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LESSONS FROM THE NAVAL FRONT ON THE 3RD ANNIVERSARY OF THE RUSSO-UKRAINIAN WAR

BATTLE-TESTED BRILLIANCE COMMANDING LIFE WITH SAT COMMANDOS' ETHOS

PAKISTAN-TÜRKİYE NAVAL COOPERATION • SAHA EXPO
CHINA'S SPIDER WEB IN THE MEDITERRANEAN
COOPERATION IN DEFENSE ARGENTINA – TÜRKİYE
THE BATTLE OF ÇANAKKALE • GREEN LOGISTICS MILITARY APPLICATIONS

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A5 DEFENSE INDUSTRY MAGAZINE

At the beginning, we were just two people: a father and his daughter. One brought years of experience and strategic vision, while the other contributed energy and an innovative perspective. Our decision to revive A5 Defense Industry Magazine was not merely a publishing endeavor. It was a responsibility we undertook with a mission to showcase the strength of our domestic and national production in the defense industry to the world.

We were fully aware that a state without a strong defense industry cannot sustain its economic independence. With this understanding, we set out on this journey, drawing inspiration from the story of Baykar Technologies, which transformed from a small team into a global success. Their determination and commitment guided every step we took, fueling our enthusiasm and motivation.

Today, what started as a father-daughter venture has grown into a large family with a team of 100 professional reviewers. A5 Defense Industry Magazine has become a global brand, reaching the armed forces of 140 countries in a remarkably short time. While we take pride in achieving a circulation of 103,000, we've positioned our magazine as more than just a platform; it has become the voice of our domestic production and Türkiye's strength.

This success story is not just the product of two individuals' efforts; it is the result of a journey shaped by love for our country, faith, and perseverance. This platform, where experience and vision converge, has become a bridge that carries Türkiye's national production power to the global stage.

Today, we take pride in sharing the successes of our defense industry and the strength of our domestic production with 140 countries through A5 Defense Industry Magazine. Yet, for us, this is only the beginning.

Thank you for joining us on this journey and making this story even more meaningful with your support. We are honored to be part of this growing family, united in every page and every word, for stronger Türkiye.

Here's to achieving even greater successes together, as we strive to carry our country forward...

Ret. Air Force Int. Col. Erdoğan İPEK & Dr. İpek İPEK

Founder & Publisher *Co-Founder & Proprietor*

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EDITOR'S NOTE

Dear Reader,

The sea is the ultimate storyteller. Beneath its ceaseless waves lie narratives of courage and ambition, resilience and sacrifice, echoes of our past shaping the tides of our present. With each wave that meets the shore, the sea reminds us of its enigmatic power, its boundless depth, and its untamed mystery. For those of us engaged in the art of defense, strategy, and vision, its whispers carry lessons too vital to ignore.

In this issue of A5 Defense Industry Magazine, we will dive not only into the blue expanse, but the profound ideas, lessons, and innovations it inspires in the realm of defense and beyond. From the enduring grit of pivotal battles to the cutting-edge partnerships shaping naval power today, we'll examine how the sea has always been more than a battlefield, it is a bridge, a lifeline, and a realm of possibilities.

You'll find reflections on how maritime strength transcends borders, forging alliances across continents and explore the interplay of green innovation and military application, a reminder that even as we prepare for conflict, we must honor the delicate balance of the environment. You'll also delve into the unique culture and language of mariners, where centuries-old traditions are captured in technical documents and the unspoken codes that govern life at sea. From the third anniversary of the Russia-Ukraine War's maritime lessons and to exploring the ethos of Turkish Navy SOF, whose resilience is forged like steel and purpose runs as deep as the ocean floor, this issue immerses itself in the profound currents of maritime strategy, history and innovation.

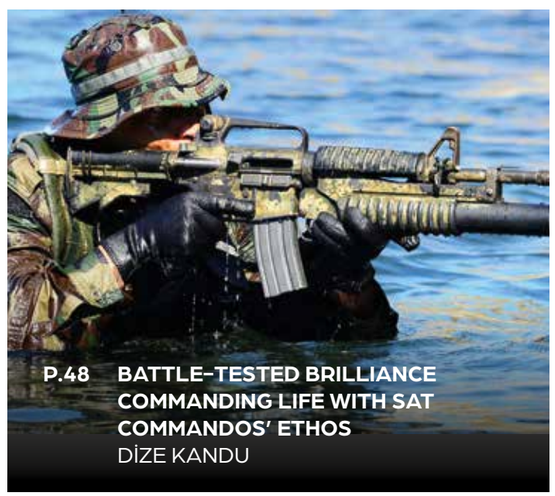
"The sea, once it casts its spell, holds one in its net of wonder forever," Jacques Cousteau once said. I believe this issue will do the same. Thoughts will be provoked and pride will be ignited, not only in our maritime heritage but also in the future we are charting together. There's something here for every seeker of insight.

As you turn these pages, may they spark your curiosity, challenge your perspective, and remind you of the infinite connections that tie us not just to the ocean, but to one another.

Welcome aboard.

Dize KANDU
Editor-in-Chief & Managing Editor

INDEX



THE VICTORY THAT CHANGED THE COURSE OF HISTORY

THE BATTLE OF ÇANAKKALE

The Gallipoli Campaign was a heroic epic of the Turkish Nation, striving to defend its right to exist against imperialist attacks, and a battle that changed the course of history.

ARTICLE
CAFER YALÇIN
Academic

The Çanakkale Front was undoubtedly the most successful front for the Ottoman Empire during World War I and the site of one of the bloodiest battles in the history of warfare. The Battle of Çanakkale holds a unique place in the war, representing a heroic epic of the Turkish nation striving to preserve its right to exist against imperialist aggressions and ultimately altering the course of history.

In fact, the Çanakkale Front was planned by Britain and France as a way to force the Ottoman Empire out of the war early. The Allied Powers' initial objective in opening this front was to pass through the Dardanelles Strait, capture Istanbul, and thus eliminate the Ottoman Empire from the war. Furthermore, Britain and France aimed to link up with their ally Russia and shift the course of the war in their favor. At that time, the Russian economy was struggling under the weight of the war. For this reason, the Allies sought to assist Russia via the straits, providing them with weapons and ammunition. They also aimed to relieve pressure on Russia at the Caucasus Front, benefit from the wheat supply in Crimea, eliminate Ottoman pressure on the Suez Canal and the route to India, and encourage Balkan states to join the war on their side. Additionally, the Çanakkale Front was not a minor theater like those in Iraq, Syria, or the Caucasus; it was a decisive front capable of influencing the outcome of the war.

During this period, the British, operating under the philosophy of "he who controls the seas controls the world," believed that naval forces alone would suffice to capture the straits. Winston Churchill, Britain's First Lord of the Admiralty, was convinced that the Ottoman army, weakened after its severe defeat in the Balkan Wars, would not withstand the Allied naval forces. He believed that the fleet could easily pass through the straits, neutralize the Ottoman Empire with a single blow, and capture Istanbul. Supported by Mediterranean Fleet Commander Admiral Carden, Churchill's plan gained approval despite the reservations of Lord John Fisher, leading to the decision to carry out the operation with naval forces alone. Churchill placed great confidence in the British navy, which had never been defeated and prided itself on its superiority in weaponry, technology, and success. With French support, this invincible navy formed the largest armada in the world. It was believed that no force could stand against such a fleet, particularly the fragmented, technologically inferior, and weakened Ottoman Empire, which was deemed incapable of resisting the Allied armada.

The main points of the operation plan prepared by British Admiral Carden on January 11, 1915, for the attack on the Dardanelles Strait were as follows:

a) Neutralizing the fortifications at the entrance of the strait,
b) Completely destroying the inner defense system up to Kepez,
c) Neutralizing the fortifications located at the narrowest part of the strait,
d) Clearing the minefields, disabling the fortifications dominating the narrowest section of the strait, and ultimately entering the Sea of Marmara.

> The Gallipoli Front was not a secondary front like the Iraq, Syria, or Caucasus Fronts; it was a decisive battlefield that could influence the outcome of the war.

The first step of the plan aimed to neutralize the entrance fortifications using the long-range guns of the Allied navy. The goal was to completely destroy these fortifications with bombardments carried out from a distance of 4,000 meters. Within this framework, the Allies designated the island of Lemnos as their operational base and organized their deployments accordingly.

The Battle of Çanakkale began as a "naval operation," but after its failure, it transitioned to a "land campaign," unfolding in two phases.

THE NAVAL CAMPAIGN AT ÇANAKKALE

The first naval assault by the Allied Powers on the Çanakkale region occurred on the morning of November 3, 1914, shortly after the Ottoman Empire entered World War I. The assault targeted Turkish fortifications in the Seddülbahir and

Kumkale areas. This bombardment resulted in the deaths of 5 officers and 81 soldiers, who became the first martyrs of the Çanakkale Campaign. This intense initial attack by the Allied fleet prompted the immediate deployment of the 3rd Army Corps, stationed in Tekirdağ, to the Çanakkale Front. From that point forward, the defense of the straits became the responsibility of this corps.

Following the initial attack by the Allied Powers, the Dardanelles Strait remained relatively quiet until February 19, 1915, when the second assault was launched. During this period, the Ottoman Empire undertook necessary measures to fortify the straits and strengthen its defensive lines. Under Admiral Carden, the Allied fleet was tasked with attacking the fortifications at Çanakkale, commanded by Cevad Pasha. The primary objective of the war plan was to neutralize the outer fortifications in the initial stage.

The naval campaign launched by the Allied Powers on February 19, 1915, with long-range bombardments of the Kumkale and Seddülbahir fortifications, lasted until March 17, 1915. During this time, the Allied fleet conducted operations on February 19, 25, 26, and March 1–17, depending on weather conditions, to destroy Turkish batteries positioned around the Dardanelles and clear the minefields in the straits. On March 4, Allied forces even landed small detachments in the Seddülbahir and Kumkale areas. These detachments, tasked with destroying the remaining intact artillery in these fortifications, were forced to withdraw despite naval fire support due to fierce Turkish infantry fire and bayonet charges.

The failure of the Allied fleet's operations at the Dardanelles during this phase led to Admiral Carden being relieved of his command on March 16, 1915, and replaced by Admiral John de Robeck.

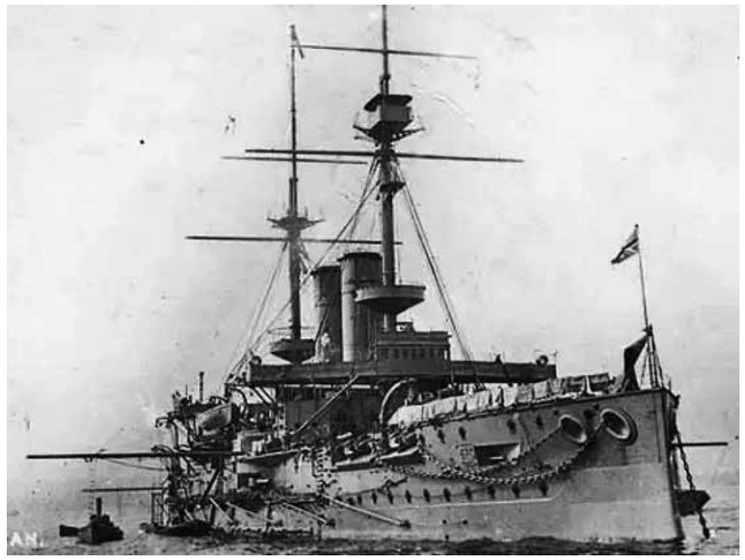
The goal of the Allied naval campaign was to silence the batteries protecting the fortifications and minefields in the central part of the strait. The plan was for minesweepers to clear the way for the fleet, allowing warships to enter the strait, destroy inner fortifications at close range, and clear the remaining mines to enable access to the Sea of Marmara. The essence of the Allied fleet's war plan was to utilize warships in areas cleared of mines. They meticulously swept the lower part of the strait for mines. However, on the night of March 17–18, 1915, the Turkish mine-laying ship Nusrat, under the command of Hafız Nazmi from Yeniköy and Captain Hakkı from Tophane, laid the remaining 20 mines in a single line in the upper part of Karanlık Liman, where the Allied fleet executed its turning maneuvers. These mines laid by Nusrat played a crucial role in the significant success achieved by the Turks in the major naval battle that would begin the next day.

> The Gallipoli naval operation resulted in a heavy defeat for the Allied fleet, which lost one-third of its combat power.

On the morning of March 18, 1915, weather conditions were favorable for the operation. Around 11 a.m., the Allied fleet, led by Triumph at the forefront, followed by Agamemnon, Lord Nelson, Queen Elizabeth, Inflexible, and Prince George, along with five torpedo boats, appeared from the direction of Seddülbahir. Reports from aerial reconnaissance revealed that the Allied fleet outside the straits near Bozcaada consisted of 15 British and 4 French warships, along with 3 cruisers, numerous torpedo boats, destroyers, and transport ships.

At approximately 11:30 a.m., four French warships (Suffren, Charlemagne, Gaulois, and Bouvet) entered the Dardanelles from Seddülbahir. The Weymouth cruiser appeared behind Kumkale and began bombarding Yenişehir. The British warships divided their firepower as follows: Prince George and Tenger targeted Baykuş; Queen Elizabeth aimed at Anadolu Hamidiye Fort; Agamemnon and Lord Nelson concentrated on the Kilitbahir region; Inflexible targeted Mecidiye, Halileli, and Erenköy; and Triumph focused on Dardanos Fort. By 1:30 p.m., the bombardment intensified, with all central forts under heavy fire. Shells hitting Kilitbahir and Çanakkale caused fires.

At the Rumeli Mecidiye Fort, almost all personnel operating two gun emplacements were either killed or injured by shells hitting the embrasures, rendering the guns inoperative. Around 2:00 p.m., the Bouvet, hit by shells from Anadolu Mecidiye Fort, began listing and sank within three minutes, taking 603 crew members with it. By 3:20 p.m., Anadolu Hamidiye Fort targeted Irresistible, which listed to port and came under heavy fire from howitzers. The ship, adrift towards Karanlık Liman and then Dardanos Battery, sank at around 7:30 p.m. Later, Ocean, attempting to assist Irresistible, was also hit and drifted into Morto Bay, sinking by 10:30 p.m.



The Allied fleet suffered heavy damage, with Inflexible, Suffren, and Gaulois also severely damaged. Seeing the loss of three warships and significant damage to three others, the Allied fleet commander ordered a retreat to Bozcaada. The Allied fleet's losses included 44 guns and approximately 800 personnel, while Turkish casualties amounted to 4 officers and 22 soldiers killed, and 1 officer and 52 soldiers wounded, totaling 79. German losses included 3 dead and 15 wounded.

Despite their technical shortcomings, Turkish artillery displayed immense courage and effort in this battle. The Allied Powers, confident they could force their way through the Dardanelles with naval strength alone, faced determined and resilient resistance from the Turks, proving that this task would not be so easy. The naval campaign at Çanakkale ended in a crushing defeat for the Allied fleet, which lost one-third of its combat strength. The realization that the Dardanelles could not be breached without a land invasion marked a turning point. The five-week interval between the end of the naval campaign and the start of the land campaign provided the Turks with invaluable time to prepare for the war.

THE ÇANAKKALE LAND BATTLES

Following their monumental naval victory on March 18, 1915, the confidence of the Turks soared, demonstrating to the world that the Dardanelles could not be breached. In anticipation of the inevitable

Allied land campaign, Turkish forces began their preparations.

After suffering significant losses on March 18, 1915, and realizing that the Dardanelles could not be overcome through a naval assault alone, the Allied Powers decided to launch a land operation with naval support. The plan for an amphibious assault on the Gallipoli Peninsula was devised by General Ian Hamilton, Commander-in-Chief of the Mediterranean Expeditionary Force. On April 25, 1915, the British and French, supported by 80,000 soldiers gathered from their colonies and dominions, including Australia, New Zealand, India, Senegal, and Algeria—landed on the Gallipoli Peninsula, marking the beginning of the land battles at the Çanakkale Front.

The Allies completed preparations for the landing on April 19, but unfavorable weather conditions delayed the operation by several days. With improved weather on April 23, the landing was scheduled for April 25. During the night of April 24–25, the meticulously prepared landing plan was set into motion. Amphibious landings commenced at predetermined points under heavy naval artillery support. On April 25, 1915, with the assistance of approximately 200 war and transport ships, 80,000 Allied troops took part in the operation. The British landed in the Seddülbahir region at the southern tip of the Gallipoli Peninsula, while the ANZAC (Australia and New Zealand Army Corps) forces landed at Arıburnu, north of Kabatepe. Simultaneously, French forces launched their landing operation around Kumkale.

In response to these preparations, the Turkish forces, numbering approximately 80,000 troops, were reorganized under the command of the 5th Army on March 24, 1915, and placed under the leadership of German Field Marshal Liman von Sanders. Despite the strong naval support of the Allied forces during the land phase of the Çanakkale campaign, the determination and resilience of the Turkish soldiers immobilized the enemy in the narrow confines of the Gallipoli Peninsula.

> With the great naval victory achieved on March 18, 1915, the Turkish side gained confidence and demonstrated to the entire world that the Straits were impenetrable.

Key Turkish commanders in the land battles at Çanakkale included Mustafa Kemal Pasha, Esat Pasha, Fevzi Pasha, Mehmet Vehip Pasha, Süleyman Faik Pasha, and others. However, the land battles at Gallipoli were profoundly marked by Lieutenant Colonel Mustafa Kemal, Commander of the 19th Reserve Division. On April 25, 1915, his troops halted the advancing enemy forces at Conkbayırı. Following this success, Mustafa Kemal was promoted to the rank of colonel on May 19, 1915.

In early August 1915, British forces under General Harrington launched renewed assaults on August 6–7.

Mustafa Kemal, as Commander of the Anafartalar Group, achieved the First Anafartalar Victory on August 9–10,

1915. His famous order to his soldiers during the Anafartalar Battle, “I am not ordering you to attack, I am ordering you to die,” became a turning point in the campaign. In his memoirs, Winston Churchill, who was then the British First Lord of the Admiralty, referred to Mustafa Kemal as the “man of destiny.” Mustafa Kemal forced the ANZAC Corps advancing at Conkbayırı and Kocaçimen to retreat, recapturing strategic positions. By deploying the 19th Division and the 57th Regiment to the front on his own initiative, without waiting for orders from headquarters, Mustafa Kemal prevented the fall of the Çanakkale Front. This victory was followed by the Kireçtepe Victory on August 17 and the Second Anafartalar Victory on August 21.

After these bloody battles in August, the fighting on the Gallipoli Peninsula turned into a trench warfare stalemate. Both sides suffered heavy casualties during this period and were unable to achieve decisive results. The Allied forces, holding onto their trenches, began awaiting developments on other fronts.

Ultimately, the Allied Powers began a clandestine withdrawal. By December 19–20, 1915, they had evacuated Anafartalar and Arıburnu, and by January 8–9, 1916, they had completely withdrawn from Seddülbahir. Thus, the British suffered a resounding defeat, both at sea and on land.

CONCLUSION

The land battles of the Çanakkale Front lasted approximately 8.5 months. Due to the resistance of the Turkish army, large numbers of British and French soldiers, along with troops from their colonies, were diverted from the main western fronts and deployed to Çanakkale, Iraq, and Palestine. During these operations, both sides suffered heavy casualties.

The Çanakkale Campaign, where the Turkish army fought heroically during World War I, was won at the cost of losing approximately 253,000 sons of the homeland, most of them young students. The British and French, who had brought soldiers from their colonies to the front, also suffered losses comparable to those of the Ottoman Empire. The victory at Çanakkale is a monumental symbol of the Turkish soldier’s resilience, spirit of sacrifice, and love for the homeland and nation. The triumph achieved in this battle would later serve as an inspiration for the Turkish War of Independence. The land battles at Çanakkale marked the emergence of Mustafa Kemal Pasha as a military genius recognized both in Türkiye and around the world. Additionally, these battles introduced the future leader of the Turkish War of Independence and the Turkish Revolution to the nation.

The Allies’ inability to aid Russia led to increased poverty and deprivation in the country, paving the way for the Bolshevik Revolution. Thus, the failure of the Allies at Çanakkale ultimately resulted in the collapse of the Russian Tsarist regime. Furthermore, the Turkish success at Çanakkale extended World War I by two more years. The Allies were unable to benefit from Russian grain, and Bulgaria, previously hesitant to join the war, decided to side with Germany following the Çanakkale Campaign.

This war demonstrated to the world that even supposedly invincible navies and armies could be defeated. With this loss, Britain experienced a significant decline in influence, particularly in its colonies, and the prestige of British imperialism, which was the dominant power of the era, began to waver.

