, mouth, and eyes to help prevent the introduction of infections.
- Limit environmental insults, especially smoking as it directly affects the respiratory and cardiovascular systems. Drink only moderate amounts of alcohol as it has adverse effects on the liver.

Some doctors are recommending the following vitamins, and supplements. Before taking any of these discuss the amounts to take. Remember some of these may interfere with your medical conditions or medications you are currently taking. When you list medications, you take when talking to your doctor, be sure to include all vitamins, supplements and over the counter medications you take. Multiple vitamin complex supplements vary in the amount of each vitamin contained in one pill.

Some scientific studies have shown the following vitamins and supplements have been helpful to the immune system.

- Zinc is a mineral needed in immune cell development and communication between these cells and it plays a role in the inflammatory response.
- Glutamine, an amino acid that supports the T-cells and B-cells of the immune, especially during a viral infection.
- Elderberry and echinacea appear to increase white blood cells which are necessary for fighting infections.
- Vitamin D is really a hormone that plays a role in the strength of the immune system. Vitamin D comes from the sun. The level of Vitamin D can be checked in the lab and your doctor can prescribe how much you should take.
- Vitamin C has been shown to decrease the length of viral infections, but has not shown to prevent them.

*Harvard Medical Health Publishing, Review Scout, Nutrition Essentials*

## AZYLC and CINC Solicitation

Buz Isban



### Arizona Youth Leadership Conference (AZYLC) Update:

Due to a confluence of unfortunate factors, this year's conference has been **cancelled**. That makes three in a row. Several schools are not participating due to the inability to have traditional classes resulting in low numbers in their units. Some have an issue with finger prints for staff (even though they are vetted) and some with the requirement to have full COVID-19 vaccinations with boosters. (Most schools do not require them.) In addition, the cost per delegate is estimated to have risen to over \$530 per delegate verses less than \$400 per delegate in the recent past. Thank you to those who have tried to support this year's AZYLC. I am optimistic that next year there will be a turn around and we will be able to support this important learning opportunity at a reasonable cost with maximum participation.

### CINC's 2021-22 \$100,000 Solicitation Update.

Thank you to all who have participated. We have exceeded the target again this year. Bravo Zulu!

## Treasurer's Report

Buz Isban  
Treasurer



### Financial Report

As of 29 May 2022

<b>General Fund</b>	\$14,902.68
Petty Cash	\$50.00
<b>TOTAL</b>	<b>\$14,952.68</b>
<b>Patriotic Savings Account</b>	<b>\$6,143.35</b>
Endowment Fund	\$15,208.84
<b>GRAND TOTAL</b>	<b>\$36,304.87</b>



## JROTC Awards



Col Gerald O Jensen, USMC (Ret), presented the MOWW JROTC medal with ribbon to Marine JROTC Cadet Isabell Lopaz from Tolleson High School on 13 May 2022.



Col Randy Meyer, USAF (Ret), presenting the MOWW JROTC medal with ribbon at Westview High School at their awards ceremony. The recipient was Cadet 1stSgt Orlando Moreira who will be the Company 1Sgt next year in their Marine Corps JROTC Unit.



Col Randy Meyer, USAF (Ret), presenting the MOWW JROTC medal with ribbon to the outstanding AFJROTC Cadet at Agua Fria High School. Senior Aerospace Science Instructor, Col. Derek S. Blough, USAF (Ret) looks on.



Maj Ken Coffman, USA (Ret), presenting the MOWW JROTC medal with ribbon to the outstanding Cadet at the Thunderbird High School NJROTC Awards night.



## New Officer Induction



Commander Buz Isban left and Commander Elect John Hannan Perpetual Pin.



Col Gerald Jenson left, inducting Captain John Hannan as Chapter Commander.

## This Day in History

**June 3, 1808 Birthday** - Confederate president Jefferson Davis (1808-1889) was born at Todd County, Kentucky. After the Southern states formed the Confederacy in 1861, he hoped to be named commander of the Confederate military forces but was instead chosen to be president, serving until 1865. Following the Civil War, he was imprisoned but never brought to trial. He died at age 81 in New Orleans.