REFERENCES

APUHAN, Recep Şükrü, Çanakkale Geçilmez, Bir Destanın Öyküsü, Timaş Yayınları, İstanbul, 2013.
ARTUÇ, İbrahim, 1915 Çanakkale Savaşı, Kastaş Yayınları, İstanbul, 2004.
ATABEY, Figen, Çanakkale Muharebelerinin Deniz Cephesi, Türk Tarih Kurumu Yayınları, Ankara, 2014.
Çanakkale Muhârebatı: Cihan Harbinde Osmanlı Harekât-ı Tarihçesi= The Dardanelles Campaign: a short history of Turkish operations in the Great War, Yayına Hazırlayanlar: Bülent Özdemir – Abdülmecit Mutaf, Türk Tarih Kurumu Yayınları, Ankara, 2012.
DOĞAN, Mehmet, “Birinci Dünya Savaşı ve İmparatorlukların Sonu”, Türkiye Cumhuriyeti Tarihi – Atatürk İlkeleri ve İnkılâp Tarihi, Deniz Kitabevi Yayınları, Mersin, 2022, s.79-113.
İĞDEMİR, Uluğ, Atatürk ve Anzaklar, Türk Tarih Kurumu Yayınları, Ankara, 2020.
KARAL, Enver Ziya, Osmanlı Tarihi, IX. Cilt, İkinci Meşrutiyet ve Birinci Dünya Savaşı (1908-1918), Türk Tarih Kurumu Yayınları, Ankara, 1999.
KURTOĞLU, Fevzi, Birinci Dünya Savaşı ve Çanakkale’de Türk Donanması, Yayına Hazırlayanlar: Ali Fuat Örenç – Levent Düzcü, Zeytinburnu Belediyesi Yayınları, İstanbul, 2015.
TÜRKMEN, Zekeriya, Çanakkale 1915 – Türk Ordusunun Kara ve Hava Harekâtı, Berikan Yayınları, Ankara, 2007.

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GREEN LOGISTICS
MILITARY APPLICATIONS

Greek mythology tells the history of humanity in golden–silver–bronze periods. According to this narrative, there was no gender when the first human was created by Prometheus. In addition to that, there was no birth, death, disease, grief, or various other troubles. People would jump out of the soil, live for 40 years, and when that time was up, they would suddenly become soil.

ARTICLE
ALPER GÜNORAL
Marine Professional

Then, in order to attract the minds of humanity, the first woman Pandora was created by Hephaestus from the image of his wife Aphrodite, by the order of Zeus, and was presented to Prometheus' brother Epimetheus. Pandora's curious nature caused her to open the famous box that she was given and warned never to open, thus revealing all the troubles hidden in the box, such as illness, strife, war and anxiety. Thus began the silver age of humans. Then the bronze period began, during which humankind, affected by wars, famine and various troubles, has survived until today. I fictionalized the golden-silver-bronze periods in this narrative of Greek mythology in a different framework.

During the first few hundred thousand years of humankind's emergence on the stage of history, it did not live a very different life from other living creatures. We can describe this period as the golden years in Greek mythology. In the golden years, human beings were born, lived, consumed, were consumed, reproduced, and eventually their lives came to an end. Then, by developing agriculture and animal husbandry, it began to harm nature to a certain extent in the last 14,000 years. Forests burned for agriculture, animals deprived of their freedom and forced to breed and used for livestock purposes, wildlife extirpated for various purposes... We can evaluate the last few centuries as the bronze period with the incredible extent of the damage caused by human beings to nature. During this period, many animal and plant species were destroyed, the atmosphere and oceans were polluted to an irreversible extent, and debris was created in space, some of which could be tracked and some of which exceeded the limit of what can now be tracked. We don't know much yet about the consequences of noise and light pollution, except fireworks terrorizing birds at cities, but as a sailor who loves nighttime sailing, I can claim to know exactly what we're missing in the city in that regard.

The 'pollution' that has shown an exponential increase in the last few centuries has been caused by logistics activities as well as many other factors. Today, we are in a period where products from different parts of the world are used on the other side of the world, and the logistics network becoming denser to ensure the continuation of life even on remote islands in the middle of the oceans. Millions of vehicles are constantly on the move at sea, in the air and on land, the carbon compounds released into the atmosphere are increasing day by day and it is said that a threshold has been passed where it is no longer possible for the world to absorb this amount. The military use of logistics elements also contributes greatly to this. Türkiye alone has more than 100 warships of various sizes. A frigate consumes more than 1 ton of fuel per day when she is at anchorage. What percentage of the carbon emissions in the world do ships, planes, land vehicles and heating systems of military facilities account for? Perhaps this is a separate research topic. Moreover, the negative impact of logistics activities in the military field on the world is not only due to carbon emissions, but also other factors. For example, ammunition: the traces left on nature by heavy metals found in the ammunition used by military units are increasing day by day. Just one warship throws hundreds of cannon ammunition and a few guided missiles

> A single warship fires hundreds of artillery rounds and a few guided missiles into the seas within a year.

into the seas in a year. Cannon shells are no longer made of stone like in the Middle Ages, and depending on the cannon's mission and the content of the ammunition, we are talking about a wide range of pollution elements from lead to tungsten, gunpowder and blast residues to felt, plastic and other waste. Guided missiles, on the other hand, continue to meet the seas with their fuel, metal, plastic and electronic circuits used in their production, which are all sources of pollution themselves. In this article, the effects of military logistics will be examined only in the context of these two products and within the framework of navy units due to the author's experience. This will be a romantic article as a bold step in a defense industry magazine; namely, it will be shaped around the idea of 'we are hurting each other, so let's not harm the world as well', without forgetting the fact that military activities are fundamentally aimed at taking human lives.

FUEL

Nuclear, boiler type, internal combustion or gas turbine engines and electric motors powered by batteries are in use onboard navy ships. I will not mention the subject of nuclear in this article. Although not as much as fossil fuel use, nuclear systems produce different types of waste according to their own operating principles. The damage done to the future of any poor and poorly managed nation that receives nuclear waste to be buried to soil in return of money is among the information that is not shown to the public. Fossil fuels will be the 'fuel' to be mentioned in this article.

Boiler engines use fossil fuels to produce steam, which is extra heated and empowered vapor to push the turbines, that rotates the shaft of the propeller. In gas turbine engines which operate on a similar principle, the pressure created by the explosion of the fuel is used to rotate the turbines. In this way, high power is obtained in a very short time, but fuel consumption is also high. In internal combustion engines, on the other hand, the fuel explodes in the combustion chamber connected to a piston and rotates the piston, which in turn rotates the shaft. Internal combustion engines and gas turbines are also used together with CODOG or CODAG composition. In CODOG, one of the two engine types is in operation, while in CODAG, the Gas Turbine is in a supporter role. Batteries are products that conventional submarines charge during snorkel hours by using internal combustion engines, providing the ship with energy while under water.

In recent years, various nations have begun to resort to ways to reduce the harmful effects of fossil fuels. Research in this area has been ongoing for many years. In the report titled Alternative Fuels for Naval Ships published by the famous classification society Det Norske Veritas (DNV) in 2024, it is stated that the aim is to halve the carbon emissions in the maritime sector by 2050, which was announced by the International Maritime Organization (IMO) after the MEPC 76 meeting, and that a path has been drawn by the European Union to reduce carbon emissions from transportation by 90% until 2050 (European Green Deal) .
The report lists 274 naval ships that use various alternative fuel systems, including nuclear. Now let's take a look at some alternative fuels.

> It is stated that the European Union has set a course to reduce transportation–related carbon emissions by 90% by 2050, as part of the European Green Deal.

Hybrid: In fact, the fuel is the same, but the way it is used is different. In hybrid systems, the fuel is used to generate electricity with a generator, and the ship is powered by an engine driven by this electricity. Some of the British Duke class destroyers were equipped with hybrid engines. Then, there was news from the USA that steps would be taken in this area. However, this issue seems to have stalled a bit. Hybrid engines, which were very popular in 2015-16, and especially had a positive effect on the acoustic footprint for Anti-Submarine Warfare, have not spread much in navies.

LNG: Liquefied Natural Gas is a fuel currently used by commercial ships. There is no initiative yet for its use in military ships, but there are studies for its use in deep-sea vehicles due to its ability to operate under high pressure.

Fuel Cell: This system, is in use in Germany's Type 212 and 214 submarines, also in Greece, Italy, Portugal, South

Korea and Türkiye, which have purchased these vessels. Fuel cells are also used by Spain in the S-80-Plus class, South Korea in the Dosan and Type 218 classes, and Israel in the Dolphin II and Kalvari class submarines. Fuel cells are seen as an effective system, especially at low speeds.

Bio-diesel: In the final minutes of the 1988 Back to the Future movie, the metal cans and banana peels thrown into the Delorean's fuel tank by Dr. Emmett Brown were actually the beginning of a beautiful dream. Although it has not yet reached that level, bio-diesel is an alternative fuel produced from waste oil. In 2016, the USS John C. Stennis Task Group (JCSSG) of the Pacific Command used 10% recycled diesel while performing its 7th Fleet mission in the Pacific with 40 ships/submarines and 200 aircrafts . This task group, called the Great Green Fleet, represented a pioneering approach to alternative energy not only with the use of bio-diesel but also with some innovative applications such as solar energy powered communication systems . The US Office of Naval Research continues to research on alternative fuels in general. There are also those who oppose GGF activities. An experienced (!) retired serviceman expresses his opinion of 'sink the Great Green Fleet' at the US Naval Institute in a country where freedom of expression is understood quite differently than in our geography . His point might be understood as the USA is one of the leading countries in energy production, and to allocate resources to such an initiative (bio-diesel is an expensive option) might have tipped that individual over the edge. However, I will continue to hope for bio-diesel, I don't think Dr. Emmett Brown could be wrong.

As a result, energy, which is the raw material that humanity needs the most after the industrial revolution, is produced, stored and used by various means. It has been 25 years since we entered the new millennium. The 'technology' that our ancestors developed over hundreds of thousands of years has cumulatively brought us to today's artificial intelligence, internet, information and space age. The variety of waste consisted of household and toilet waste hundreds of thousands of years ago, and it reached today's variety in the last couple of centuries. After all this time, the question of what to do with the waste is still in our lives. In addition to the ones listed above, Hydrogen, which is used in 4 ships in the world, Methanol, which is used in 37 ships, and Ammonia, which is not yet in use, are also considered among the alternative fuels, but I do not think they will be used in military ships, especially since they are expensive and dangerous to store. As a sailor, I do not think that my favorites, wind and sun, will be used in the near future due to the additional problems they will create in terms of the maintenance of the relevant material (sail, panel, etc.), its effect on the radar cross-section, day/night visibility and thermal footprint.

AMMUNITION

Now let's come to the romantic part of the article. I have participated in many firing exercises as a weapons officer and ship commander for years. In total, I have sent thousands of shells to the seas. If only a naval officer can say this, I leave it to the reader's discretion how much pollution we can talk about in a year in total worldwide. Navy ships have to carry out firing exercises in order to 'hit first, hit accurately, hit continuously' as stated in the artillery motto. Moreover, these trainings have to be done with real bullets most of the time, so that the necessary prediction can be obtained about where a shell with a similar weight to a real shot will land/explode. Although today's fire control systems have reached an advanced level, 'correction' needs to be made with the data obtained with the first three rounds fired on land or surface targets. In order to make the exact correction, it is necessary to understand the language of the gun and the ammo. In this sense, since the priority is the mission, what I will write later on might be meaningless; the main thing is always the mission. Still, I don't want to not mention it.

The content of the ammunition that navy ships send to the sea is as important as its quantity. Substances such as lead, which cannot be easily dissolved in nature and is described as 'very, very harmful' in some sources, are used in various types of ammunition. They also contain a wide variety of harmful substances such as various plastics, felt-derived materials, chemicals such as gunpowder, electronic circuits, and paints. In this article, we are only talking about the navy part of the problem, but the annual amount of shooting carried out by land-based forces is even more than that of naval or air forces. If we add those carried out for pleasure, namely those carried out in shooting ranges or legal hunting, we can think that we are causing more harm to nature than we are to each other worldwide.

There is a Green Ammunition Initiative for small ammunition, that is, ammunition produced for sidearms with a caliber smaller than 12.7 mm. The US Department of Defense has been working in this field since 2013 under the Combat Capabilities Development Command (CCDC). It is promising that this command is also interested in this issue in addition to inventions that will provide superiority in the field such as artificial intelligence, quantum, autonomy, robotics, and synthetic biology. Can the ban on the use of lead-containing bullets in hunting activities in the state of California since 2019 be considered a start in this area? A disappointing development in this regard is that NATO has somehow ended its green ammunition studies conducted in the 2010s.

> Due to the still relatively low costs of fossil fuels, widespread acceptance of alternative fuels requires time and innovations that can reduce their cost.

As I write these lines, I am also aware that the device we call a weapon is produced to harm whatever it is in front of it, whether living or non-living. The deaths, injuries and destruction caused by weapons will never end. However, I would like to state that individuals above a certain level of emotional intelligence and respectful of the order established by modern man within the framework of law and social rules will have sweet dreams for the general good of the world and that these dreams will one day come true: our problem with weapons production and use is with each other, we should not include nature in this problem. Developments continue to increase in the field of alternative fuels, which is a more serious dream and is included in the first part of the article. However, due to the still relatively affordable costs of fossil fuels, time and inventions that make alternative fuel use cheaper are needed for them to be widely accepted. Our world will continue to suffer.

PAKISTAN-TÜRKİYE NAVAL COOPERATION

A LEGACY OF STRATEGIC PARTNERSHIP

The diplomatic relations between Türkiye and Pakistan were formally established in 1947, following Pakistan's emergence as an independent state. However, the roots of this enduring partnership run deeper into history, tracing back to the British colonial era. During this period, Indian Muslims held the Ottoman Empire's Sultan in high regard as a symbol of Islamic solidarity. This historical kinship persisted even after Türkiye transitioned to a Republic in 1923.

ALİ BASİT
Maritime and Security Expert

Türkiye was among the first nations to acknowledge Pakistan's sovereignty, setting up diplomatic ties with the nascent state in 1947. The appointment of Yahya Kamal as Türkiye's first ambassador to Pakistan and Mian Bashir Ahmed as Pakistan's first ambassador to Türkiye marked the formal beginning of their bilateral relations.

This bond was eloquently articulated by Pakistan's founding father, Quaid-i-Azam Muhammad Ali Jinnah, during a historic address on 04 March, 1948, while receiving Türkiye's first ambassador. He expressed the admiration and amity felt by Pakistanis for Türkiye, while stating:

"Türkiye has been in our thoughts constantly and has drawn our admiration for the valor of your people and the way in which your statesmen and leaders have struggled and fought almost single-handed in the midst of Europe for your freedom and sovereignty which have been happily maintained. I can, therefore, assure Your Excellency that the Muslims of Pakistan entertain sentiments of affection and esteem for your country, and now Türkiye and Pakistan, both as free, sovereign and independent countries, can strengthen their ties more and more for the good of both."

The historical foundation of Türkiye-Pakistan relations laid the groundwork for a robust and multifaceted partnership, with defence cooperation emerging as a significant pillar. Defence ties between the two nations date back to the Turco-Pakistan Treaty of 1954. Defence collaboration

was further Bolstered in 1988 when the formation of the Pakistan-Türkiye Military Consultative Group (MCG) was formed to extend cooperation and facilitate the exchange of experiences in military training and defence production.

The rise of Turkish President Recep Tayyip Erdoğan to power has strengthened bilateral relationships particularly in the defence sector. During Erdogan's visit to Pakistan in 2003, a High-Level Military Dialogue Group (HLMDG) was set up, strengthening defence collaboration at a strategic level. A notable achievement in defence collaboration was seen in the naval domain.

> The Pakistan Navy and the Turkish Navy have a strong history of cooperation through multilateral and bilateral exercises conducted to enhance joint operational readiness and mutual understanding.

In 2013, Pakistan signed an agreement with Turkish premier defence manufacturer, STM, to design and construct a Navy Fleet Tanker for the purpose of meeting the operational needs of Pakistan Navy. STM was responsible for providing the ship design and the material to be used in shipbuilding in Karachi Shipyard. This fleet tanker was delivered to Pakistan Navy in 2018. Subsequently, in the same year Pakistan Navy signed a new contract with another Turkish state-run defence firm, ASFAT, for the procurement of four MILGEM-class corvettes for the Pakistan Navy. According to the agreement, two of these ships were to be constructed in Türkiye while the other two were to be built in Pakistan. Under the agreement, the complete transfer of technology and intellectual property rights were given to Pakistan, enabling it to develop its own indigenous warships.

Another milestone achieved in 2022, when STM modernized the second AGOSTA 90B-class submarine for the Pakistan Navy, following the delivery of the first upgraded submarine in 2021. This submarine modernization integrated cutting-edge systems to enhance operational capabilities. The Pakistan Navy and Turkish Navy share a robust history of bilateral and multilateral cooperation, demonstrated through regular participation in multinational and joint exercises aimed at enhancing operational readiness and mutual understanding. At multinational level, Pakistan Navy has been regularly conducting AMAN exercise since 2007 on biennial basis. Turkish Navy is one the among prominent participating navies which joins the exercise with its assets including warships and personnel.

Similarly, a multilateral exercise "Mavi Balina" is being regularly conducted by Turkish Navy. Pakistan Navy frequently participates in the exercise. Recently, Pakistan Navy's ATR aircraft participated in the latest edition of Mavi Balina in December 2024.

In addition, the two navies also conduct various bilateral naval exercises. Pakistan Navy and Turkish Navy frontline warships participate in joint naval exercise 'Turgut Reis'. The 10th edition of the exercise was held in August, 2024 and it covered anti-surface, anti-air, and anti-submarine operations. Similarly, Special Forces of the two navies conduct bilateral exercise "Ayyıldız", which focuses on specialized maritime operations.

From exercises like Ayyıldız and Mavi Balina to milestone projects such as the MILGEM-class corvettes and submarine modernization, the relationship between Pakistan and Türkiye has reached to the new heights of trust and cooperation.

Furthermore, joint training programs, exchange of high-level delegations, and port visits by the two sides underline the depth of their bilateral ties. As the geopolitical landscape grows increasingly complex, the strategic partnership between Pakistan and Türkiye stands as a testament to their ability to adapt, collaborate, and contribute meaningfully to regional and global maritime security.

This legacy of cooperation, innovation, and shared purpose not only strengthens their individual naval capabilities but also positions them as key contributors to peace and stability in an increasingly interconnected world. With continued dedication, the Pakistan-Türkiye naval relationship will undoubtedly serve as a cornerstone for enduring regional and global security.

The enduring partnership between Pakistan and Türkiye, rooted in a shared history of mutual respect and Islamic solidarity, has evolved into a robust strategic partnership. Nowhere is this partnership more evident than in the naval domain, where both nations have consistently worked together to enhance regional security and mutual capabilities.

TÜRKİYE'S DEFENSE AND AEROSPACE INDUSTRY POWERHOUSE

First held in 2018, SAHA EXPO has rapidly become one of the globally recognized events in the defense and aerospace sector within just six years. The number of participating companies, countries, and visitors multiplies with each edition. Spanning 90,000 m² this year, SAHA EXPO 2024 once again showcased Türkiye's ambition in the defense industry with its growing capacity and international impact.

THE BIG PICTURE: PARTICIPANTS AND IMPACT

This year, a total of 1,478 companies from 121 countries showcased their latest products and technologies at SAHA EXPO. The companies drew attention with innovations that elevated regional competition to a global scale. Notably, 97 official delegations from 51 countries and 178 trade delegations from 35 countries played a significant role in fostering major collaborations and trade connections. During the expo, 22,467 B2B meetings took place, resulting in commercial agreements worth a total of $6.189 billion, with $4.6 billion of this sum attributed to export deals.

Prominent figures such as 27 ministers, 6 chiefs of general staff, and 13 force commanders were part of the official delegations, highlighting the event's contribution to international diplomacy and defense cooperation. These notable attendees underscored that SAHA EXPO is far more than just a trade fair.

> As Türkiye achieves its goal of becoming self-sufficient in the defense industry, it is also emerging as a key player in the international market.

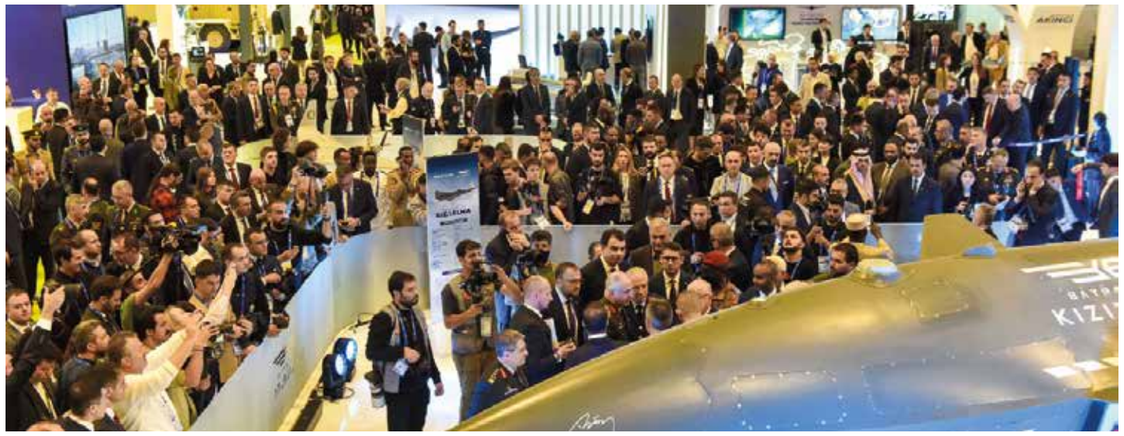
EXHIBITION SPACE AND FEATURED PLATFORMS

Spanning 90,000 m², SAHA EXPO featured 8 indoor exhibition halls and a vast outdoor area, showcasing the diverse landscape of the defense industry.

Maritime Highlights: One of the standout sections was the naval platforms currently in the Turkish Naval Forces' inventory. Strategically significant ships like TCG Istanbul Frigate, TCG Kınalıada Corvette, and TCG Sancaktar Landing Ship were closely introduced to visitors.

Locally developed unmanned maritime vehicles, including MARLIN, ULAQ, and SANCAR, demonstrated significant progress in maritime defense technologies, signaling further investments in unmanned technologies.

Additionally, locally and nationally produced warships displayed at Sarayburnu and Ataköy ports offered visitors a unique experience while highlighting Türkiye's technological capabilities in maritime defense.



INNOVATION AND PRODUCT LAUNCHES

The expo hosted a total of 208 product launches. The "Space Talks" event brought together companies and stakeholders from the space ecosystem, emphasizing the sector's goals in this domain. Advanced technology products from domestic and international companies were showcased to a global audience.

This year, 40 companies from China participated in SAHA EXPO for the first time, showcasing their cutting-edge products and technologies in areas such as unmanned systems, artificial intelligence, cybersecurity, and advanced material technologies.

This milestone was seen as a significant step toward strengthening defense and technology collaboration between Türkiye and China, paving the way for potential joint projects, technology transfers, and commercial partnerships.

SAHA MATCH: EMPOWERING NETWORKING

The SAHA MATCH application, introduced at the expo, served as an efficient platform for B2B meetings. By connecting the right partners, it facilitated strategic relationships between both local and international companies.

Data from these meetings demonstrated that SAHA EXPO is not only a hub for commercial connections but also a fertile ground for innovation and knowledge exchange.

PRESIDENT ERDOĞAN'S VISION AND FUTURE OUTLOOK

President Recep Tayyip Erdoğan's vision of "domestic and national production" was one of the event's most striking themes. As Türkiye continues to achieve self-sufficiency in defense while emerging as a key player in the international market, this vision becomes more tangible. The fact that Türkiye's defense industry products have been exported to 178 different countries this year is yet another testament to the realization of this vision.

Both state-supported projects and the innovative approaches of the private sector play a significant role in this success. This collaboration lays the groundwork for even larger and more comprehensive projects in the future.

NEXT STEP: SAHA EXPO 2026

With 101,367 visitors at SAHA EXPO 2024, the event's impact was once again undeniable. The next edition, SAHA EXPO 2026, is scheduled to take place on May 5-9 in Istanbul, further advancing Türkiye's leadership in global defense and aerospace.

LESSONS FROM THE NAVAL FRONT ON THE 3RD ANNIVERSARY OF THE RUSSO-UKRAINIAN WAR

The Russia-Ukraine War has witnessed events that have fundamentally altered the dynamics of 21st-century naval warfare. The clashes in the Black Sea demonstrated how a nation without a navy could challenge a major naval power, while the rise of unmanned systems has called traditional naval warfare doctrines into question.

ARTICLE
TAYFUN ÖZBERK
Analyst, Writer

Naval conflicts are rare occurrences in world history. While land conflicts, operations, and wars emerge in various regions almost every decade, the last full-scale naval war took place nearly 40 years in the South Atlantic Ocean, namely the Falklands War. Despite the passage of decades and significant advancements in technology, the lessons learned from that war and the doctrines developed in its aftermath continue to shape modern naval warfare. Many of the strategies, tactics, and operational standards used today still trace their origins to those hard-earned experiences.

This underscores the critical importance of studying naval conflicts in depth—analyzing them from every possible angle and adapting defense doctrines accordingly, from the smallest unit level to entire fleet operations. Wars serve as the ultimate testing grounds for weapons, tactics, and personnel training, revealing their effectiveness in the most unforgiving conditions. While much of the ongoing Russia-Ukraine war has unfolded on land, the naval battles in the Black Sea have provided invaluable insights into the evolving nature of maritime conflict.

As the war reaches its third anniversary, it has undeniably reshaped naval warfare for the 21st century, offering crucial lessons on modern strategies, tactics, and emerging technologies. This article aims to examine the key naval engagements of the conflict, drawing lessons that will shape future naval operations and defense doctrines.

A NAVY-LESS STATE VS. A NAVAL SUPERPOWER

The naval front of the Russia-Ukraine war has witnessed an unprecedented struggle—one where a country without a navy has managed to challenge and severely weaken one of the most powerful fleets in the world. Following Russia's annexation of Crimea in 2014, Ukraine lost nearly 80% of its naval assets, including the strategically vital Sevastopol Naval Base. This devastating blow significantly diminished Ukraine's ability to operate at sea, forcing it to develop creative and unconventional methods to counter Russian maritime dominance.

> This war, where unmanned systems proved to be highly effective, has also shed light on future conflict environments.

The conflict at sea began in late February 2022 and has since evolved into a dynamic, multi-layered war incorporating conventional naval operations, innovative tactics, and cutting-edge technologies. Initially, the Russian Black Sea Fleet operated aggressively, launching land attack missiles, enforcing blockades, and occupying critical positions such as Snake Island. In the early months, Russia exerted overwhelming control over the Black Sea, appearing to dictate the course of naval operations.

However, Ukraine defied expectations by leveraging asymmetric warfare strategies, land-based anti-ship missiles, and unmanned systems to level the playing field. One of the most significant turning points was the sinking of the Moskva cruiser, the flagship of the Russian Black Sea Fleet—a symbolic and strategic blow that disrupted Russian naval dominance. Through a combination of ingenuity and evolving tactics, Ukraine steadily eroded Russia's ability to control the maritime battlespace.

Remarkably, despite its naval inferiority, Ukraine forced a shift in the balance of power at sea. The traditional concept of force comparison, a key factor in naval operational planning, was profoundly challenged in this war. Russia, despite its overwhelming numerical and technological superiority, has lost nearly half of its Black Sea Fleet—demonstrating that in modern naval warfare, dominance is no longer solely dictated by fleet size and firepower.

This conflict has not only redefined naval warfare but has also provided a glimpse into the future of naval engagements, where unmanned systems and innovative strategies can compensate for numerical inferiority. The lessons learned from the Black Sea will undoubtedly shape naval doctrines for years to come.

Terms such as UCAV (Unmanned Combat Aerial Vehicle), USV (Unmanned Surface Vehicle), kamikaze drones, FPV (First-Person View) drones, and A2/AD (Anti-Access/Area Denial)—which were already significant in military discussions

before the war—have gained even more prominence among defense planners and naval experts. This conflict has starkly demonstrated how billion-dollar warships, long regarded as the dominant force at sea, can be rendered vulnerable by swarms of lightweight, expendable kamikaze drones weighing just a few tons. The shift in naval warfare dynamics highlights the increasing effectiveness of asymmetric tactics and the need for new defensive strategies in an era where unmanned systems play a decisive role.

THE ROLE OF RUSSIAN BLACK SEA FLEET AT THE ONSET OF THE WAR

Although the majority of the war has been fought on land, the Russian Black Sea Fleet played a crucial role, particularly in the initial stages of the conflict. One of its most significant contributions came in the form of deep-strike missile attacks, launched from both submarines and surface vessels against key Ukrainian military and strategic targets. A large number of Kalibr cruise missiles were fired to support Russian ground forces, striking critical infrastructure, airports, and supply routes in an effort to weaken Ukraine's ability to resist.

Another major operation led by the Black Sea Fleet was the blockade of the Western Black Sea, particularly targeting Ukrainian ports—most notably Odessa, a vital hub for Ukraine's economy and logistics. By severing Ukraine's maritime trade routes, Russia sought to exert economic and strategic pressure, restricting the flow of supplies and military aid. As part of this effort, Russian forces attempted to fortify their presence by seizing Snake Island, a strategically significant outpost.

For the first few months, Russia maintained near-total control at sea. However, the sinking of the cruiser Moskva marked a turning point, shifting the balance in Ukraine's favor. The blockade also had significant global consequences, disrupting Ukraine's grain exports to Europe, the

Middle East, and Africa. This led to soaring wheat prices and even raised concerns about food shortages in some regions. Eventually, with Türkiye's mediation, an agreement was reached to establish a secure corridor for the passage of grain shipments, mitigating the crisis.

Beyond combat operations, the Black Sea Fleet also played a logistical role, with landing ships transporting supplies, vehicles, and reinforcements to various occupied territories. However, Ukraine effectively countered these efforts through precision Storm Shadow cruise missile strikes and kamikaze USV (Unmanned Surface Vehicle) attacks, which sank several Russian landing ships, severely hampering Russia's ability to sustain its forces via sea routes.

KEY EVENTS IN THE WAR AND THEIR IMPACT

Sinking of Moskva Cruiser

On April 13, 2022, Ukraine shocked the world by striking and sinking the Moskva, the flagship of Russia's Black Sea Fleet, with two Neptune anti-ship missiles. This critical attack not only shifted the balance of power in the Black Sea but also exposed severe weaknesses in Russian naval doctrine, operational planning, and personnel training.

As the flagship of the Black Sea Fleet, Moskva was equipped with advanced air defense systems, including dozens of S-300F long-range surface to air missiles and Osa-M short-range missiles. These systems were designed to provide air defense not only for the ship itself but also for the entire fleet in its vicinity. Additionally, as a sensor and command platform, Moskva played a central role in coordinating Russian naval operations in the region. By sinking this ship in its first major naval engagement, Ukraine struck a decisive blow to Russian naval command, fundamentally altering the course of the war.

• **Intelligence Vulnerability:** Although the sinking of Moskva can be analyzed from multiple perspectives, the primary and most significant failure was rooted in intelligence shortcomings. One of the fundamental rules of naval warfare is to remain outside the effective range of enemy weapons. However, at the start of the war, Russian naval forces repeatedly operated within Ukrainian territorial waters, underestimating the threat posed by Ukrainian defenses. Russian intelligence failed to detect that Ukraine's Neptune anti-ship missiles, which were still in the testing phase when the war began, had become operational. This critical oversight led to the Black Sea Fleet continuously operating within Neptune's strike range, ultimately resulting in the loss of its most valuable warship.

• **Missile Defense Weakness:** Further analysis of the Moskva's sinking revealed significant failures in missile defense preparedness. Images and footage released after the attack confirmed that the fire control radars were not active at the time of the strike, rendering the ship incapable of detecting and engaging incoming missiles. The vertical launch systems (VLS) for the S-300F air defense missiles were never activated, preventing any attempt to intercept the Neptune missiles. The close-in weapon systems (CIWS), designed for last-line missile defense, failed to track and engage the approaching missiles, some of them seemed not to be used.

• **Damage Control and Firefighting Vulnerability:** According to open-source reports, 2-3 hours after being struck, the order to abandon ship was given, and the crew began evacuating. In naval applications, damage control and firefighting efforts have often extended for dozens of hours, with ships surviving even catastrophic strikes if the crew could contain fires and flooding.

There are historical precedents where damaged warships were supported by nearby friendly vessels, which would send firefighting teams to aid the stricken ship's crew. However, in the case of Moskva, no such efforts were made. While the exact extent of the damage remains unclear, the fact that a 13,000-ton cruiser sank after being struck by only two missiles highlights major vulnerabilities in damage control training and protocols within the Russian Navy.

• **Psychological Impact:** The sinking of Moskva caused severe psychological and strategic repercussions for Russia. According to international law, ships are considered extensions of a nation's homeland. The loss of a flagship is equivalent to the loss of territory, making this event particularly symbolic and damaging for Russia. The ship's name, Moskva (Moscow), further deepened the psychological impact, as it was seen as a symbolic attack on Russia's capital. The loss of Moskva created a command and control vacuum in the Black Sea, weakening Russia's operational coordination and fleet-wide air defense capabilities.

Following the sinking, Ukraine exploited the reduced air defense coverage in the region. TB2 Bayraktar UCAVs, which had previously struggled against Russian naval air defenses, were now able to operate freely, leading to the destruction of multiple Russian patrol boats—a historic first in naval drone warfare.

Snake Island Incident

Shortly after the war broke out, the Black Sea Fleet captured Snake Island, a small but strategically vital outpost southeast of the Ukrainian coast. Despite its size, the island's location was beneficial for controlling sea routes leading to Ukrainian ports and became a symbol of Russia's blockade in the region. Initially, Russia fortified its position on the island, but the situation shifted dramatically following the sinking of the cruiser Moskva.

With Russia unable to maintain air superiority, Ukraine intensified its aerial operations, carrying out repeated UCAV and

fighter jet strikes on the island. Meanwhile, Russian efforts to reinforce and resupply Snake Island were thwarted by Ukraine's coastal missile batteries and UCAVs, which targeted and destroyed transport vessels, auxiliary ships, and patrol boats operating in the area. Additionally, the island's proximity to the Ukrainian mainland (only 40 kilometers) allowed Ukrainian artillery units to conduct accurate bombardments, further degrading Russian positions.

Facing heavy losses and an unsustainable position, Russia evacuated Snake Island in June 2022. Unable to hold the territory without air dominance, Moscow was also forced to loosen its naval blockade in the region. This event marked a significant success for Ukraine's "Sea Denial" strategy, achieved through a combination of coastal missile batteries, UAV-assisted targeting, and unmanned naval attacks—tactics that will be examined in later sections of this article.

Although strategically significant, Snake Island posed considerable challenges for the Black Sea Fleet due to its distance from Russian-controlled territory and proximity to the Ukrainian mainland. Had Russia been able to establish a layered air and surface defense system on the island, it could have played a key role in securing maritime control in the region.

This incident underscores a crucial lesson in modern warfare: maintaining territorial control without air superiority is nearly impossible. Unmanned aerial vehicles perform exceptionally well when operating in low-threat air environments, and light surface vessels with limited air defense capabilities remain highly vulnerable to precision drone strikes.

Naval Warfare's Introduction to Kamikaze USVs

When most people think of the Russia-Ukraine war, one of the first details that comes to mind is Ukraine's kamikaze unmanned surface vehicle (KUSV) attacks. While USVs were already recognized as an important innovation in naval warfare, few anticipated the extent to which they would reshape the battlefield. Their high speed, low radar cross-section, maneuverability, and powerful explosive payloads made them a lethal threat, but it was their element of surprise that proved devastating for Russian forces.

Repeatedly, conventional defensive measures failed against these small but dangerous vessels, which were often detected too late by radar, leaving targeted ships little time to react. This issue became even more pronounced in swarm attack scenarios, where multiple autonomous kamikaze boats attacked simultaneously. Russia painfully learned that ships had almost no chance of survival in such situations.

Ukraine launched its first USV attack in October 2022, inflicting serious damage on two Russian warships. Following these attacks, Ukraine enhanced its USVs with Starlink satellite communication, significantly extending their operational range. As a result, Ukrainian USVs reached the Russian port of Novorossiysk, expanding the conflict beyond the immediate war zone. After suffering losses in the initial attacks, Russia managed to intercept some subsequent assaults, but in July 2023, Ukraine escalated its tactics by conducting

swarm kamikaze attacks, leading to the destruction of more Russian vessels even while they are in Sevastopol Naval Base.

In addition to naval targets, Ukraine targeted the structural supports of the strategically vital Kerch Bridge, which connects Russia to the Crimean Peninsula. The attack inflicted extensive damage, rendering the bridge inoperable for two weeks—marking the first recorded instance of an unmanned surface vehicle being used against critical infrastructure.

As a result of these relentless attacks, Russia lost a significant number of warships, and the psychological impact of USVs played a key role in Russia's decision to evacuate Sevastopol Naval Base's port facilities. Viewed as a successful execution of Ukraine's Sea Denial strategy, these kamikaze USV attacks have been one of the primary factors behind the decline of Russian naval dominance in the Black Sea. Moreover, they have served as a wake-up call for navies worldwide, prompting a reevaluation of future force projection and defense doctrines to address this emerging threat.

The Danger of Drifting Mines in the Black Sea

Sea mines, largely forgotten as a naval threat until the Russia-Ukraine war, have regained notoriety. Allegedly deployed for various tactical purposes, these mines were dislodged by adverse weather, drifting into the Black Sea and posing significant risks to commercial shipping and coastal security in the region.

The threat of drifting mines first surfaced on March 3, 2022, when an Estonian cargo ship sank after striking a mine off the coast of Odessa. Two weeks later, on March 18, Russia's Novorossiysk coastal radio station issued a NAVTEX alert, warning that mines laid by the Ukrainian Navy near Odessa had broken free due to stormy conditions. Russia accused Ukraine of violating the Hague Convention of 1907, claiming approximately 420 mines were adrift. In response, Türkiye's Samsun NAVTEX station also alerted mariners, citing the Russian warnings. As both sides blamed each other, the "fog of war" obscured the true origins and quantity of these mines.

Over the next two years, more than a dozen mines were either destroyed or detonated near the coasts of ripairan countries. The presence of these mines not only endangered commercial shipping but also drove up insurance premiums and logistics costs.

Türkiye, possessing the region's most capable mine-countermeasures (MCM) fleet, led efforts to locate and neutralize these threats. Using MCM ships, maritime patrol aircraft (MPA), helicopters, and UAVs fitted with synthetic aperture radars, Türkiye performed extensive

mine-clearing patrols and operations. Subsequently, under Türkiye's leadership, regional countries began negotiations to form a joint mine-clearing initiative. Given the challenges posed by drifting mines—including their small size, dark coloration, and the dynamic nature of currents—such cooperation was deemed essential.

On January 11, 2024, Türkiye, Bulgaria, and Romania signed a Memorandum of Understanding (MoU) in Istanbul to enhance regional cooperation against drifting mines. Dubbed "MCM Black Sea," this initiative marked the most comprehensive joint effort to secure maritime traffic in the Western Black Sea since the war's inception. This collaboration aimed to protect maritime commerce, ensure global supply chain continuity, safeguard vessels, and manage insurance costs, while also bolstering regional security and cooperation among the NATO allies.

Key Lessons from Drifting Mines:

• Legal Compliance: Adherence to the Hague Convention is critical for international security, as it establishes guidelines for warring states to prevent harm to third parties.

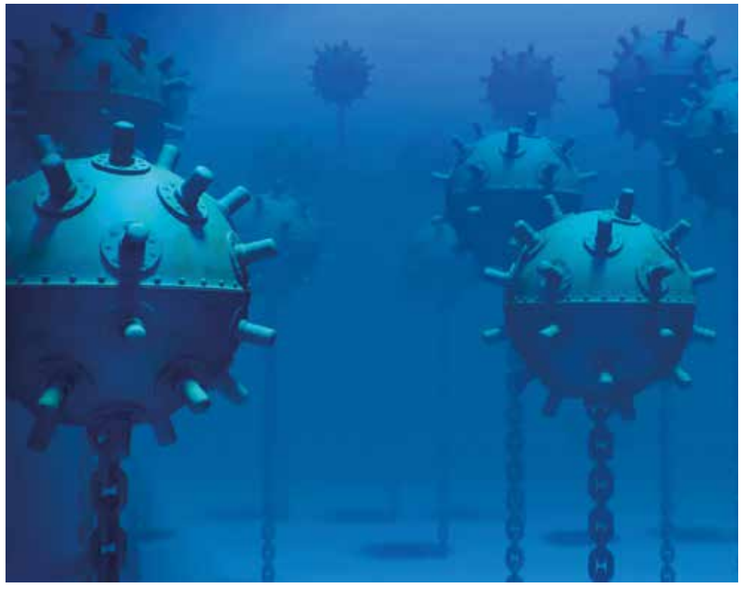
• Transparency: Openly sharing information about hazardous warfare assets, like sea mines, is essential for navigational safety.

• Robust Anchoring Systems: Mines must be anchored securely to prevent detachment in severe weather, minimizing unintended threats.

• International Cooperation: Effective mine countermeasure (MCM) operations rely heavily on regional collaboration, enhancing safety and security for all maritime stakeholders.

> The problems caused by drifting mines provided important lessons on the effectiveness of this weapon and the threats it poses.

The resurgence of drifting mines in the Black Sea has underscored the persistent and evolving dangers of maritime mine warfare, compelling a reevaluation of defensive measures and international collaboration.



Protection of Shipyards

The period when a ship is most vulnerable is undoubtedly during maintenance and repair. Since ship repair carries a high risk of accidents, vessels typically enter shipyards with their weapons and fuel removed, leaving them unable to defend themselves. While most shipyards have sufficient capabilities to protect against minor threats such as sabotage, the Russia-Ukraine war has demonstrated that far more is required when facing an actual wartime scenario.