Col Gerald O Jenson, USMC (Ret), presented the MOWW JROTC medal with ribbon to AFJROTC Cadet 2<sup>nd</sup> Lt Colton Fritz, a junior at Buckeye HS, on 29 Apr, 2022.



SMG Fred Garnett, USA (ret), presents MOWW Medal and ribbon to Navy JROTC at Apollo High School on 5 May 2022.

**June 4, 1944** - During World War II in Europe, Rome was liberated by the U.S. 5th Army, led by General Mark Clark. Rome had been declared an open city by German Field Marshal Albert Kesselring amid Allied concerns the Germans might stage a Stalingrad-style defense that would devastate the historic 'Eternal' city.

**June 6, 1944** - D-Day, the largest amphibious landing in history, began in the early-morning hours as Allied forces landed in Normandy on the northern coast of France. Operation Overlord took months of planning and involved 1,527,000 soldiers in 47 Allied divisions along with 4,400 ships and landing craft, and 11,000 aircraft. The Germans had about 60 divisions spread along France and the Low Countries. American forces landed on two western beaches, Utah and Omaha, while British and Canadian troops landed farther east on Gold, Juno and Sword beaches. By the end of the day 150,000 Allied soldiers and their accompanying vehicles had landed with 15,000 killed and wounded.

**June 6, 1755 Birthday** - American patriot Nathan Hale (1755-1776) was born in Coventry, Connecticut. During the American Revolution, he volunteered for a dangerous spy mission in Long Island and was captured by the British on the night of September 21, 1776. Brought before British General William Howe, Hale admitted he was an American officer. Howe ordered him to be hanged the following morning. As Hale mounted the gallows he uttered, "I only regret that I have but one life to lose for my country."

**June 8, 1874** - Apache leader Cochise died on the Chiricahua Reservation in southeastern Arizona. After a peace treaty had been broken by the U.S. Army in 1861, he waged war against settlers and soldiers, forcing them to withdraw from southern Arizona. In 1862, he became principal chief of the Apache's. He and 200 followers avoided capture by hiding in the Dragoon Mountains. In June of 1871, Army General George Crook assumed command in Arizona and managed to win the allegiance of many Apaches. Cochise then surrendered. He disappeared

briefly in the spring of 1872, but returned and settled on the reservation where he died.

**June 10, 1942** - In one of the most infamous single acts of World War II in Europe, all 172 men and boys over age 16 in the Czech village of Lidice were shot by Nazis in reprisal for the assassination of SS leader Reinhard Heydrich. The women were deported to Ravensbrück concentration camp where most died. Ninety young children were sent to the concentration camp at Gneisenau, with some later taken to Nazi orphanages if they were German looking. The village was then completely leveled until not a trace remained.

**June 11, 1991** - Mount Pinatubo in the Philippines erupted, spewing ash into the air, visible over 60 miles. The surrounding areas were covered with ash and mud created by rainstorms. Nearby U.S. military bases (Clark AB) were also damaged. (The US turned the base over to the Philippine government in Nov 1991. Ed.)

**June 11, 1994** - After 49 years, the Soviet military occupation of East Germany ended. At one time there had been 337,800 Soviet troops stationed in Germany. Over 300,000 Russians died during World War II in the Battle for Berlin.

**June 12, 1898** - The Philippines declared their independence from Spain. The islands were named after King Philip II. Once freed from Spain, the islands were then invaded and occupied by U.S. forces. They became an American colony and remained so until after World War II.

**June 12, 1924 Birthday** - George Bush, the 41st U.S. President, was born in Milton, Massachusetts, June 12, 1924. During World War II, he became the youngest pilot in the U.S. Navy. Elected to the presidency in 1988, President Bush is best remembered for forging a successful multinational military alliance following the invasion of Kuwait on August 2, 1990, by Saddam Hussein's Iraqi army.

**June 14, 1775** - The first U.S. Military service, the Continental Army consisting of six companies of riflemen, was established by the Second

Continental Congress. The next day, George Washington was appointed by a unanimous vote to command the army.

**June 14, 1906 Birthday** - Photojournalist Margaret Bourke-White (1906-1971) was born in New York City. In 1936, she became one of four original staff photographers for Life Magazine. She was the first woman to become an accredited war correspondent during World War II. She covered the Italian campaign, the siege of Moscow and the American crossing of the Rhine into Germany. Her photographs of Nazi concentration camps stunned the world. She also served as a war correspondent during the Korean War.

**June 18, 1812** - After much debate, the U.S. Senate voted 19 to 13 in favor of a declaration of war against Great Britain, prompted by Britain's violation of America's rights on the high seas and British incitement of Indian warfare on the Western frontier. The next day, President James Madison officially proclaimed the U.S. to be in a state of war. The War of 1812 lasted over two years and ended with the signing of the Treaty of Ghent in Belgium on December 24, 1814.

**June 18, 1815** - On the fields near Waterloo in central Belgium, 72,000 French troops, led by Napoleon, suffered a crushing military defeat from a combined Allied army of 113,000 British, Dutch, Belgian, and Prussian troops. Thus ended 23 years of warfare between France and the other powers of Europe. Napoleon was then sent into exile on the island of St. Helena off the coast of Africa. On May 5, 1821, the former vain-glorious Emperor died alone on the tiny island, abandoned by everyone.

**June 19, 1865** - In Galveston, Texas, upon the arrival of Union troops, Maj. Gen. Gordon Granger read General Order No. 3: "The people of Texas are informed that, in accordance with a proclamation from the Executive of the United States [President Lincoln], all slaves are free. This involves an absolute equality of personal rights and rights of property between former masters and slaves..." As a result, an estimated 250,000 enslaved African Americans in Texas

were finally freed. The day is now celebrated as Juneteenth to commemorate Emancipation and to recognize the struggle for freedom and equality of African Americans.

**June 19, 1953** - Julius and Ethel Rosenberg were executed by electrocution at Sing Sing Prison in New York. They had been found guilty of providing vital information on the atomic bomb to the Soviet Union during 1944-45. They were the first U.S. civilians to be sentenced to death for espionage and were also the only married couple ever executed together in the U.S.

**June 20, 1782 Birthday** - American military hero and actor Audie Murphy (1924-1971) was born in Kingston, Texas. He was the most decorated American soldier of World War II, awarded 37 medals and decorations, including the Medal of Honor for single-handedly turning back a German infantry company by climbing on a burning U.S. tank destroyer and firing its .50-cal. machine gun, killing 50 Germans. He later became an actor in western and war movies and made 45 films including; *The Red Badge of Courage* (1951), *Destry* (1954), and *To Hell and Back* (1955), based on his autobiography. He died May 28, 1971, in a plane crash near Roanoke, Virginia.

**June 22, 1941** - Starting at 3:15 am, some 3.2 million German soldiers plunged headlong into Russia across an 1800-mile front, in a major turning point of World War II. At 7 am that morning, a proclamation from Hitler to the German people announced, "At this moment a march is taking place that, for its extent, compares with the greatest the world has ever seen..."

**June 23, 1865** - The last formal surrender of Confederate troops occurred as Cherokee leader and Confederate Brigadier General Watie surrendered his battalion comprised of American Indians in the Oklahoma Territory.

**June 24, 1948** - Soviet Russia began a blockade of Berlin. Two days later the Allies responded with an emergency airlift to relieve two million isolated West Berliners. During the Berlin Airlift, American and British planes flew about



278,000 flights, delivering 2.3 million tons of food, coal and medical supplies. A plane landed in Berlin every minute from eleven Allied staging areas in West Germany. The Russians lifted their blockade of Berlin on May 12, 1949, however the airlift continued until September 30th.

**June 25, 1862** - During the American Civil War, the Seven Days Campaign began as Confederate General Robert E. Lee launched a series of assaults to prevent a Union attack on Richmond, Virginia. The Campaign included battles at Oak Grove, Gaine's Mills, Garnett's Farm, Golding's Farm, Savage's Station, White Oak Swamp and Malvern Hill, resulting in over 36,000 casualties on both sides. Despite losing the final assault at Malvern Hill, the Confederates succeeded in preventing the Union Army from taking Richmond.