On September 13, 2023, Ukraine launched a major strike on the Sevastopol shipyard, using drones and Storm Shadow cruise missiles. This attack inflicted severe damage on the Advanced Kilo-class (Project 636.3) submarine Rostov-on-Don and the Ropucha-class landing ship Minsk. Less than a year later, in August 2024, Ukraine conducted another cruise missile attack, sinking Rostov-on-Don, which was still under repair. This marked a rare event in naval warfare, as submarines are almost never targeted by cruise missiles. Additionally, even an S-400 air defense battery, intended to protect the region, sustained damage during these strikes. Following these Ukrainian operations, Russia was observed deploying a decoy submarine in Sevastopol to mislead Open Source Intelligence (OSINT) analysts.

In prolonged conflicts, ships operating in war zones will inevitably require shipyard maintenance at some point. However, as the loss of a warship is critical and replacements are nearly impossible during ongoing operations, ensuring the protection of shipyards is of paramount importance. The Russia-Ukraine war has once again highlighted this necessity, reinforcing the need for enhanced security measures to safeguard vessels undergoing repairs.

CONCLUSIONS AND LESSONS LEARNED

The Russo-Ukrainian war has shattered many long-held assumptions in naval warfare, while also proving that ignoring

fundamental principles comes at a steep cost. Intelligence failures, flawed operational planning, and underestimating asymmetric threats resulted in severe losses for Russia, offering valuable lessons for navies worldwide.

This conflict reaffirmed that accurate and reliable naval intelligence is critical, and that misjudging enemy capabilities can lead to catastrophic losses, even for the most powerful fleets.

Additionally, the war underscored that capturing strategic areas is only possible with sustainable defense and supply lines. The battle for Snake Island demonstrated that controlling territory is just as challenging as seizing it. Meanwhile, unmanned systems have ushered in a new era in naval warfare—UAVs have proven indispensable for reconnaissance, surveillance, and precision strikes, while USVs (unmanned surface vehicles) have redefined naval doctrine, making even large warships vulnerable.

> This war has clearly demonstrated that traditional naval power alone is no longer sufficient.

Despite technological advancements, sea mines remain highly effective for controlling maritime space. However, if not properly managed, they pose serious threats to neutral or friendly forces, as seen with drifting mines in the Black Sea.

Another key lesson is that ships undergoing maintenance are among the most vulnerable targets in warfare. The sinking of the Rostov-on-Don submarine while under repair at the Sevastopol shipyard highlighted that protecting shipyards and military maintenance facilities is just as vital as securing warships at sea.

This war has made it evident that traditional naval power alone is no longer sufficient. Unmanned systems, now a permanent fixture in naval combat, have rendered 20th-century weapons and tactics insufficient against 21st-century threats. To succeed in modern naval warfare, states must develop stronger intelligence capabilities, advanced defense systems against unmanned threats, and innovative doctrines tailored to emerging challenges. Failing to adapt to high-tech warfare, including precision-guided weapons, robotic systems, and artificial intelligence, will come at a high price—even for the world's most powerful nations.

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AIRCAR AND THE RISE OF FLYING CARS

In recent years, technological innovations have been introducing solutions that are set to radically transform our transportation habits. As flying cars transition from science fiction to reality, Türkiye-based AirCar has been gaining attention with its vision. In this exclusive interview with the company's founder, Eray Altunbozar, we had an in-depth discussion about the technological development process of flying cars, the challenges faced, certification requirements, and future goals. AirCar aims to revolutionize both individual and commercial transportation with electric and autonomous aerial vehicles. Eray Altunbozar shared this exciting journey with A5 Magazine readers.

1. How did you start in the industry?

Flying cars have been a technology we have dreamed of for many years. In 2017, we entered this field under the name AirCar. Our goal was to develop innovative air vehicles that would fundamentally change people's transportation habits. These vehicles were initially designed to be electric and autonomous, and they were especially planned as air taxis to accelerate urban transportation. However, progress and regulations in the industry moved more slowly than expected. Adapting technology to the aviation sector is a highly complex process. It was anticipated that flying cars would be launched in 2023-2024. However, this did not materialize due to both technical and regulatory challenges. Issues such as the safety, performance, and infrastructure integration of electric and autonomous vehicles took time to resolve. Additionally, despite companies making significant investments in this field, they have not yet achieved the results they expected.

2. How are air vehicles classified in terms of capacity?

Air vehicles are divided into three categories:

- Single-seater,
- Two-seater,
- Models capable of carrying more than two passengers.

As AirCar, we operate within the single- and two-seater models of electric air vehicles. VTOL vehicles, on the other hand, are divided into two main categories: VTOL (Vertical Take-Off and Landing) is an abbreviation used for aircraft capable of taking off and landing vertically. It is actually derived from helicopters.

- Vertically taking off and landing: helicopters
- Taking off and landing from a runway: airplanes

Our vehicles are electric vehicles capable of vertical take-off and landing. Normally, internal combustion engine airplanes are two-seaters and do not differ from regular airplanes. However, our AirCar electric planes are certified under ELESEY certification standards with new technology multicopters.

AirCar has two models: The single-seater model is called "Ultralight," and it does not require any certification or pilot license. It can be used for recreational purposes and costs approximately $80,000. They cannot fly too close to city centers. A pilot license is not required; only technical knowledge is provided. It can stay in the air for 35 minutes.

The two-seater model is referred to as "Light Sport." Light Sport Aircraft (LSA) is a license category designated for light sport aircraft. Initially, it was designed solely for two-seater aircraft with a specific weight limit (max. 500-600 kg). However, as of this year, flying cars, multicopters, and two-seater helicopters have also been included in this category. This expansion

has enabled the certification of these vehicles. Air vehicles in the LSA category cannot be used commercially. It costs approximately $250,000. They do not require type certification but must obtain LSA certification. It can fly anywhere like a helicopter. A pilot license and training are mandatory (training duration is between 1 week and 10 days). With today's technology, the two-seater AirCar model can stay in the air for 45 minutes.

Speed limits of the vehicles
Speed limit: 120 km/h
Altitude limit: 100-120 meters The vehicle automatically controls speed and altitude limits.

Distance and costs
Single-Seater Model: 40 km range
Two-Seater Model: 80 km range
Cost: Approximately $5 for a 70 km flight (depending on electricity prices).

Permit requirements
Single-Seater Model: No civil aviation permit required.
Two-Seater Model: Must obtain LSA certification from Civil Aviation and requires an LSA pilot license.

3. How can the required pilot certification be obtained to fly these vehicles?

Becoming a Light Sport Aircraft pilot is a fairly accessible process. A person only needs to complete 30 hours of training. This training consists of simulation, flight, and ground training. If you want to fly a helicopter, the training duration increases to 35 hours. Everyone who completes the training, passes the health test, and can easily obtain a pilot certificate.

Individuals can purchase and fly these vehicles. The only condition is that the vehicle must be a two-seater. Anyone who completes the training and obtains the necessary certification can operate these vehicles.

4. What are the differences between LSA Certification and Type Certification in the aviation sector in terms of scope, validity, and authority?

LSA Certification
Scope: It is a document issued by the Directorate General of Civil Aviation (SHGM) in Türkiye. It demonstrates compliance with local aviation regulations.
Validity: It is valid within the borders of Türkiye and ensures compliance with national aviation regulations.
Target Areas: It is granted to companies or individuals that meet Türkiye's local standards in various fields such as maintenance, repair, modification, production, and operation.
Advantages: It enables businesses that meet the requirements of aviation authorities in Türkiye to operate legally.
• If you are working on projects within Türkiye, the LSA Certification is sufficient.

EASA Certification
Scope: It is an international document issued by the European Union Aviation Safety Agency (EASA). It demonstrates compliance with aviation standards in European Union countries.
Validity: It is recognized by many countries, primarily EU countries, and has international validity.
Target Areas: Organizations or individuals that certify compliance with global aviation safety standards in areas such as aircraft design, production, maintenance, and pilot licensing can obtain this certification.
Advantages: It ensures validity in international flight operations and is mandatory for access to the European market.
• If you are planning international operations or European-based projects, an EASA Certification is mandatory.

5. What are the advantages of LSA certification?

LSA certification provides significant convenience for aircraft manufacturers. Obtaining certification through an engineering application is quite easy. It is much faster and more cost-effective than normal commercial type certifications. It also offers advantages in terms of piloting. For example, individuals who want to obtain this certification in the United States can do so at a cost of between 5,000 and 10,000 dollars. The certification follows a buy-and-use principle. Previously, only two-seater normal airplanes could receive this certification. However, with new regulations published in the United States, multicopters and helicopters are now also included in the LSA category.

There is also an LSA certification issued in Türkiye. However, currently, only airplanes can receive certification. Türkiye generally follows European Union Civil Aviation regulations. Updates made in the United States quickly transfer to Europe and then to Türkiye. In the near future, LSA certification regulations for electric air taxis are expected to reach Türkiye. We are also in discussions with Civil Aviation regarding this matter.

Aircraft with LSA certification are generally used for personal use, training, agriculture, recreation, and point-to-point travel. It is widely preferred in the agricultural sector. However, this certification does not grant permission for commercial passenger transport or fee-based services. In other

words, it promotes individual use rather than passenger transport, like an air taxi.

6. What are the requirements to obtain an LSA pilot license?
The requirements to obtain this certification are quite simple. Anyone in good health, with normal vision, functioning hands, and who is eligible for a driver's license can obtain this certification. The training processes are quite accessible. In Türkiye, this training is provided by partner universities and flight schools.

7. What technological advancements are expected for LSA-certified aircraft?
LSA certification is based on global standards determined by the United States and the European Union. Ninety-two percent of flying vehicles worldwide have been certified under these two centers. Türkiye, along with the rest of the world, follows these regulations.

Aircraft in the LSA category are certified according to ASTM standards. In commercial aviation, any newly developed technology must be proven through extensive testing, which can take three years or more. However, the LSA category does not require such strict testing requirements, allowing the process to advance much faster.

8. What conveniences does AirCar offer to users?
Customers who purchase an AirCar go through training provided by AirCar. The vehicles are fully electric. Users can charge their vehicles at home using a standard 400-volt battery charger, and a fast charging option allows full charge within a few hours.

Battery packs are removable, but this process requires unscrewing 4-5 bolts. It is as simple as changing a car tire. Spare battery packs will also be available for purchase.

The vehicle alerts the user when the battery reaches 20% charge. If the user continues flying, the vehicle automatically lands at a safe location and shuts down, preventing the battery from fully depleting.
Our vehicles generate significantly less noise compared to helicopters. Since the sky is vast and open, the likelihood of accidents is low. Just like cars on the road, eVTOL aircraft are designed to detect and avoid each other, minimizing the risk of collisions.

9. Where can AirCar vehicles be flown? Is it possible to cross the Bosphorus?
Under standard flight procedures, pilots must inform the control tower before takeoff, and the flight route must be reported through the NOTAM system. Communication with the tower continues throughout the flight.

The single-seater model is not allowed to fly too close to city centers or airports. Apart from these restrictions, users can fly anywhere as long as they comply with altitude and speed limits. Takeoff and landing can be performed on a 5x5 meter flat area or a helipad.

The two-seater model can cross the Bosphorus. Users can travel from an airport to their desired hotel. This model can enter airports like a helicopter.

10. Does AirCar provide training to customers who purchase a vehicle?
Yes, we provide training. Training costs range between 5,000 and 10,000 dollars.

11. How do you ensure safety in your vehicles?
Aviation follows the single-point-of-failure principle. This means that the failure of any single component should not cause an accident. However, if two or three components fail, the vehicle may become inoperable.

This issue contributes to some aviation accidents. To prevent such scenarios, our vehicles are equipped with ballistic parachutes. If the system detects an emergency, the ballistic parachute is automatically deployed. Within seconds, the parachute opens, ensuring a safe landing.

This system is widely used in training aircraft and has significantly reduced fatal accidents. Since electric air vehicles are lightweight, this system is highly feasible for AirCar.

12. What are AirCar's future goals?
AirCar is currently conducting manned flight tests. By the end of 2025, deliveries of the single-seater model are planned to begin. By 2026, deliveries of the two-seater model will start. Our goal is to integrate this technology into both commercial and personal aviation, bringing a new dimension to air transportation.

Developments in the Turkish Defense Industry Over the Past 3 Months

November 13, 2024

The second prototype of the HÜRJET jet trainer and light attack aircraft, developed by Turkish Aerospace Industries (TUSAŞ), successfully completed its maiden flight. According to a statement from TUSAŞ's official social media accounts, the prototype reached an altitude of 10,000 feet, flew at a speed of 200 knots, and stayed airborne for 26 minutes.

November 19, 2024

The Bayraktar TB3 armed unmanned aerial vehicle, developed domestically by Baykar Technologies, successfully completed its first live takeoff and landing tests on the TCG Anadolu.

November 20, 2024

• The 76/62mm "Deniz Khan" National Naval Gun, produced by MKE, was delivered to Istanbul Shipyard Command to undergo acceptance tests as part of its integration into the Hisar-class Offshore Patrol Vessel TCG KOÇHİSAR.
• Repkon Defense, which gained attention for exporting 155mm ammunition to the United States, signed an agreement with Wah Industries Limited (WIL) to establish a production and filling line for 155mm artillery shell bodies in Pakistan.

November 21, 2024

• STM signed a Memorandum of Understanding (MoU) with Karachi Shipyard & Engineering Works (KSE&W) of Pakistan at the IDEAS 2024 exhibition for the supply of Logistic Support Ships to the Royal Saudi Navy.
• TOBB University of Economics and Technology (TOBB ETÜ) introduced Türkiye's first quantum computer, QuanT (Quantum Computer of TOBB ETÜ), during a ceremony held at the university facilities.

November 27, 2024

Otokar won the project to supply 1,059 4x4 tactical wheeled light armored vehicles for Romania's Ministry of Defense through Romtehnica. As part of Türkiye's largest single armored vehicle export deal, the first 278 COBRA II vehicles will be produced in Türkiye, with the remainder manufactured in Romania. Deliveries are planned to begin in the last quarter of 2025 and be completed in batches over five years.

December 5, 2024

STM officially commenced construction of the first of three corvettes for the Royal Malaysian Navy's LMS Batch-2 program with a steel-cutting ceremony at Istanbul Denizcilik A.Ş. Shipyard.

December 12, 2024

The first Hisar-class Offshore Patrol Vessel (OPV), TCG Akhisar (P-1221), built by Istanbul Shipyard Command under the main contractor ASFAT, began sea trials.

December 13, 2024

The first Hisar-class Offshore Patrol Vessel (OPV), TCG Akhisar, conducted its maiden voyage as a part of the sea trials. ASFAT, the project's main contractor, plans to deliver two Hisar-class OPVs to the Turkish Navy in 2025.

December 15, 2024

Minister of National Defense Yaşar Güler announced that the first steel-cutting ceremonies for the TF-2000 air defense destroyer and the national aircraft carrier will take place in the early months of next year, officially starting construction activities.

December 16, 2024

A $24 million agreement was signed between the Ministry of National Defense and Katmerciler for the procurement of military equipment.

December 17, 2024

• STM won the tender for the Portuguese Navy's Logistic Support Ship project, surpassing some of the world's leading military maritime companies. Two Replenishment and Logistic Support Ships will be constructed in Türkiye under STM's leadership. This marks the first time Türkiye has exported military ships to a European Union (EU) and NATO member country.

• The Ares Shipyard and Meteksan Defense partnership completed the production phase of the ULAQ 12 ASuW & ASW Unmanned Surface Vessel Project, designed to meet the needs of the Turkish Navy under the coordination of the Presidency of Defense Industries.
• The 6th Defense Industry Meeting, organized by SAHA Istanbul and the Istanbul Chamber of Industry (ISO), was held in Istanbul. The event, which began in 2017, has now become a traditional gathering.
• Machinery and Chemical Industry Inc. (MKE) signed an agreement with the Kosovo government to establish a modern factory in Kosovo for producing NATO-standard ammunition.

December 18, 2024

Ares Shipyard and Meteksan Defense were commissioned to produce four units of the ULAQ KAMA Disposable Unmanned Surface Vessel.

December 20, 2024

A Memorandum of Understanding was signed between the Turkish Presidency of Defense Industries and the Spanish Ministry of Defense to establish cooperation in the Jet Trainer Aircraft Project.

December 26, 2024

The test firing of the IHA-122 Air-to-Ground Ballistic Supersonic Missile was successfully conducted from the AKINCI UAV. The test included the "fire-and-update" feature for the first time. The IHA-122 hit a free target at sea with high accuracy, completing its mission successfully.

December 27, 2024

Baykar announced the acquisition of Piaggio Aerospace, a 140-year-old Italian aviation company.

December 28, 2024

• ASELSAN signed an agreement with the Presidency of Defense Industries for Air Defense Radar Systems procurement, totaling $170.9 million and 1.95 billion TL. Deliveries under the agreement will take place between 2026 and 2031.
• Minister of Transport and Infrastructure Abdulkadir Uraloğlu announced that Türkiye's first domestic communications satellite, Türksat 6A, has reached its service orbit at 42° East. After completing testing, it is set to become operational in the first quarter of 2025.

December 31, 2024

• Roketsan successfully conducted test firings of the KARAOK Portable Anti-Tank Missile.
• The HÜRKUŞ-II trainer aircraft, developed by Turkish Aerospace Industries (TUSAŞ), completed its maiden flight with its new design. It flew for 20 minutes at an altitude of 6,500 feet and a speed of 140 knots.

January 2, 2025

At the Ministry of National Defense's weekly briefing, it was announced that the first steel-cutting ceremonies for the National Aircraft Carrier (MUGEM) and TF-2000 air defense destroyer took place at Istanbul Shipyard Command, while the first steel-cutting for the MİLDEN National Submarine took place at Gölcük Shipyard Command. Construction has officially begun for all three major projects.

January 11, 2025

• Minister of Transport and Infrastructure Abdulkadir Uraloğlu announced that the test processes of the first domestic and national surveillance radar, the National Surveillance Radar Mode-S SSR (MGR), have been successfully completed.

• Two MİLGEM İstif-class frigates, İZMİR (F-516) and İZMİT (F-517), were launched. The İZMİR frigate is being constructed at Anadolu Shipyard, while the İZMİT frigate is being built at Sedef Shipyard under the coordination of the Presidency of Defense Industries and in partnership with TAIS and STM.

January 13, 2025

Turkish Aerospace Industries (TUSAŞ) successfully conducted the first internal release of the TOLUN munition from the ANKA III unmanned combat aircraft.

Important Defense Industry Events in the Next 3 Months

Eero India 2025
Bangalore/India
10-14 February
www.aeroindia.gov.in

IDEX/NAVDEX 2025
Abu Dhabi/UAE
17-21 February 2025
www.idexuae.ae

International Military Helicopter 2025
Twickenham/UK
25-27 Feb 2025
www.defenceiq.com/events-militaryhelicopter

UDT 2025
Oslo/Norway
25-27 MArch 2025
www.udt-global.com

IWA Outdoor Classics
Nuremberg/Germany
27 February- 2 March 2025
www.iwa.info

LAAD Security&Defence 2025
Rio de Janeiro/Brazil
1-4 April 2025
www.laadexpo.com.br/defence

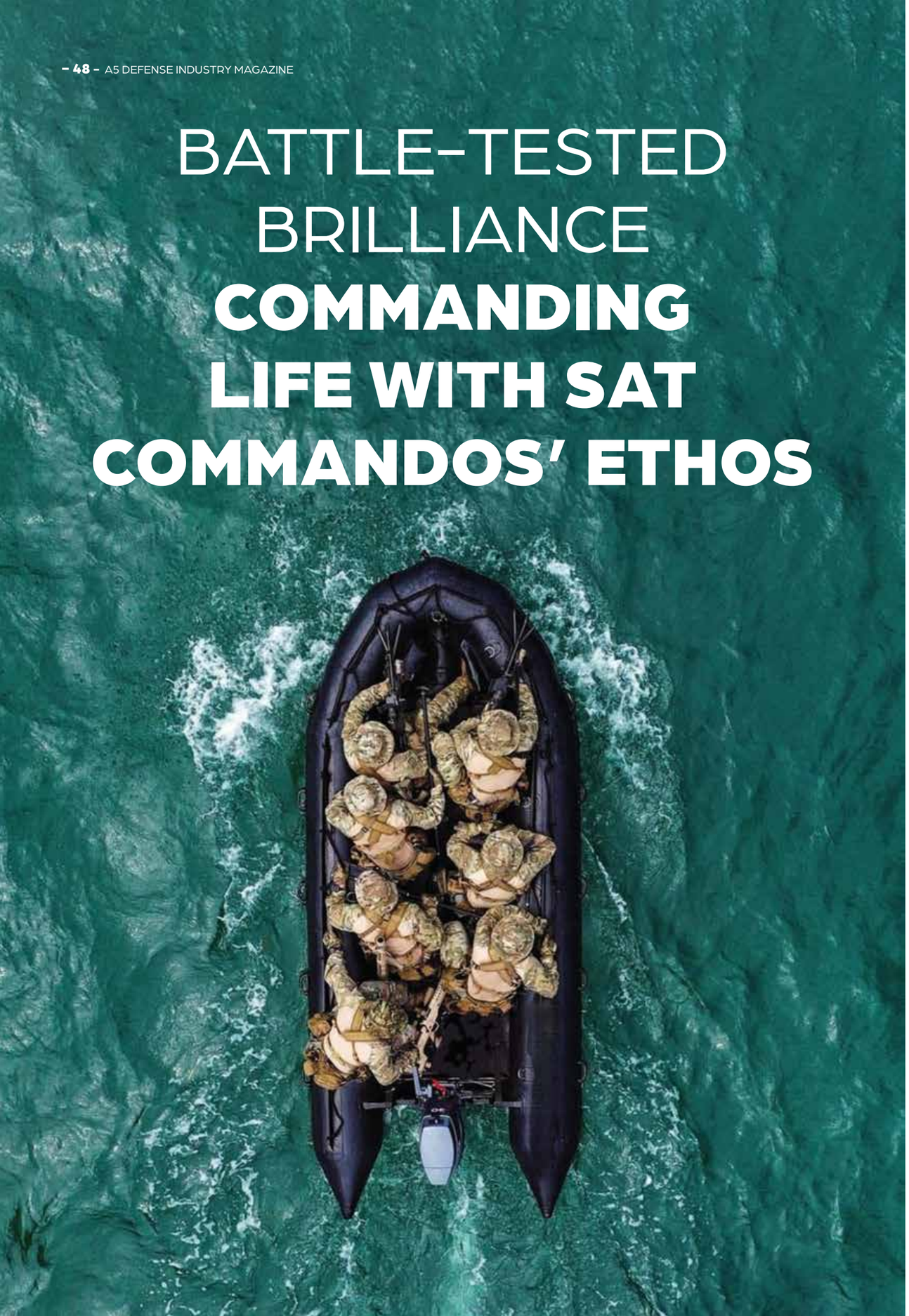
Sea Air Space (SAS) 2025
Maryland/US
6-9 April 2025
www.seaairspace.org

ASDA 2025
Zagreb/Croatia
8-10 April 2025
www.adriaticseadefense.com

Air Force Africa 2025
Abuja/Nigeria
22-23 April 2025
www.airforceafrica.com

SITDEF 2025
Lima/Peru
24-27 April 2025
www.sitdef.com

BATTLE-TESTED BRILLIANCE **COMMANDING LIFE WITH SAT COMMANDOS' ETHOS**



The SAT Commandos of the Turkish Navy stand as paragons of resilience, loyalty, and strategic precision in the world of military excellence. Born from the depths of the sea and tested in the harshest of environments, they embody not just physical mastery but an unwavering mental fortitude that defines true strength. I am incredibly proud of their skills, discipline, and integrity as they represent the finest qualities of Türkiye's defense forces. Watching them operate is nothing short of inspiring and I always look up to their philosophy to draw lessons for my daily life, helping me operate in an optimal way in every situation.