**June 25, 1876** - General George A. Custer, leading 250 men, attacked an encampment of Sioux Indians near Little Bighorn River in Montana. Custer and his men were then attacked by 2000-4000 Indian braves. Only one scout and a single horse survived 'Custer's Last Stand' on the Little Bighorn Battlefield. News of the humiliating defeat infuriated Americans and led to all-out war. Within a year, the Sioux Indians were a broken and defeated nation.

**June 25, 1950** - The Korean War began as North Korean troops, led by Russian-built tanks, crossed the 38th parallel and launched a full-scale invasion of South Korea. Five days later, U.S. ground forces entered the conflict, which lasted until July 27, 1953, when an armistice was signed at Panmunjom, formally dividing the country at the 38th parallel into North and South Korea.

**June 25, 1991** - Following the collapse of Soviet rule in Eastern Europe, the republics of Croatia and Slovenia declared their independence from Yugoslavia. Ethnic rivalries between Serbians and Croats soon erupted. In 1992, fighting erupted in Bosnia-Herzegovina between Serbians and ethnic Muslims. A campaign of terrorism and genocide, termed 'ethnic cleansing',

was started by the Serbs against the Muslims. At least two million people became refugees, and about 200,000 were missing and presumed dead. Violence in the region raged on through 1995 despite economic sanctions and the efforts of U.N. peacekeeping forces in the area.

**June 28, 1862** - During the American Civil War, the siege of the Confederate city of Vicksburg began as Admiral David Farragut succeeded in taking a fleet past the Mississippi River stronghold. The siege continued over a year.

**June 28, 1914** - Archduke Francis Ferdinand, Crown Prince of Austria and his wife were assassinated at Sarajevo, touching off a conflict between the Austro-Hungarian government and Serbia that escalated into World War I.

**June 28, 1919** - The signing of the Treaty of Versailles formally ended World War I. According to the terms, Germany was assessed sole blame for the war, forced to give up Alsace-Lorraine and overseas colonies, and pay reparations of \$15 Billion. The treaty also prohibited German rearmament.

### Future Events

**30 May** – Memorial Day Celebration at Sunland Memorial Park

**2-7 August** – MOWW National Convention in Jacksonville, Florida

**8 October** – Chapter Meeting

**21 February 2023** – Massing of the Colors

### Bulletin Deadline

The deadline for submission of articles for the October 2022 Bulletin is the 15<sup>th</sup> of September. If it is possible to get articles earlier, it would be very much appreciated. With all that is going on we will be flexible.

Email articles to [cbjerkaas@cox.net](mailto:cbjerkaas@cox.net)

Thank you.

Carlton Bjerkaas, Editor



## Chapter Meeting – May 2022

**Commander Buz Isban Leading the Chapter May Meeting. Awards were presented and the new Chapter Staff was installed.**



**Commander Buz Isban awarding Certificates of Appreciation to Chapter Companions at May 2022 Chapter meeting.**



Jerry Wojtas - MOC



### **Installation of Chapter Staff 2022-23.**

(L to R) Buz Isban, Treasurer; Randy Meyer, Junior Vice; Linda Howry, Senior Vice and Surgeon; Mel Howry, Adjutant; Carlton Bjerkaas, Bulletin Editor; Ken Coffman, Historian and Marshall; and Phil Hansen, Judge Advocate.



Pam Wojtas - Document Quality Control.





Ann Garnett - Monthly Meeting Coordination



GO Jenson – Membership



Fred Garnett - AZYLC, Patriotic Essay, MOC.



Carlton Bjerkaas - Bulletin Editor



Linda Howry - Monthly Surgeon General and Health Articles



Phil Hansen – Outstanding Service Award



Mel Howry - Monthly Meeting Minutes



Ken Coffman - MOWW National Citation





Sheri Jensen –

**THANK YOU !**  
**MidFirst Bank**  
**61796 W. Bell road Surprise, AZ 85374**



The Military Order of the World Wars, would like to thank, Mr. Phil Scroggins Assistant Vice President and Banking Manager for the generous donation of 15 cases water to support of the Military Order of the World Wars' Massing of the Colors and Remembrance Ceremony for those military members who serve and have served this great nation.

## *SPECIAL FEATURE*

# Going Underground: Ukraine's Subterranean Fighters Highlight the Benefit – and Long History – of Tunnels in Warfare



Servicemen of the Donetsk People's Republic militia look at bodies of Ukrainian soldiers placed in plastic bags in a tunnel, part of the Illich Iron & Steel Works Metallurgical Plant, the second largest metallurgical enterprise in Ukraine, in an area controlled by Russian-backed separatist forces in Mariupol, Ukraine, Monday, April 18, 2022. (AP Photo/Alexei Alexandrov, File)

26 Apr 2022

The Conversation | By Paul J. Springer

*The opinions expressed in this op-ed are those of the author and do not necessarily reflect the views of Military.com. If you would like to submit your own commentary, please send your article to [opinions@military.com](mailto:opinions@military.com) for consideration.*

Faced with the prospect of sending Russian troops into subterranean combat, Vladimir Putin demurred. “There is no need to climb into these catacombs and crawl underground,” he [told his defense minister on April 21, 2022](#), ordering him to cancel a planned storming of a steel plant in the besieged Ukrainian port city of Mariupol.



While Putin's back-up plan – to form a seal around trapped Ukrainian forces and wait it out – is no less brutal and there are reports that Russians [may still have mounted an offensive on the site](#), Putin's hesitancy to send his forces into a sprawling network of tunnels under the complex hints at a truth in warfare: Tunnels can be an effective tool in resisting an oppressor.

Indeed since the war began in February, reports have emerged of Ukrainian defenders [using underground tunnel networks](#) in efforts to deny Russian invaders control of major cities, as well as [to provide sanctuary for civilians](#).

As an [expert in military history and theory](#), I know there is sound thinking behind [using tunnels as both a defensive and offensive tactic](#). Such networks allow small units to move undetected by aerial sensors and emerge in unexpected locations to launch surprise attacks and then essentially disappear. For an invader who does not possess a thorough map of the subterranean passages, this can present a nightmare scenario, leading to massive personnel losses, plummeting morale and an inability to finish the conquest of their urban objective – all factors that may have factored in Putin's [decision not to send troops underground](#) in Mariupol.

## A history of military tunneling from ancient roots

The use of tunnels and underground chambers in times of conflict is nothing new.

The use of tunnels has been a [common aspect of warfare for millennia](#). Ancient besieging forces used tunneling operations as a means to weaken otherwise well-fortified positions. This typically required engineers to construct long passages under walls or other obstacles. Collapsing the tunnel weakened the fortification. If well-timed, an assault conducted in the immediate aftermath of the breach might lead to a successful storming of the defended position.

One of the earliest examples of this technique is [depicted on Assyrian carvings](#) that are thousands of years old. While some attackers climb ladders to storm the walls of an Egyptian city, others can be seen digging at the foundations of the walls.

[Roman armies](#) relied heavily upon sophisticated engineering techniques such as putting arches into the tunnels they built during sieges. Roman defenders also perfected the [art of digging counter-tunnels](#) to intercept those used by attackers before they presented a threat. Upon penetrating an enemy tunnel, they flooded it with caustic smoke to drive out the enemy or launched a surprise attack upon unsuspecting miners.

The success of tunneling under fortifications led European engineers in the Middle Ages to design ways to thwart the tactic. They built castles on bedrock foundations, making any attempt to dig beneath them much slower, and [surrounded walls with moats](#) so that tunnels would need to be far deeper.

Although tunneling remained an important aspect of sieges through the 13th century, it was eventually replaced by the introduction of gunpowder artillery – which proved a more effective way to breach fortifications.

However, by the mid-19th century, advances in mining and tunnel construction led to a resurgence in subterranean approaches to warfare.