ARTICLE
DİZE KANDU
Research Analyst, Writer

Everywhere we turn today, we are bombarded with self-development mottos that are either unsustainable or so magical that they crumble under real-world pressure. If I am to choose a guide for navigating life's challenges, I prefer the lessons of those who have applied their ethos, mastered it, and executed it successfully. Look no further than SAT commandos, silent heroes we rarely hear of because they operate with a quiet brilliance. This article, then, serves as both an accolade to their legacy and a guide for us.

When people think of SAT commandos, images of iron-clad warriors who can swim through turbulent waters, scale insurmountable cliffs, and vanish into the shadows naturally come to mind. Yet, the real engine behind their extraordinary feats is not brute strength or the breadth of their stamina; it is the unmatched resilience of their minds.

I remember standing on a dock during a naval exercise, the sun barely breaking the horizon as the sea reflected its quiet resolve. I watched as the commandos emerged from the water; silent, precise, and deliberate in their movements. And when it was time to act, the precision and calm displayed amidst chaos were nothing short of inspiring. It was a powerful experience that spoke volumes without a single word uttered: the sea is their training ground, their ally, and their greatest adversary. Their training is not just about survival, but about mastery of self, of circumstances and of purpose. The sea itself teaches them this balance; relentless and unpredictable; In many ways, life mirrors the sea, unpredictable, vast, and demanding of those who traverse it.

I draw parallels between their ethos and life, because I believe that everything in existence can be a teacher, a metaphor for life, if we are aware of it. Through their mindset, I remind myself that with proper training, resourcefulness, direction, purpose, value system, discipline and courage, I can handle pretty much everything, be they personal or professional.
Not everyone can become a SAT commando; that role is reserved for a rare few who are tested in ways most of us can barely imagine. But the philosophy they embody is universal. Their lessons on discipline, purpose, and mental toughness remind us that strength is not always about overpowering challenges, but also about outlasting them.

A brief clarification is in order here: While these lessons and principles may evoke a sense of perfection, they are, of course, not always flawlessly implemented by individuals. My reference to SAT commandos does not imply that I idealize them as perfect beings or that they consistently embody these principles in every aspect of their personal lives. Undoubtedly, they are human and carry all the complexities that come with it. What truly stands out, however, is their commitment to internalizing these values and their determined pursuit of an almost unattainable ideal. Ultimately, what we emphasize here is not the individuals themselves, but the strength of the philosophy they represent. It's important to remember that holding a title does not necessarily equate to fully embracing the values and ethos it stands for. After all, not everyone who wears a crown is a king.

Let's dive into how we, too, can conquer life's challenges with principles extend far beyond the battlefield.

BEYOND THE BATTLEFIELD: A WAY OF LIFE

"The way you do anything is the way you do everything."

I'm fortunate to count many SAT Commandos among my friends, alongside Navy SEALs from the USA. Their ethos is defined by a singular dedication to purpose that reaches far beyond the battlefield, shaping a mindset where every action, decision and sacrifice is driven by a higher calling, not just a profession. Time and time again, I've found myself in awe of how they push their physical, mental, and emotional limits to an edge most of us can barely fathom, then thrive there. Their strength isn't just the result of rigorous training; it's the embodiment of a higher purpose, a mission greater than themselves.

Let's take a well-known exercise; a commando must hold their breath underwater while carrying a weight for a distance, a task that demands both mental stillness and physical endurance. The body naturally fights back, signaling panic, but those who succeed have trained their minds to stay focused under pressure. We all carry unseen weights, struggling to move forward while keeping our composure, under pressure. The lesson here is clear: calm the mind, conserve energy, and keep going, no matter how heavy the burden or seemingly endless the challenge is.

Their way of life teaches us that excellence is never accidental, it's intentional, deliberate, and built on consistency. Regardless of the issue at hand, the mindset you adopt can change the outcome. To live with purpose, as they do, is to embrace the idea that every action, no matter how small, carries weight. It's a lesson in mastery, one that we can all apply: The way you do anything is the way you do everything.

We may not endure the same physical challenges, but just knowing such people exist, who can operate at such a high level, can push our minds to aim for peak performance. It's a subconscious nudge that reminds us: there's always a better way to handle the situation, if only you train yourself to see it.

THE TRAINING: WHERE SARCASM MEETS PUSH-UPS

"The only easy day was yesterday."

When you witness a SAT commando moving with effortless precision, it's easy to forget the immense adversity that forged that capability. The training, relentless, unyielding and at times brutal, is designed to break individuals down, only to rebuild them stronger. It's not the push-ups, the cold nights, or the hours spent immersed in freezing water that make them warriors; it's what those moments teach their minds: Adversity is not an obstacle, it's a stepping stone.

In one infamous exercise, candidates are made to crawl through muddy, freezing trenches under a downpour, while instructors pepper them with sharp commands and biting sarcasm. It's a test of mental grit; a chance to see who has the focus to keep moving forward when every instinct says to stop. The mud, the weight of soaked uniforms, and the chill seeping into their bones serve as metaphors for life's trials. How many of us, faced with an overwhelming challenge, freeze in place or look for the easiest way out? The SAT commandos teach us that growth comes from moving through discomfort, not away from it.

Their training emphasizes control. Picture skydiving; a leap into the unknown where there is no room for hesitation. With the wind roaring past and the earth approaching fast, a commando must rely on training, trust, and precision to land safely. That moment can be executed successfully thanks to the discipline built over countless hours, transforming fear into focus. This exercise is a stark metaphor for life: when the moment comes to act, preparation and trust in your ability are all you have. Each exercise they do, strips away the noise of the world, leaving only the unshakable truth: to endure, you must sharpen your mind to work in harmony with your body, trust those around you, and embrace discomfort as the path to growth.

We live in a world that often avoids discomfort at all costs. We seek out the path of least resistance, hoping life's storms pass us by. But the warrior mindset flips that script. Real strength comes not from avoiding adversity, but from embracing it, understanding that every setback, every challenge, is a chance to get sharper, tougher, and more resilient.

"The only easy day was yesterday". Every new challenge is meant to be harder than the last, not because adversity is cruel, but because it is the only true measure of growth. The SAT Commandos teach us that the weight you carried yesterday prepared you for today's burden, and today's hardship will prepare you for tomorrow's unknowns. To live by this principle is to embrace the relentless rhythm of progress, to meet each challenge, not with resistance, but with the quiet understanding that struggle is the architect of strength, and discomfort the gateway to mastery.

MENTAL TOUGHNESS: MIND OVER MAYHEM

"It's not the size of the man in the fight, but the size of the fight in the man."

For a SAT commando, the real battleground is the mind. Physical strength and endurance may form the foundation, but it is mental toughness, the ability to remain calm, clear, and calculated, that truly defines their success. It is the skill of seeing through chaos, of staying sharp when every external force is trying to fray the edges of control.

A SAT commando doesn't just endure high stress; they master it. This mastery comes from years of exposure to extremes: operating in unknown territories, deprived of sleep, food, or certainty, while still making life-or-death decisions with precision. I once heard a SAT commando describe the moment of preparing for a final approach into hostile territory: "Lying still for hours, concealed in the underbrush, while every sound amplified the tension. A single wrong move could compromise the entire mission. You learn to silence your instincts," he explained, "to push past the discomfort and fear, narrowing your focus to the one thing you can control; the next move." Mental toughness, in these moments, is the ability to shrink the impossible into something manageable, one breath, one inch, one move at a time.

Commandos teach us that the mind, like any muscle, can be trained. They hone it through drills that demand strategic thinking under pressure; navigating labyrinthine obstacles, solving tactical problems in seconds, or holding their ground in zero-visibility environments. In a sense, they show us that toughness is not just resistance to pain, but the ability to outthink it, to disarm its hold on you.

What does this mean for us? It means that in our lives, mental toughness is not just about endurance; it is about clarity of purpose. The ability to push through discomfort, uncertainty, and fear comes down to focus; knowing why you are moving forward. Whether it's a daunting project, a personal loss, or an overwhelming decision, the way forward is to meet chaos not with panic, but with presence.

Because if the why is powerful, how is easier.

PRECISION: LIFE AS A TACTICAL & STRATEGICAL MISSION

"It is better to be a warrior in a garden, than a gardener in a war."

For a SAT commando, precision is not a skill, it is a creed. In operations where the stakes are life or death, there is no room for half-measures or second-guessing. Every movement, decision, and shot are deliberate, calculated, and executed with an almost poetic accuracy. It is the quiet art of turning chaos into order and perhaps, in its essence, life demands the same of us.

Commandos approach missions with meticulous planning. Before a deployment, every variable, the terrain, the weather, the opposition, is scrutinized, leaving nothing to chance. Once in action, they adapt as conditions change but never lose sight of the mission's objective. This mindset, purposeful action coupled with strategic flexibility, is something we can all apply to our lives. Imagine treating your goals, both personal and professional, with the same level of focus. Having clarity of purpose is like planning the mission; executing it with precision transforms good intentions into measurable results.

In one NATO diving exercise, a SAT commando says, "The visibility is not so good, but it's not a problem for the divers. They only need to see the compass." Reflect on this for a moment; how simple, yet profoundly impactful, this lesson is. The commando delivers it so naturally, as part of his technical briefing, yet it's deeply ingrained in his mindset. It's not just something he says; it's a principle he lives by. This is how we know they truly walk the talk, no theatrics, just authentic ethos in action.

In our world where we often demand clarity before we take a step, these words carry powerful wisdom. Life doesn't always offer perfect visibility, whether in relationships, careers, or decisions. We often face murky waters where the horizon is obscured, and doubts creep in. But like the SAT commandos, we don't need to see everything to move forward. We just need a compass and courage. The compass represents our values, our training, our resourcefulness, our purpose and our inner guide. When we align with it, we don't need external validation or crystal-clear conditions. We trust our direction and keep swimming, knowing that clarity will come as we move. And here's where courage comes in. It takes immense bravery to navigate when visibility is low. To trust in your compass is to embrace uncertainty with strength. Our commandos teach us that courage isn't loud or dramatic; it's quiet and steady, found in each deliberate movement toward the unknown. This philosophy also reminds us to simplify. We don't need to see the entire journey to take the first step; we just need to know the next right thing to do. And sometimes, that's all the confidence we need to overcome fear.

The discipline of precision teaches us to be both planners and doers, thinkers and executors. Like warriors who train relentlessly for moments they hope never come, we must prepare ourselves not for the battles we wish for, but for the ones that life inevitably demands.

ADAPTABILITY: FLEXIBILITY IS THE REAL SIX-PACK

"When the wind changes, adjust your sails."

One of the most remarkable qualities of SAT commandos is their ability to adapt to ever-changing environments. Whether operating in deserts, seas, mountains, or urban landscapes, their capacity to swiftly adjust is not just key to survival, it is key to success. Adaptability, however, is more than just a reaction to external shifts. It is an internal flexibility, a cultivated ability to remain composed and focused, even when uncertainty clouds the path forward.

In their world, plans rarely unfold as expected. Missions change mid-operation, weather turns hostile, and unforeseen obstacles emerge. Yet, instead of succumbing to frustration or panic, commandos shift, recalibrate, and move forward always with their objectives clear. This mental agility, this refusal to cling to a single rigid plan, is what allows them to thrive where others falter.

I think of a SAT training drill where candidates are tasked with completing a terrain course while unexpected variables are thrown at them; shifting terrain, smoke obscuring their vision, or surprise instructions mid-run. The candidates who succeed are not necessarily the fastest or the strongest; they are the ones who can quickly process the new information, adapt their approach, and keep moving without losing focus. This is what adaptability looks like in its truest form: remaining grounded in purpose while fluid in approach. Trusting your ability to navigate the unknown, adjusting your sails without losing sight of your destination. Because in life, as in operations, the wind will always change. The question is not whether you can control it, it's whether you can move with it.

The same principle applies to us. Life will always throw curveballs, a job loss, a sudden relocation, an unexpected turn in relationships or health. When we cling rigidly to a singular vision of how things should be, we limit our ability to grow and thrive. Adaptability means meeting change not with resistance, but with curiosity and composure. It means learning to pivot, to see new opportunities where others might only see obstacles.

Adaptability, as they prove time and time again, is not a fallback strategy; it is the strategy.

TEAMWORK: THE POWER OF "WE"

"The strength of the wolf is the pack, and the strength of the pack is the wolf."

In the unforgiving crucible of SAT operations, no mission is ever a solo pursuit. Success, and survival depend on a profound level of trust and coordination.

Each commando is a master of their craft, yet no individual skill matters unless it contributes to the mission. This is not just teamwork; it's symbiosis.

The infamous log carry during training is a perfect example of this. A massive log is hoisted onto the shoulders of the team, and together, they must carry, lift and lower it for kilometers across harsh, uneven terrain. It's punishing and relentless, but the lesson is profound: when one falters, the others shift, adapt, and bear the burden until the balance is restored. One person's weakness is absorbed by the others, their strength filling the gap seamlessly. No one escapes the weight, but no one carries it alone. Alone, it's insurmountable. Together, it's just another step forward. This drill is symbolic of the battlefield itself: there is no room for ego, for hesitation, or for pride. A moment of selfishness, a failure to move in rhythm, can fracture the entire operation. It is clear to see that strength is not defined by what you can do alone, but by how you contribute to the collective effort.

Another important mention is the philosophy that no man is ever left behind. In the SAT world, this principle is non-negotiable: when a teammate falters, the team adapts and ensures no one is abandoned, no matter how dire the circumstances. It is a declaration of shared purpose and unbreakable loyalty.

This is a lesson that transcends the battlefield. Whether in business, families, or friendships, no one succeeds in isolation. The lone wolf myth is a dangerous illusion. In reality, it's the strength of the pack that elevates the individual, and the strength of the individual that fortifies the pack. True leaders recognize this dynamic: they pull when others push, they shoulder the load when teammates stumble, and they allow themselves to be supported when needed. Collaboration doesn't just divide the weight; it multiplies the strength.

HUMILITY: HUMBLE PIE

"The ego is the enemy."

For elite warriors like SAT commandos, humility is not about thinking less of themselves but thinking of themselves less. It is understanding the weight of their responsibilities, their role within the team, and the mission that transcends any single individual. Despite their elite status, they cannot afford to let ego creep into their actions, because ego, unchecked, is the chink in the armor that can compromise everything.

Humility is woven into the very fabric of their training. It begins early, where no rank or personal achievement matters. In exercises like boats on head, ego is quite literally crushed under the weight shared equally by all. No one escapes the strain, no one rises above the others, because the boat only moves forward when everyone works as one. And then there are the debriefings after missions. Even the most successful operations are dissected with ruthless honesty. There is no celebration of ego, only lessons learned, an unspoken acknowledgment that perfection does not exist, but improvement is infinite.

This grounded approach to mastery pulls the reins on ego and fosters unwavering trust. Each commando knows their limits and relies deeply on their teammates to fill the gaps.

There's a lesson here for all of us. Success, whether in our careers, relationships, or personal endeavors, often tempts us to believe we've "arrived." But the moment we stop learning, we stop growing. The SAT philosophy reminds us that complacency is the true enemy. To remain humble is to remain open to new perspectives, new lessons, and even new failures that will refine us. When we approach life with humility, we realize something liberating: it's not about us. It's about the team we're part of, the mission we're working toward, and the people we can lift along the way.

Humility doesn't mean denying our achievements or skills. It means acknowledging that no matter how skilled we become, we will always have room to improve. It means recognizing that the greatest leaders are those who elevate others, not themselves. Like the SAT commandos, we must learn to trade ego for purpose and progress.

ACCOUNTABILITY: TRUE GRIT; OWN IT!

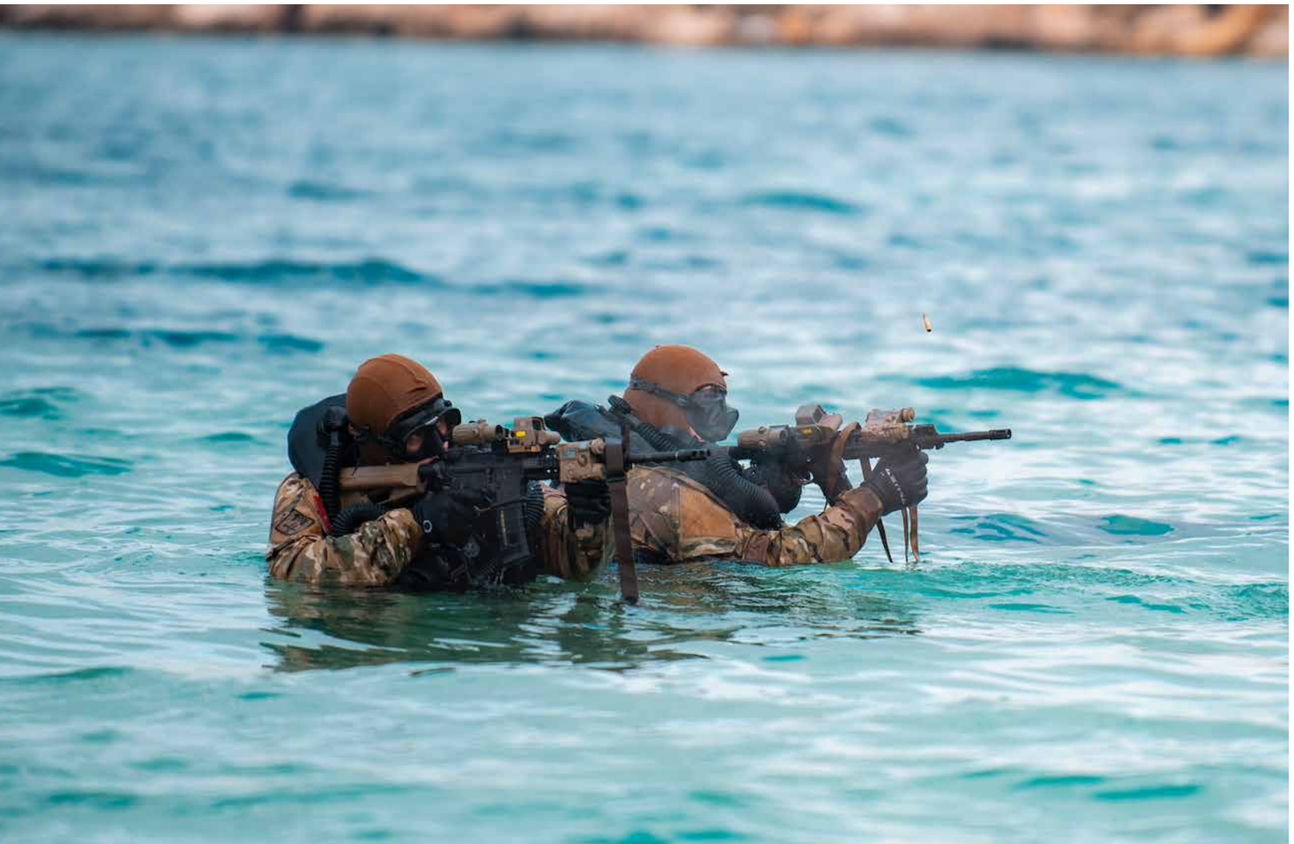
"You are the master of your fate, the captain of your soul."