During the Crimean War in the 1850s, British and French attackers attempted to tunnel under Russian fortifications at the [Battle of Sevastopol](#). Ten years later, Ulysses S. Grant authorized an attempt to tunnel [under Confederate defenses](#) at the siege of Petersburg, Virginia. In both cases, large

caches of gunpowder were placed in chambers created by tunneling under key positions and detonated in coordination with an infantry assault.

### Tunneling in the age of airpower

With warfare increasingly relying on aircraft in the 20th century, military strategists again turned to tunnels – undetectable from the skies and protected from falling bombs.

In World War I, tunneling was attempted as a means to launch surprise attacks on the Western Front, potentially bypassing the other side's system of trenches and remaining undetected by aerial observers. In particular, the [Ypres salient](#) in war-ravaged Belgium was the site of hundreds of tunnels dug by British and German miners, and the horrifying stories of combat under the earth provide one of the most terrifying vignettes of that awful war.

During World War II, Japanese troops in occupied areas in the Pacific [constructed extensive tunnel networks](#) to make their forces virtually immune to aerial attack and naval bombardment from Allied forces. During amphibious assaults in places such as the Philippines and [Iwo Jima](#), American and Allied forces had to contend with a warren of Japanese tunnel networks. Eventually they resorted to using high explosives to collapse tunnel entrances, [trapping thousands](#) of Japanese troops inside.

The [Viet Cong tunnel networks](#), particularly in the vicinity of Saigon, were an essential part of their guerrilla strategy and remain a popular tourist stop today. Some of the tunnels were large enough to house hospital and barracks facilities and strong enough to withstand anything short of nuclear bombardment.

The tunnels not only protected Vietnamese fighters from overwhelming American airpower, they also facilitated hit-and-run style attacks. Specialized “[tunnel rats](#),” American soldiers who ventured into the tunnels armed only with a knife and pistol, became adept at navigating the tunnel networks. But they could not be trained in sufficient numbers to negate the value of the tunnel systems.

### Tunnels for terrorism

In the 21st century, tunnels have been used to facilitate the activities of terror organizations. During the American-led invasion of Afghanistan, military operatives soon discovered that al-Qaida had fortified a series of tunnel networks connecting naturally occurring caves in the [Tora Bora](#) region.

Not only did they hide the movement of troops and supplies, they [proved impervious to virtually every weapon](#) in the U.S.-led coalition's arsenal. The complexes included air filtration systems to prevent chemical contamination, as well as massive storerooms and sophisticated communications gear allowing al-Qaida leadership to maintain control over their followers.

And tunneling activity [in and around Gaza](#) continues to provide a tool for Hamas to [get fighters into Israeli territory](#), while at the same time allowing Palestinians to circumvent Israel's blockade of Gaza's borders.

### Soviet tunnels and Ukraine

Many of the tunnels being utilized today in Ukrainian efforts to defend the country were built in the Cold War-era, when the United States [routinely engaged in overflights](#) of Soviet territory.

To counteract the significant air and satellite advantage [held by the United States and NATO](#), the Soviet military dug underground passages under major population centers.

These subterranean systems offered a certain amount of shelter for the civilian population in the event of a nuclear attack and allowed for the movement of military forces unobserved by the ever-present eyes in the sky.

These same tunnels serve to connect much of the [industrial infrastructure](#) in Mariupol today – and have become a [major asset](#) for the outnumbered Ukrainian forces.

Other Ukrainian cities have similar systems, some dating back centuries. For example, Odesa, another key Black Sea port, has a [catacomb network](#) stretching over 2,500 kilometers. It began as part of a limestone mining effort – and to date, there is [no documented map](#) of the full extent of the tunnels.

In the event of a Russian assault on Odesa, the local knowledge of the underground passages might prove to be an extremely valuable asset for the defenders. The fact that more than 1,000 entrances to the catacombs have been identified should surely give Russian attackers pause before commencing any attack upon the city – just as the tunnels under a steelworks in Mariupol forced Putin to rethink plans to storm the facility.

*[Paul J. Springer](#) is a Professor of Comparative Military Studies, Air University.*

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RETURN SERVICE REQUESTED

**TO:**