Accountability is a cornerstone of every SAT operation. In the world of special operations, there is no finger-pointing, no room for excuses, and certainly no passing of blame. Each commando takes full responsibility for their actions, every decision made, every step taken, because lives, missions, and trust depend on it. If something goes wrong, they don't look outward for blame; they look inward for growth.

In training scenarios, this philosophy is drilled into them with unrelenting precision. A single mistake during a live simulation, a misjudged entry, a delayed response could cost the mission. Afterward, accountability takes center stage. Each team member breaks down their actions in exhaustive detail, analyzing what worked, what failed, and how to improve. There is no hiding from mistakes, because to avoid ownership is to remain stagnant.

This mindset is one we can all adopt. In our personal and professional lives, accountability is the bridge between who we are now and who we aspire to become. It is tempting, when life doesn't go as planned, to cast blame on external circumstances; on bad luck, on others, on forces beyond our control. But when we take ownership of our actions and decisions, we reclaim our power.

To be accountable is to face the truth, no matter how uncomfortable it might be. It means recognizing that setbacks are not sentences, they are lessons. It is through this honesty that resilience is born, and respect is earned, not just from others, but from ourselves. Taking ownership does not guarantee perfection; it guarantees growth.



DISCIPLINE: THE SPINE OF SUCCESS

"Discipline is our motto, duty is our love, we shall sacrifice our lives with pride" –SAT Maxim

Discipline is the silent backbone of every SAT commando's success. It is not about sporadic bursts of effort, but the unrelenting commitment to showing up, day after day, no matter how grueling or thankless the task may seem. Whether it's maintaining physical fitness, mental acuity, or emotional resilience, discipline is what turns the seemingly impossible into routine.

The kill house drills during training offer a perfect example. In a confined space, commandos are tasked with neutralizing threats swiftly and with precision. Every move must be deliberate; every decision is a calculated response. A single moment of hesitation or a wasted action can mean failure. The goal of these exercises isn't perfection, it is precision born of repetition. By the time a commando faces real-world missions, discipline has turned these drills into second nature.

In our own lives, we often rely on motivation to keep us moving forward. But motivation is fleeting; it comes and goes like a fair-weather friend. Discipline, however, remains steadfast. It's the quiet voice that pushes you to work when inspiration has abandoned you, the unseen force that keeps you on course when convenience tempts you to veer off track.

SAT commandos don't ask if they feel like doing the work. They do it because discipline has trained them to prioritize action over emotion. This philosophy carries a lesson for all of us: consistency creates lasting success. Whether you're building a career, nurturing relationships, or chasing personal goals, it's not the occasional heroic effort that matters, it's the commitment to show up, rain or shine.

The SAT ethos teaches us that discipline is freedom. It frees us from the chaos of indecision, the weight of procrastination, and the unpredictability of emotional highs and lows. Discipline is the unseen structure behind every victory by choosing action over convenience.

HUMOR: THE SECRET TO SURVIVING CHAOS

"A warrior without humor is a man lost in the fog of war."

Believe it or not, humor is a critical survival tool for SAT Commandos. When faced with relentless pressure, extreme discomfort, and life-threatening situations, humor becomes a psychological weapon as vital as any physical gear they carry. It diffuses tension, fosters camaraderie, and keeps morale high even in the darkest moments. A shared laugh, sometimes at the absurdity of their circumstances, has the power to turn despair into determination.

In moments where their bodies scream in protest and exhaustion threatens to take hold, humor cuts through the pain

and reconnects them to their purpose as a team. It's a reminder that they are human, that beneath the toughness lies an ability to smile through suffering.

In our lives, humor serves a similar role. We often take setbacks too seriously, allowing stress to cloud our judgment and weigh down our spirit. But humor reminds us to breathe, to find perspective, and to lighten the load we carry. It helps us to dismiss the gravity of a situation by finding levity to keep moving forward.

Life, like war, is unpredictable. Plans fail, storms hit, and chaos often reigns. When that happens, humor becomes the bridge between despair and resolve. As SAT commandos know, even when you can't control the situation, you can control how you respond. And sometimes, the best response is to laugh, recalibrate, and press on, because laughter, in its simplest form, is resilience disguised as joy.

So, when life throws its curveballs, find your moment of levity. Laugh at the absurdity, shrug off the weight, and keep marching forward. After all, the storm will pass, but how we weather it will define who we become.

COURAGE COUTURE: THE WARDROBE WE ALL NEED

"Fear is a reaction. Courage is a decision."

There's a world of difference between reckless bravery and calculated courage. Reckless bravery charges headfirst without thought or preparation; calculated courage moves forward with clarity, purpose, and focus. SAT Commandos embody the latter; not as an impulsive act but as a finely honed skill developed through relentless training, preparation, and discipline.

Courage for them begins long before the mission. It's forged in underwater drills that push the limits of their lungs, in parachute jumps that defy natural instincts, and in moments where every second counts. Their courage isn't born from an absence of fear; it comes from mastering it, acknowledging its presence but refusing to let it dictate their actions. The preparation sharpens their decisions under pressure, allowing them to stay composed when chaos takes over.

This is a life lesson we can all carry. Courage is not about being fearless; it's about acting despite the fear. Whether it's standing up for what's right when voices of opposition loom large, taking risks to pursue an uncertain dream, or pushing beyond the limitations we've placed on ourselves, courage is the force that separates stagnation from growth. It transforms adversity into opportunity and doubt into determination. There's a quiet power in acting courageously, especially when the outcome is uncertain. And just like SAT commandos trust in their training, we, too, can prepare ourselves, by building resilience, sharpening our skills, and embracing discomfort as a teacher. When the moment arrives, and the stakes feel insurmountable, we'll realize courage isn't about eliminating fear but carrying it with us as fuel.

LOYALTY: A RELATION–SHIP

"Loyalty binds us stronger than blood."

Loyalty, as displayed by SAT Commandos, is not simply an admirable virtue, it is a bond forged in the fire of shared hardships, where trust becomes a lifeline and unity makes them nearly invincible. This isn't blind allegiance, but rather a cultivated understanding that no one is ever left behind, regardless of the odds. In their world, a mission's success is only possible when each member of the team is disciplined, dependable, and unwavering in their loyalty to both their comrades and their country.

One striking example is the casualty recovery drills; exercises where commandos must evacuate a teammate under simulated combat conditions. With bullets flying and chaos reigning, the rule is simple: leave no one behind. The drill is grueling, requiring strength, coordination, and determination. Even when their bodies beg to stop, the team presses on because the life of their brother depends on it.

Loyalty in this sense is not passive; it's active. Every commando strives to be stronger, sharper, and more resilient, not for individual glory, but because the team depends on them. They understand that their weaknesses could become the team's burden, so they commit to constant growth.

This mindset is not exclusive to special operations; it is a principle we can all embrace. What if we approached our families, communities, and workplaces as shared missions? What if we recognized that loyalty isn't just about showing up but about growing stronger for those who rely on us? Imagine if we each did our part, not out of obligation, but out of love, respect, and trust for the bigger picture. Such an approach offers a meaningful perspective on how strengthening social bonds can enhance solidarity and drive sustainable success.

Loyalty teaches us that we are not islands unto ourselves. The strength of a bond is not measured in words. It is measured in actions; the sacrifices we make, the trust we earn, and the commitment we show to those who stand beside us.

LIVING WITH THE ETHOS OF SAT COMMANDOS

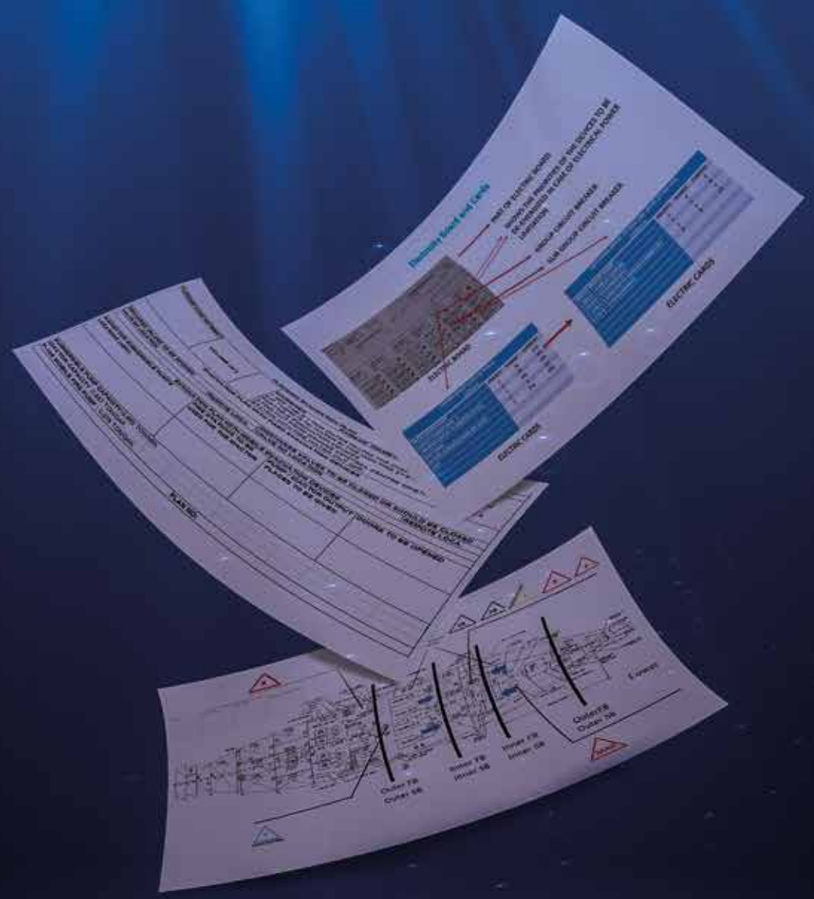
"Every action is a reflection of your purpose." - π

There are countless more lessons we can glean from the ethos of SAT Commandos, but I'll stop before these turns into a self-help marathon. What I want to emphasize is that these aren't just abstract principles. They are real, tangible ways of living that we can adopt, without having to endure the punishing training regimens or life-and-death missions. The SAT Commandos, and all Special Operations Forces around the world, offer us a metaphorical guide to navigating life's complexities. We may not wear their uniforms or bear their ranks, but we can embody their principles. Because in the end, the greatest battles are often fought not on the battlefield, but within ourselves.

To our brave SAT commandos, thank you for your service, for your sacrifice and for being a living example of what it means to push beyond limitations. Your lessons transcend the battlefield and touch us all; you remind us of the power of trust, focus, courage and perseverance. We owe you more than just gratitude; we owe it to ourselves to live by these values, to rise up, face our challenges, and, most importantly, to dedicate ourselves to a purpose that is bigger than ourselves with an unwavering conviction.

Fair Winds, Following Seas....

LIVING DOCUMENTS USED IN WARSHIPS



In chaotic situations such as an explosion, fire, or flooding that may occur on a warship, the "Living Documents" that must be present on board are essential for managing the relevant processes. The survival of the ship largely depends on the proper use of these "Living Documents."

ARTICLE
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On warships, ensuring operations are carried out flawlessly and swiftly requires maintaining the personnel's training levels acquired through individual and team education programs from training institutions. It is also essential to reinforce and sustain the procedures and practices learned during these trainings. Moreover, having the capability to respond accurately to any emergency that might occur at sea or in port during the mission period necessitates the preparation of various documents.

These so-called LIVING DOCUMENTS are indispensable for managing chaotic situations that might arise on a warship, such as explosions, torpedo or guided missile hits, fires, or flooding. They are crucial for navigating such crises effectively. The survival of the ship largely depends on the proper utilization of these LIVING DOCUMENTS.

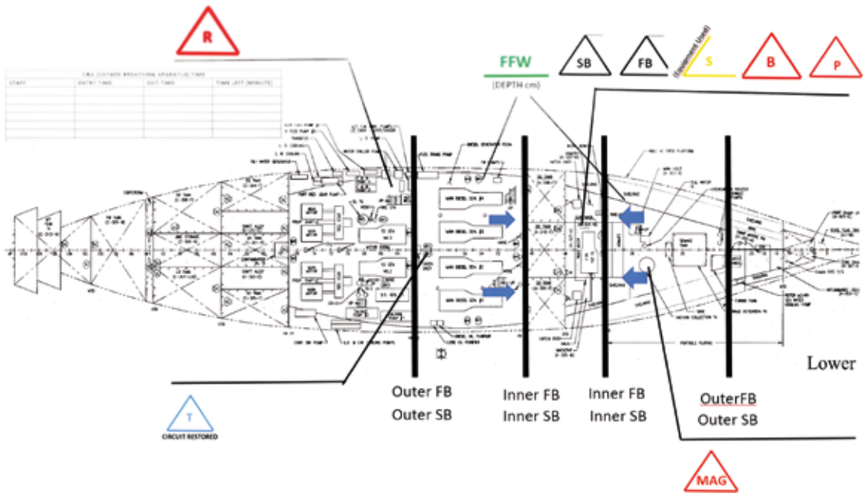
It is believed that explaining the use of LIVING DOCUMENTS through a scenario created below, without delving too deeply into details, will significantly enhance the comprehensibility and importance of the subject. Although more than 50 types of LIVING DOCUMENTS are utilized aboard the ship, the scenario highlights the most commonly used documents during internal warfare situations.

SCENARIO–BASED LIVING DOCUMENTS AND THEIR USAGE

While the ship was carrying out its mission to shadow a hostile warship detected in the X Sea, a loud noise was heard from the bow.

Following the noise from the bow, an announcement was made over the 1MC general announcement circuit, ordering the crew to proceed to battle stations[1]. Alongside the battle stations announcement, the procedures for transitioning the ship to battle readiness commenced automatically, in line with the ship's SYSTEM MARKING[2] protocol, transitioning the vessel into the ZUHAL[3] condition. Simultaneously with the 1MC announcement made after the explosion, the Engineering Watch Officer in the Machinery Control Room issued an order to halt all fans. The crew must transition to their battle stations within a designated time frame (under 3 minutes). Once at their stations, personnel must report their readiness to the relevant centers, and a comprehensive damage assessment must begin immediately.

1 In emergency situations on the ship, such as threats or specific scenarios outlined in the ship's roles, the state in which the entire crew operates at the ship's highest operational level to perform their assigned duties at battle stations is defined as the ship's maximum operational readiness.
2 This document regulates how the ship's doors, hatches, and circuit elements (such as valves, reducers, filters, etc.) are to be utilized during port operations, navigation, combat, and special circumstances (e.g., CBRN warfare).
3 The process of bringing the ship to ZUHAL status involves securing the ship at the highest level of protection by closing all doors, hatches, and passageways, except for those marked with W (typically ventilation circuits).



The damage assessment across the ship is conducted by specialized repair teams, including ship repair units[4], electrical teams, and electronics failure response teams, focusing on their assigned branches or duty stations. Additionally, these teams ensure a thorough inspection of the entire ship.

The Executive Officer's battle station duty is as a Rover, responsible for reporting information gathered from all areas of the ship to the Damage Control Center[5] and the Command and Control Center[6]. The Ship's Commander is stationed at the Command and Control Center located within the Combat Information Center, while the Chief Engineer, along with the ship's engineering officers and relevant personnel, are stationed in the Damage Control Center.

Damage assessment reports are prioritized and sent to the Damage Control Center. All incoming information is recorded on the DAMAGE CONTROL PANELS[7] and ELECTRICAL PANELS[8]. During the damage assessment, it is reported that dense smoke is emanating from the manhole[9] of No.1 Auxiliary Machinery Room located in the forward section of the ship. The watch officer stationed in the No.1 Auxiliary Machinery Room Capsule heard the explosion and immediately activated the Fixed CO_2 System. Although they initiated procedures to inject AFFF[10] into the bilge, they observed the fire spreading into the machinery room as the capsule door was blown off by the blast. Despite attempting to secure the area using the MECHANICAL ISOLATION LIST[11], the officer was unable to close certain valves and reducers indicated on the list. They evacuated the room through the emergency exit but were unable to seal the main entrance due to the flames.

> The shipwide damage assessment in question is carried out by the ship repair parties, electrical teams, and electronic failure teams.

Meanwhile, a petty officer working on a lathe in the ship's workshop, adjacent to the machinery room entrance at the time of the explosion, noticed a fainted enlisted crew member lying in the nearby laundry room, also adjacent to the machinery room. The petty officer quickly moved the laundry room personnel to the upper deck via the stairwell and secured the watertight and smoke-proof hatch. During the aforementioned situation, the status in the Main Engine Room, which is adjacent to Auxiliary Machine Room No. 1, was reported to the Damage Control Center.

In the Damage Control Center, the Chief Engineer issued a mechanical isolation order for the valves and other components located in Auxiliary Machine Room No. 1. The personnel in the Main Engine Room marked the Mechanical Isolation List for Auxiliary Machine Room No. 1 using their PVC-coated Mechanical Isolation List and reported the status to the Damage Control Center. During this process, a vibration signal was detected from No. 1 Gas Turbine at the Main Engine Control Console, located in the same area as the Damage Control Center. As part of emergency procedures,

4 Teams established on warships to respond to incidents such as fires, flooding, and similar emergencies.
5 The center where internal battle operations are managed while the ship is at battle stations
6 The center primarily responsible for managing external warfare, overseen by the Ship Commander
7 These panels are used to monitor the complete damage status of the ship. They are located in the Damage Control Center, Repair Parties, and the Command-and-Control Center. Following an emergency onboard (such as an explosion or flooding), it is critical that all involved centers share the same damage overview to ensure coordinated responses to the incident.
8 These are prepared to manage and maintain the ship's power systems during operations and repairs. They ensure the seamless operation and control of power in designated areas.
9 A passage hatch of a diameter sufficient for a person to pass through.
10 A firefighting agent that, when mixed with water, forms foam to cover fuel fires like a film, effectively extinguishing them.
11 Every compartment or area must have a list of local and remote controls (such as valves, circuit breakers, filter assemblies, etc.) required for isolation. These lists, referred to as Mechanical Isolation Lists, must be available in each compartment for quick access.

the Main Engine Control Console operator immediately reported the situation and initiated actions to bring No. 2 Gas Turbine online. Approximately 45 seconds later, No. 1 Gas Turbine was taken offline. In response to the situation, the maximum achievable speed and the new configuration were reported to the Command and Control Center by the Chief Engineer.

Following the safe shutdown of the affected machinery, the Main Engine Control Console operator opened the MACHINE OPERATION DAMAGE CONTROL DOCUMENT[12] and began completing the required actions. Concurrently, the personnel in the Main Engine Room initiated their own checks and operations as outlined in the Machine Operation Damage Control Document to ensure all procedures were completed.

Within 8 minutes, the Damage Control Center and repair parties on the ship have equipped themselves with all necessary tools and equipment. In the Damage Control Center, the Damage Control Officer is updating the DAMAGE CONTROL BOARD using a plotter with the information received. Reports concerning power systems are forwarded to the Electrical Officer.

The Electrical Officer relays this information to the Senior Electrical Petty Officer responsible for the ELECTRICAL PANEL. The Senior Electrical Petty Officer then records the incoming data on the ELECTRICAL PANEL. Meanwhile, the Petty Officer assigned to the No.1 Auxiliary Machinery Compartment arrives at the Damage Control Center and provides the Damage Control Officer with detailed information about the fire's location, size, and type.

The No.1 Auxiliary Machinery Compartment falls under the responsibility of the Chief Repair Party. The Damage Control Officer, upon receiving information, ordered it to be relayed to the Chief Repair Party. Immediately after identifying the fire zone, the Damage Control Officer announced the fire and smoke boundaries throughout the ship via the 1MC general announcement system and updated the DAMAGE CONTROL BOARD accordingly.

The Petty Officer assigned to the No.1 Auxiliary Machinery Compartment handed over the MECHANICAL ISOLATION LIST in their possession to the Chief Repair Party (CRP) commander. Subsequently, the CRP commander gave the MECHANICAL ISOLATION LIST to the CRP Scene Leader. The Scene Leader promptly instructed the scouts to carry

> In the Damage Control Center, the Damage Control Officer records the incoming information on the Damage Control Board using a plotter.

MECHANICAL ISOLATION LIST

COMPARTMENT NAME	FAN NAME TO BE TURNED OFF	CONTROLLER LOCATION	REMOTE LOCATION	FLAPS NO	FLAPS LOCATION	NOTE

INFORMATION ON VALVES/EQUIPMENT TO BE CLOSED/OPENED						ACTION TO BE TAKEN/RESPONSIBLE		
ITEM	COMPARTMENT NAME/NO	VALVE LOCATION	TYPE	SYSTEM	FUNCTION	NORMAL POSITION	MACHINERY CONTROL	COMP. ISOLATION ATTENDANT

12 It is a document prepared for the main propulsion systems and diesel generators on the ship, detailing specific procedures for addressing malfunctions in the relevant machinery. It is organized separately for each individual currently on duty.

out the mechanical isolation for the No.1 Auxiliary Machinery Compartment. The scouts, equipped with smoke masks and full gear, began the mechanical isolation process swiftly using the MECHANICAL ISOLATION LIST specific to the No.1 Auxiliary Machinery Compartment.

The CRP Commander reports the OBA[13] (Self-Contained Breathing Apparatus) usage times of the scouts wearing smoke masks to the Damage Control Center and ensures that these times are recorded both on their own DAMAGE CONTROL BOARD and on the DAMAGE CONTROL BOARD at the Damage Control Center. The fire is located in the No.1 Auxiliary Machinery Compartment. Therefore, the Damage Control Officer immediately reviews the COMPARTMENT FIRE DOCTRINE[14], inspecting all access points and intervention locations. Unfortunately, the No.1 Auxiliary Machinery Compartment is not equipped with a comprehensive FM-200 fixed extinguishing system for the entire compartment. However, foam from the No.1 AFFF station has been deployed into the bilge. The Scene Leader is reporting temperatures from around the compartment to the Damage Control Center via the bulkhead.

Meanwhile, the CRP Attack Team Leader inspects the two fire hose teams preparing to enter the fire area. The Damage Control Officer issues orders to the CRP Commander in accordance with the COMPARTMENT FIRE DOCTRINE and directs the Stern Repair Party (SRP) to prepare backup fire response teams. Cooling operations continue from all sides of the No.1 Auxiliary Machinery Compartment, with all cooling actions marked on the DAMAGE CONTROL BOARDS.

While the ship is in combat stations conducting a pursuit mission in the X Sea, the Commanding Officer's priority is announced by the Chief Engineer to the Damage Control Center. Following the Commanding Officer's declaration that the priority is to continue tracking the identified enemy warship, the Chief Engineer requests the electrical isolation of Auxiliary Engine Room No. 1.

The ship initiates the isolation procedures based on the ELECTRICAL ISOLATION LIST[15]. However, the thought of being unable to isolate the Sonar Dome power circuits in Auxiliary Engine Room No. 1, which houses all electrical circuits supplying the Sonar Dome, crosses the mind of the Commanding Officer, causing a momentary chill—especially if the priority had been an attack on a submarine. Meanwhile, the ship's main gyro's electrical supply has been compromised. The Lead Electrical Team proceeds with pulling an emergency power cable from the No. 3 Distribution Panel to the main gyro, as per the EMERGENCY POWER PLAN[16].

Additionally, while the Electrical Teams were engaged in electrical isolation operations, one of the ship's three diesel generators became inoperable due to the explosion. The other two generators remained in parallel operation, and the ship's total load was at 46%.

Meanwhile, a lubrication oil loss signal was received from Auxiliary Machine No.2. Upon reporting the situation to the Chief Engineer, the Machinery Control Console Operator initiated emergency actions and simultaneously informed the Electrical Officer. The Electrical Officer immediately ordered the disconnection of secondary and tertiary priority loads (load shedding), reducing the ship's load to 28%.

Following the MACHINERY OPERATION DAMAGE CONTROL DOCUMENT, the Machinery Control Console Operator and the compartment personnel began operations. Luckily, they quickly identified the fault and restored the system in a short time. The ship resumed operations powered by two diesel generators.

The initial attempt to extinguish the fire in Auxiliary Machine Room No.1 was unsuccessful. For the second intervention, the Ship's Damage Control Officer gathered both Repair Teams (TP personnel) in the mess hall and reviewed the situation based on the SHIP COMPARTMENT FIRE DOCTRINE. The Damage Control Officer detailed the plan to both teams and concluded the briefing with a loud, motivational speech designed to uplift all personnel (a technique explicitly outlined in the doctrine to ensure psychological effectiveness).

The second intervention focused on utilizing the emergency exit located on Deck 1. Backup intervention teams were fully equipped and on standby. To prevent a backdraft or explosion caused by the introduction of oxygen when opening the hatch to the unburned gases in the compartment, procedures specified in the SHIP COMPARTMENT FIRE DOCTRINE were meticulously followed. The water curtain team performed commendably, containing the fire under the guidance of the Assault Team Leader. However, due to the OBA timing constraints, tracked and logged on the Damage Control Board, the backup intervention team took over. Approximately nine minutes later, the backup team brought the fire under control and successfully extinguished it within 12 minutes.

Due to OBA timing constraints, the fire response teams that vacated the fire zone stood by, equipped with replacement cylinders, awaiting further orders. All developments were reported to the Command and Control Center and recorded on all relevant boards. Following the successful extinguishing of the fire by the repair party personnel, smoke extraction operations commenced.

FLOODING EVACUATION PLAN

FLOODED COMPARTMENT			DAMAGE DIAMETER (INCH/CM)
	VOLUME (M^3)		WARNINGS 1.SEE TABLE 1 FOR WATER FILLING THE COMPARTMENT. 2.IF THERE IS NO WATER IN THE MAIN FIRE SYSTEM, EVACUATE WITH PORTABLE EVACUATION DEVICES 3.FIND OUT FROM DAMAGE CONTROL CENTRE WHETHER YOU ARE A STATION WITH FIRE WATER CUT OFF.

EVACUATION PLAN WITH FIXED EVACUATION DEVICES

DISCHARGE VALVES TO BE OPENED		DISCHARGE VALVES TO BE CLOSED OR SHOULD BE CLOSED	
VALVE NO LOCATION	REMOTE LOCA.	VALVE NO LOCATION	REMOTE LOCA.

EVACUATION PLAN WITH MOBILE EVACUATION DEVICES

SOCKET FOR SUBMERSIBLE PUMPS LOCATIONS (440V)	FIRE STATIONS TO BE USED FOR THE IDACTOR	PUMP / IDACTOR OUTPUT PLACES TO BE GIVEN	DOORS TO BE OPENED

SUBMERSIBLE PUMP CAPACITY: 0.952 TON/MIN.
IDACTOR CAPACITY :0.687 TON/DAK.
P-100 MOBILE FIRE PUMP : 0.378 TON/DAK.

PLAN NO:

13 The OBA time refers to the moment personnel begin using their smoke masks and rely on a canister or cylinder to breathe clean air. For personnel whose OBA time has started, the duration is considered to be 15 minutes (with a total completion time of 20 minutes). After 15 minutes, an order must be issued to evacuate the personnel from the smoke-filled area.

14 It is a document structured to provide a basis for appropriate decisions and actions in the event of an engine room fire or a major oil/fuel leak.

15 Each compartment must have a list of local and remote controls (such as circuit breakers, switchgear groups, etc.) designated for area isolation. These lists are referred to as Electrical Isolation Lists, and a copy of them must be available in each compartment.

16 The emergency power system provides temporary power connections if the ship's permanent service and emergency distribution cables are damaged. However, it does not supply power to all electrical equipment on the ship. It is limited to the capabilities necessary to keep the ship operational and enable it to exit a hazardous area. In such situations, this document regulates the operation of the emergency power cables to be laid to the relevant system and equipment, as well as their stations (e.g., Gyro and Steering System).

The existing SMOKE EVACUATION PLAN[17] was reviewed by the Damage Control Officer and the Scene Leader, and the course of action was determined. The initial plan, which involved activating fans in the adjacent compartment to sweep out the smoke, proved unsuccessful.

In response, the Damage Control Officer and the Scene Leader reconvened and decided to deploy two ram fans[18] on the starboard side, taking advantage of the wind direction. Approximately 20 minutes later, measurements conducted with an explosimeter[19] confirmed the absence of explosive gases and the presence of sufficient oxygen levels, which was announced shipwide via the 1MC general announcement system.

During the damage assessment, it was determined that the Starboard Fin Stabilizer System and No.1 and No.2 Main Fire Pumps located in Auxiliary Machine Room No.1 were rendered inoperable. A single watch personnel was assigned to remain at the fire scene, and the compartment was vacated.

Approximately 35 minutes later, the sentry left in the area hears a sound in the bilge. Upon inspection, they discover that the noise originates from the body of the Nu1 kingston valve, which had not been replaced during the previous overhaul maintenance. Upon physically checking the valve, it dislodges like a projectile, causing water ingress into the ship.

Due to the failure of both the SP circuits and the ship's telephone system in the fire zone, the sentry runs to the Damage Control Center to report the situation. The ship is then put back into battle stations via the 1MC general announcement circuit. The Chief Repair Team personnel, fully equipped in record time, prepare to intervene in the damage.

Meanwhile, the Damage Control Officer calculated the amount of water entering the ship based on the size of the breach and its depth from the waterline. Following the WATER DISCHARGE PLAN[20], they determined that the incoming water could be managed using the ejector circuit in the main engine compartment and one submersible pump. After issuing the necessary orders, the Chief Repair Team's damage intervention unit quickly plugged the breach, effectively stopping the water ingress.

17 This is the Ventilation Plan, which outlines the ventilation capabilities for each compartment, including the status of fixed fan systems, natural ventilation options, and compartment-specific access points. This plan is critical for ensuring safety and operational effectiveness.
18 The Ram Fan is a water-powered suction fan. It is specifically used in situations where the amount of explosive gases in the atmosphere is unknown, making a water-powered system essential for safety. The term "Ram Fan" originates from the name of the company, RAM, which developed this type of fan.
19 It is a device used to detect the presence of toxic and explosive gases that may occur after a fire.
20 It is the drainage plan that maximizes the ship's watertight integrity when damage occurs below the main deck. This plan outlines the drainage capabilities of the damaged compartment (mobile and fixed drainage systems and equipment, relevant valves, etc.) and indicates all passages and valves that need to be closed.

CHINA'S SPIDER WEB IN THE MEDITERRANEAN

STRATEGIC MOVES FROM HAIFA AND PIRAEUS TO SUEZ

Recent geopolitical transformations – uncertainties in global supply chains, fluctuations in energy prices and the sharpening of competition between great powers – have fuelled interest in the Eastern Mediterranean more than ever before. If we take a look at some of the remarkable developments in this region, especially China's investments in the ports of Haifa (Israel) and Piraeus (Greece) re-emphasise the economic and strategic importance of the Mediterranean basin.

REVIEW
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Firstly, I would like to draw your attention to the Haifa Port. China's infrastructure and digital modernisation projects are boosting regional trade and triggering US' security' concerns in this port, which is the most important gateway for Israel's high-tech and defence products to global markets. On the other hand, the Port of Piraeus is a commercial stepping stone for Greece to the European Union's domestic market. While the improvements carried out here under the leadership of China's COSCO are rapidly increasing the container volume of the port, they are also fuelling debates in the EU over concerns of 'foreign ownership of critical infrastructure'.

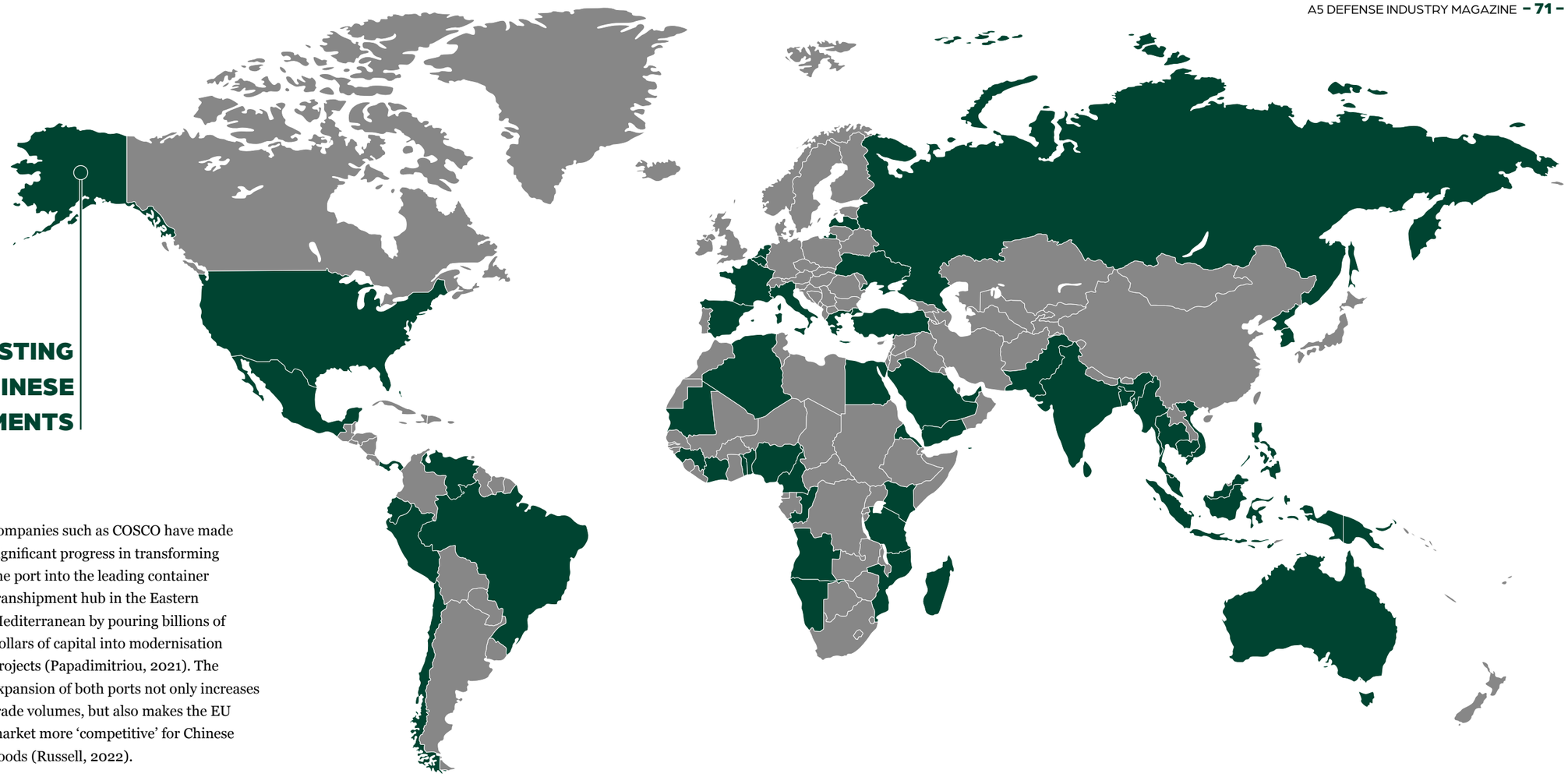
The Suez Canal is at the centre of this picture. This 'bottleneck', which provides approximately 50 ships and 14 million dollars of revenue per day, is considered to be the heart of Europe-Asia trade. Any blockage or crisis in the canal could disrupt global maritime routes and have a direct bearing on China's multifaceted investment moves in Mediterranean ports. The Beijing administration is trying to make its influence in the region permanent by following a 'backup route' strategy against possible disruptions in this critical corridor.

As the competition between regional and global powers intensifies, every decision to be taken in the ports of Haifa and Piraeus and the Suez Canal creates a domino effect, with geopolitical consequences that extend beyond the Mediterranean. Therefore, understanding the dynamics behind the operational rights, infrastructure investments and strategic planning of these ports is critical for all actors seeking to secure global balances, energy transmission lines and international trade. In short, the Eastern Mediterranean has become a strategic stage on which not only the countries of the region but also the great powers of the world determine their chess moves.

1. SPIDER WEB METAPHOR: MULTILAYERED CONNECTIONS

When we analyse a spider's web, we see that each knot is connected to the others by thin threads, and the vibration at any point of the web affects the entire structure. The ports of Haifa and Piraeus can be considered as such a 'web knot' in the middle of the Mediterranean. This is because these two ports are not only part of China's global supply chain; they are also strategic centres where economic, political and military influences converge in a vast geography covering the European Union (EU), the Middle East and North Africa (Chen & Dağlı, 2023; Howell, 2021).

The threads at the edge of the network represent critical sea gateways such as the Suez Canal, Western security alliances (e.g. NATO) and the national interests of the countries in the region. Beijing has chosen the ports of Haifa and Piraeus as 'front nodes' to be included in this network and to weave its own threads towards its centre (Russell, 2022). However, each of these nodes depends on many factors that vibrate in different directions and at different speeds: US power projection in the region, EU infrastructure policies, strategic preferences of Israel and Greece, Egyptian control over the Suez Canal, Russian presence in the Eastern Mediterranean, and many more (Kershner, 2021).



COUNTRIES HOSTING MAJOR CHINESE PORT INVESTMENTS

The way to understand this complex web is to follow the threads in the spider's web one by one, to scrutinise which vibration is felt at which node and how this vibration affects other nodes. In this context, the rising trade volume of Haifa and Piraeus ports, economic development indicators, security dimension and direct/indirect relations with the Suez Canal are the most critical sources of vibration that create fluctuations in the whole network (IPA, 2022; Eurostat, 2022).

2. HAIFA AND PIRAEUS: NODES AT THE CENTRE OF THE NETWORK

The Port of Haifa has reinforced its strategic importance in the spider web, reaching a capacity of approximately 29 million tonnes of cargo and 1.2 million TEU containers in 2022 (IPA, 2022). The port is one of the most important gateways through which Israel's diverse exports, such as high-tech, defence and agricultural products, open to the world (Kershner, 2021). Moreover, China's investments in infrastructure modernisation and moves to digitalise container terminals here can be read as steps to strengthen connections with the next nodes of the network (COSCO, 2023).

Similarly, the Port of Piraeus is Greece's largest sea gateway with an annual container throughput of over 5.3 million TEUs (Eurostat, 2022). Chinese companies such as COSCO have made significant progress in transforming the port into the leading container transhipment hub in the Eastern Mediterranean by pouring billions of dollars of capital into modernisation projects (Papadimitriou, 2021). The expansion of both ports not only increases trade volumes, but also makes the EU market more 'competitive' for Chinese goods (Russell, 2022).

Looking at the economic data, it is estimated that the Port of Piraeus has an average daily revenue stream (demurrage, container handling, transit fees, etc.) of $2.5 million, while the Port of Haifa earns up to $1.8 million per day through similar items (Papadimitriou, 2021; IPA, 2022). While these figures show the contribution of ports to the local economy and employment, they also hint at the economic benefits shared across the wider geography of the network. However, these gains also bring with them debates on 'critical infrastructure control' and 'the security dimension of foreign investment' (Russell, 2022).

3. THE SUEZ CANAL AND THE THREADS CONNECTING THE NETWORK

Another major node in the spider web is the Suez Canal. With an average of 50 ships passing through on a daily basis and hosting around 20,000 ships per year, the canal's daily revenue is reported to exceed $14 million (SCA, 2023). This figure clearly shows that a significant portion of the trade between Asia and Europe flows through Suez (Howell, 2021). A blockage of the canal would cause a major vibration in the entire spider web, as not only China but also many actors from Europe, Africa and the Middle East conduct vital trade and energy transfers through this route (Zhang, 2022).

China's unwillingness to remain so dependent on a 'bottleneck' transit point such as the Suez Canal is one of the main motivations driving it to invest in numerous port projects in the Mediterranean (Chen & Dağlı, 2023). As a matter of fact, the blockage of the canal by the ship 'Ever Given' in 2021 revealed that trade worth up to $9 billion per day was disrupted, prompting the Beijing administration to reconsider its 'multiple ports and corridors' strategy (Russell, 2022).

In this framework, diplomatic and economic relations with Egypt, logistics bases established in ports along the Red Sea coast and investments in centres such as Haifa-Piraeus in the Mediterranean are aimed at distributing the risks associated with the Suez Canal for China (COSCO, 2023). Using the analogy of a spider's web, if one thread of the canal starts to break, China aims to have a 'backup link' system that can maintain the flow of trade by utilising other threads.

4. COMPLEX VIBRATIONS: US, EU AND REGIONAL ACTORS

Each vibration in the spider web mobilises different players at different levels. As Israel's most important strategic partner, the US is uncomfortable with the presence of Chinese companies in the Haifa Port (Kershner, 2021). This is due to concerns about intelligence activities that could be conducted through the port's infrastructure or the narrowing of the US Navy's freedom of movement in the region (Russell, 2022). This tension forces Israel to strike a careful balance between 'economic gain' and 'security and alliance commitment' (Chen & Dağlı, 2023).

On the EU front, the 'critical infrastructure' debate over the Piraeus Port has risen. Greece saw Chinese investment as a 'saviour' during the deep economic crisis (2009-2018), but concerns have been raised about its long-term consequences (Papadimitriou, 2021). The fact that Chinese companies will control port operations for decades raises the issue of 'strategic dependence' within the EU (Eurostat, 2022).

Russia's naval presence in the Eastern Mediterranean and its military bases in Syria are another factor that amplifies vibrations in the network (Howell, 2021). Large-scale naval exercises in the Mediterranean, energy competition (especially natural gas projects) and struggles for geopolitical influence sometimes facilitate and sometimes complicate China's movement in the network (Russell, 2022). Therefore, China continues to seek balance in the network as a whole by building diplomatic, economic and sometimes defence cooperation with each actor at different levels. Even if the local changes in the Syrian part are at the point of changing some situations regionally, alternative routes are the biggest reason for the establishment of this spider web. This is the spider web strategy.

5. SPIDER WEB STRATEGY: MANAGING COMPLEX CONNECTIONS

When building its web, a spider engages threads of different thicknesses and in different directions. This strategy increases the resilience and sustainability of the web.

China's 'multi-port and corridor strategy' in the Mediterranean coincides with this logic (Zhang, 2022). Investing in Haifa, Piraeus and other Mediterranean ports, spreading the risk of the Suez Canal, reaching the African market via the Red Sea, exploring the alternative between Asia and Europe via Arctic routes... Although all these moves may seem independent of each other, they are essentially different threads serving the same network (Chen & The Economic, 2023).

The economic data point to the success of this strategy. With the increase in efficiency created by COSCO at the Port of Piraeus, the time for Chinese goods to reach the EU domestic market has shortened by 7-10 days (COSCO, 2023). Similarly, the 15 per cent increase in exports of high-tech and defence industry products through the Port of Haifa (IPA, 2022) means that Israel is becoming more competitive in the global supply chain (Kershner, 2021). However, the strengthening of the network also creates a 'domino effect' that pushes other major players to new strategic manoeuvres (Russell, 2022).

While the EU is focusing on modernising its own port infrastructure through initiatives such as the 'European Ports Innovation Programme', the US is trying to reweave the network through 'military threads' through security agreements and naval exercises in the region (Howell, 2021). Israel and Greece, on the other hand, seek to maximise the competition between China, the EU and the US to maximise economic and geostrategic benefits (Papadimitriou, 2021). Just as a spider moves to the centre of a web and watches the different vibrations to identify where there is prey and where there is risk, countries in the region strive to balance 'opportunity' and 'threat'.

CONCLUSION FUTURE OF THE NETWORK AND PREDICTIONS

Reading Chinese investments in the ports of Haifa and Piraeus, the weight of the Suez Canal in global trade, and the great power rivalry in the Mediterranean through the metaphor of a 'spider's web' provides a clearer understanding of the multi-layered interactions in the region. Each port, each country and each alliance is connected by threads that have a different degree of influence within the web but necessarily intersect with each other (Zhang, 2022). A small tension at one point can turn into a major tremor in the far corners of the network (Russell, 2022).

In the coming period, the direction in which this network will evolve will largely depend on how actors manage the threads. While China seeks to consolidate its presence in the network through a 'multi-port strategy' and alternative logistics corridors, the US and the EU may cite security concerns, especially 'critical infrastructure'. Israel, Greece and other regional countries will continue to walk a fine line between economic gains and strategic balances (Howell, 2021; Chen & Dağlı, 2023).

As a result, the Mediterranean is no longer just a trade route, but also a gigantic network in which global powers compete with each other and regional actors manoeuvre complexly in the face of opportunities and threats (Papadimitriou, 2021). The weaving and vibrating processes of this web will significantly affect the future international relations and security architecture. Therefore, understanding the 'spider web strategy' is a critical requirement for any actor seeking to anticipate contemporary geopolitical upheavals and develop appropriate policies (Zhang, 2022).

Sources
Chen, M., & Dağlı, H. (2023). China's Maritime Ambitions in the Eastern Mediterranean. Istanbul: Global Policy Press.
COSCO. (2023). Annual Report & Investor Relations. Beijing: COSCO Shipping.
Eurostat. (2022). Port Activity Statistics in the EU. Brussels: European Commission.
Howell, J. (2021). Maritime Networks and the Belt and Road Initiative. New York: BlueOcean Press.
Israeli Port Authority [IPA]. (2022). Annual Maritime Statistics for Haifa. Haifa: IPA Publications.
Kershner, I. (2021). "Haifa and the Balance of Power in the Levant." Journal of Contemporary Security Studies, 18(3), 210-228.
Papadimitriou, G. (2021). "Greek Economic Recovery and the Strategic Significance of Piraeus Port." Mediterranean Economic Review, 11(2), 56-71.
Russell, M. (2022). China in the Mediterranean: Security Implications for Europe and the US. Brussels: Atlantic Policy Centre.
Suez Canal Authority [SCA]. (2023). Suez Canal Statistical Yearbook. Ismailia: SCA Publications.
Zhang, Y. (2022). Belt and Road Strategy in the Mediterranean: Ports, Partnerships, and Politics. Beijing: SinoGlobal Press.

COOPERATION IN DEFENSE
ARGENTINA – TÜRKİYE

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Cooperation between two countries in the military realm is influenced by factors such as mutual trust, geographical proximity, shared strategic interests, and the international context (Waltz, 1979). In the case of Argentina and Türkiye, despite the geographical distance, the defense relationship responds to specific interests in technology, training, and regional security.

THE CROSSROADS OF THE WORLD AT THE BEGINNING OF THE 21ST CENTURY

The underlying global and regional context traverses times of change: transitional for some observers and interregnum for others. The former indicates a shift towards a multipolar world with varying levels concerning the balance of power, while the latter refers to a sharp indeterminacy. One way to summarize what we observe can be described in three traits: competition, tensions, and conflicts of all kinds.

Likewise, during the year 2023, defense spending was higher than any other year, exceeding USD 2.2 trillion, which also represented a 9% increase globally compared to spending in 2022. This analysis shows the coexistence of various issues that mutually reinforce each other. The increase in global defense spending indicates the defensive reaction of many states in response to a complex international scenario with clear signs of exhaustion: on one hand, there is a need to safeguard non-renewable resources, strategic resources, rare earth elements, and to protect maritime, aerial, and terrestrial spaces. On the other hand, the rise in global defense spending is associated with manifestations of violence in various forms and intensities projected both in ongoing internal and international armed conflicts.

The novelty is not only the reemergence of interstate armed conflicts but also the so-called "internationalized internal conflicts"; that is, armed conflicts that extend beyond the state where they originated and whose "internationalization," in many cases, is the result of the involvement of third parties in the dispute, both state and non-state actors, resulting in forced migrations and refugee flows. direct impact on the lives of the populations directly involved. (SIPRI, 2023; DW News, 2023).

In Latin America, particularly in South America, defense cooperation is oriented towards regional security and the fight against common threats, such as organized crime and drug trafficking. Therefore, we can say that Latin America is a zone of peace. In this regard, Latin America exhibits peculiar traits that distinguish it from other regions of the world, such as the Middle East, where military alliances are deeply influenced by geopolitical tensions (Caramani, 2020).

The demonstrated willingness to resolve conflicts peacefully, whether through diplomatic, political, or legal means, is one of the significant traits that reflect a region that, despite its glaring issues of violence, does not present interstate armed conflicts.

> The strength of the Turkish defense industry presents several opportunities for Argentina, which seeks to modernize its own defense industrial complex.

Latin America is a region without claims for national self-determination, despite the presence of various significant ethnic communities. It is a region that has historically called for respect for the principle of non-intervention in matters exclusively within the internal jurisdiction of states (Hirst, 2020; Redalyc, 2021).

Furthermore, the countries have demonstrated a willingness to associate by creating and joining various institutions

from the time of independence to the present day. Latin America is a region rich in natural resources, both renewable and non-renewable. It has enormous reserves of oil, gas, lithium, and freshwater. It is a region with significant capacity for food production. Demographically, it constitutes 8.9% of the world's population. Despite its powerful assets, it is the most unequal region in terms of wealth distribution, which contrasts with its colossal heritage and translates into the need to achieve development while safeguarding what it possesses in light of the evaluation, we can make of the dynamics of the world today. This entire context makes the partnership between Argentina and Türkiye relevant, as both countries are interested in diversifying their international relations (Hirst, 2020).

THE DEFENSE APPROACH IN THE REPUBLIC OF ARGENTINA

A brief analysis of the defense doctrine in the Republic of Argentina reveals that defense policy is regulated through three laws characteristic of a democracy: (1) National Defense Law No. 23,554 of 1988, which establishes that the Armed Forces to deter or repress external aggressions against sovereignty, territorial integrity, (2) political independence, the life and freedom of the country's inhabitants; Intelligence Law No. 25,520 which establishes the legal, organic, and functional bases of the National Intelligence System, and (3) Internal Security Law No. 24,059 which establishes the legal, organic, and functional bases for the planning, coordination, control, and support of the national police effort aimed at ensuring internal security. These laws regulate and specify what the Armed Forces can and cannot do. That is, according to the Defense Law, the Argentine Armed Forces respond to situations of attacks or military aggression by external state actors. One of the subsidiary missions of the Armed Forces is to collaborate with the internal security system, but without employing means or intelligence.

Moreover, both the doctrine and the training of the Armed Forces differ from those of the Internal Security Forces. Thus, combating drug trafficking or organized crime, such as the so-called transnational threats, requires different training, intelligence information, and modes of operation. It is important to clarify this issue since not all countries, even within Latin America, operate in a similar manner. Therefore, it represents a development in a different context than that for which the Argentine Armed Forces are trained. Hence, the strategic positioning of the Republic of Argentina is defensive, cooperative, and autonomous. This is established by the National Defense Policy Directive (DPDN), which indicates that Argentine defense policy is based on the concept of "legitimate defense." Its objective is to repel external military aggressions and safeguard the sovereignty, independence, territorial integrity, and the life and freedom of the country's inhabitants, as well as the primary mission and five subsidiary functions of our Armed Forces (Ministry of Defense, 2022).

Since the Malvinas War in 1982, the issue of the Islands has been a central and priority axis of Argentine foreign policy, not only in terms of territorial sovereignty but also from a strategic dimension due to its geopolitical location in the South Atlantic with numerous potential resources such as oil, gas, and fishery resources. The presence of an extra regional power like the United Kingdom in the South Atlantic represents a factor of threat and tension not only for Argentina but for the rest of the region. However, Türkiye's role in regional diplomacy and how its relationship with Argentina could influence international perceptions of Malvinas sovereignty. This would also open an analysis of bilateral relations in the context of other strategic alliances that both countries may have.

HISTORICAL BACKGROUND ON BILATERAL COOPERATION

The initial diplomatic relations between Argentina and Türkiye formally began in 1910 with the establishment of the first diplomatic ties. Throughout the 20th century, the focus was primarily on trade and culture, with limited presence in the defense sector (Embassy of Argentina in Türkiye, 2022).

A scientific and technological cooperation agreement was signed on April 4, 1995, in Buenos Aires, Argentina.

A framework agreement for scientific and technological cooperation between the Defense Industries Research and Development Institute (SAGE) of Türkiye and the Scientific and Technical Research Institute of the Armed Forces (CITEFA) of Argentina was signed on December 28, 1995, in Ankara, Türkiye.

Interest in defense collaboration intensified in recent decades. During the 2000s, both countries participated in multilateral forums such as the United Nations, where they explored areas of mutual interest. In 2011, a memorandum of understanding was signed to strengthen information exchange and military training (Ministry of Foreign Affairs and Worship, 2011).

RECENT BILATERAL AGREEMENTS

Creation of a strategic alliance between Argentina and Türkiye: formalized at the G20 Summit in Buenos Aires in December 2018, where Mauricio Macri and Recep Tayyip Erdoğan agreed to deepen relations between both countries. This agreement focused specifically on trade and technological exchange (Atalayar, 2020).

In 2023, a meeting took place between representatives of Turkish Aerospace and then-Argentinian Defense Minister Jorge Taiana to agree on guidelines for defense industry cooperation (Ministry of Defense of Argentina, 2023).

The signing of agreements such as the "Defense Technology Cooperation Program" has allowed progress in key areas. This program includes joint projects in the manufacture of armored vehicles and air defense systems (Savunma Sanayi ST, 2023).

Military Technology: Argentina has shown interest in acquiring drones and radar systems developed by Türkiye. Meanwhile, Türkiye values Argentina 's experience in the aerospace industry (Türkiye Teknoloji Takımı Vakfı, 2023).

Strategic information exchange: Communication channels have been established to share data on common threats, such as terrorism and drug trafficking.

OPPORTUNITIES AND POTENTIAL AREAS OF COOPERATION

It is convenient to note Argentina's latent need to achieve economic development, protect its spaces and modernize its military instrument. Hence, cooperation with Türkiye has great potential for collaboration in the modernization and joint production of defense equipment.

Türkiye has over the past two decades developed a powerful defense industry that not only emphasized its self-sufficiency, but has also begun to export weapons and military technologies globally. This evolution is due to a combination of factors that include state investment in research, a strategic focus on technological innovation, as well as the imperative need to strengthen its national defense in a complex geopolitical environment. (Military News, 2023).

Furthermore, the Turkish defense industry covers a wide range of products, such as missiles, unmanned aerial vehicles (drones), air defense systems, and submarine technology, among others. This technological advance has been reflected in Türkiye 's ability to compete in the international arms market, where it is positioned as the 14th largest exporter of military products in the world, with plans to reach 80% self-sufficiency in production by 2025. (Defence Industry Europe, 2023).

In summary, the strength of the Turkish defense industry presents several opportunities for Argentina, which seeks to modernize its own defense industrial complex.

Below are some of the main benefits that confirm that defense cooperation between Argentina and Türkiye can be a catalyst for the modernization and strengthening of technological and industrial capabilities in Argentina:

Technology Cooperation: Argentina can take advantage of Turkish experience in military technology development, especially in areas such as unmanned aerial vehicles and space communications systems. The Turkish Aerospace Industries (TAI) company has shown interest in collaborating with Argentina, which could translate into advanced technology and the creation of jobs in the country. (Defense Here, 2023; Politics Today, 2023).

Modernization of Armed Forces: Defense cooperation could facilitate the modernization of the Argentine Armed Forces. This modernization is necessary to meet the growing demands for internal and regional security, in addition to addressing specific needs in areas such as artillery and armored vehicles. (Middle East Institute, 2022; Díaz, 20229.

Industrial Clusters: Industrial clusters that could integrate local productivity with Turkish technology, facilitating the production and modernization of vehicles and defense systems. These clusters could operate in existing facilities in Argentina, such as those at the Morón Military Air Base or the Boulogne Arsenal. (PITAM, 2022).

Satellite Projects: Argentina has experience in satellite manufacturing through INVAP. Cooperation with TAI could not only improve local space technology, but also open markets for the Argentine space industry internationally. (Politics Today, 2023).

Likewise, Türkiye 's interest in establishing ties in the Argentine military sector should be explored, with emphasis on industrial collaboration for technology transfer and shared projects, as in the case of the modernization of armored vehicles. (Middle East Institute, 2022).

CONCLUDING REMARKS

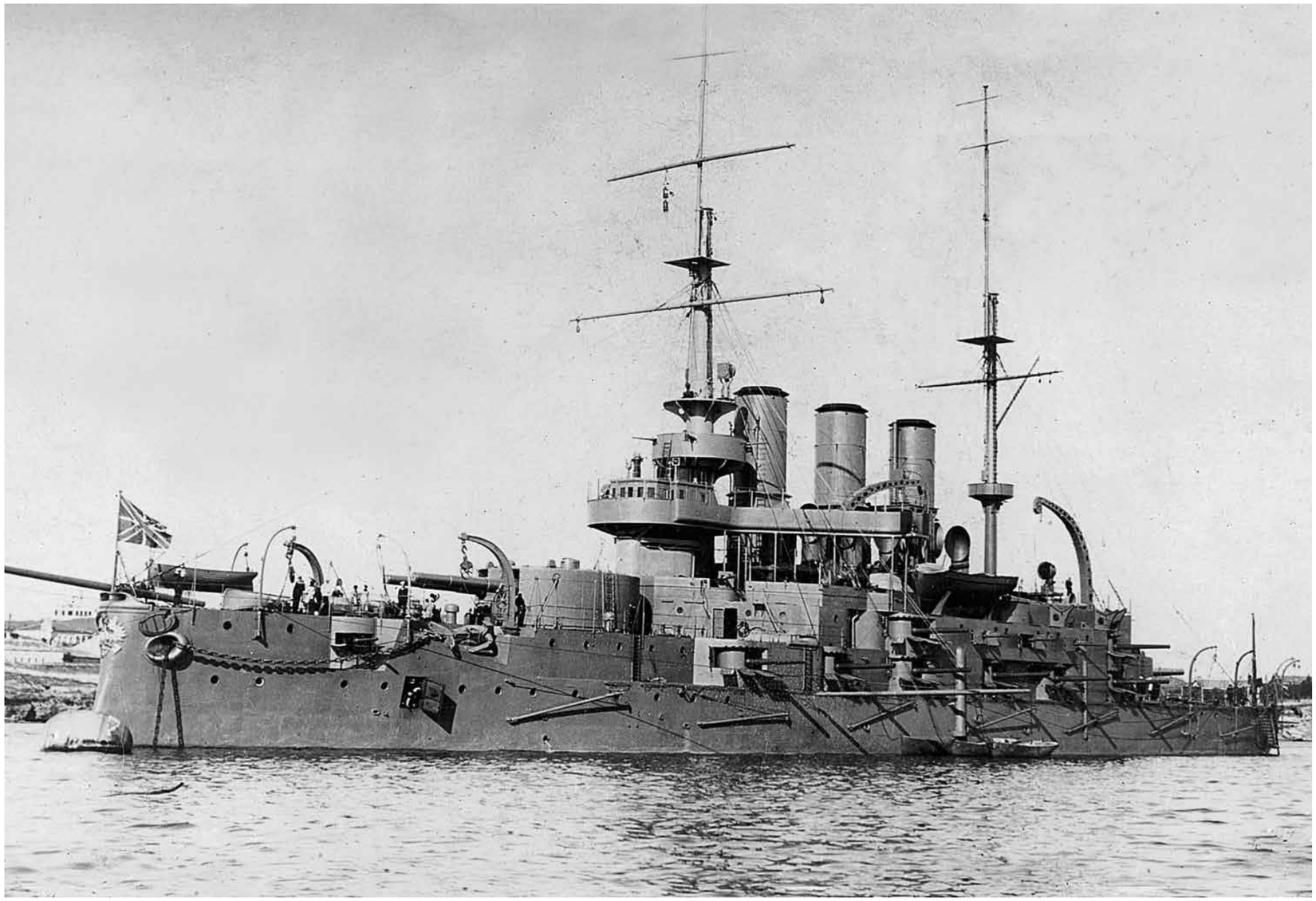
In recent years, Türkiye has shown great interest in establishing ties with the Argentine military sector. By the end of 2023, Türkiye has incorporated the figure of military attaché into the diplomatic corps accredited in Argentina, marking a historic milestone in bilateral diplomatic relations. In addition to its diplomatic relevance, the arrival of a Turkish military attaché in Argentina is a step towards building Türkiye 's greater presence and influence in Latin America, which could open up new opportunities for cooperation in various areas, including defense, trade and culture.

In this sense, this development is not only a significant moment for the present, but also has implications for future foreign policy and intercontinental relations between the two countries.

Furthermore, the Turkish defense industry, being one of the most dynamic and technologically advanced in the world, offers a unique opportunity for Argentina not only to modernize its defense capabilities, but also to strengthen its economy through industrial and technological cooperation. This could result in mutual benefit, facilitating Türkiye's access to Latin American markets while Argentina could improve its production and defence capabilities.

However, there are some conditioning factors for the full development of trade and technology links, such as the lack of a trade agreement and the lack of institutional cooperation bodies. Although Argentina has been declared Türkiye's third largest trading partner in the region, bilateral trade is still very low compared to countries such as Uruguay, Chile and Colombia. Finally, the change in both countries' foreign policies also plays a fundamental role. Türkiye has been trying to expand its global influence and has shown a growing interest in Latin America, however, Argentina's foreign policy swings, such as its renunciation of joining the BRICS or its explicit alignment with the US and Israel, could cool down the impulses for bilateral and multilateral cooperation with Türkiye.

References
• *Atalayar (2020) Turkey and Argentina seal their first strategic Alliance Disponible en: https://www.atalayar.com/en/articulo/politics/turkey-and-argentina-seal-their-first-strategic-alliance/20200511123041457 41.html*
• *Buzan, B., & Hansen, L. (2009). The Evolution of International Security Studies. Cambridge University Press.*
• *Caramani, D. (2020). Comparative Politics. Oxford University Press.*
Congreso de la Nación Argentina. (1988) . Ley de Defensa Nacional Nº 23.554. Disponible en: https://servicios.infoleg.gob.ar/infolegInternet/anexos/20000-24999/20988/texact.htm
• *Congreso de la Nación Argentina. (1991) Ley Nº 24.059 de Seguridad Interior. Disponible en: https://www.argentina.gob.ar/normativa/nacional/458/actualizacion*
• *Congreso de la Nación Argentina. (2001) Ley de Inteligencia Nacional Nº 25.520. Disponible en: http://servicios.infoleg.gob.ar/infolegInternet/anexos/70000-74999/70496/norma.htm*
• *Defense Here. (2023). Turkish Aerospace to build ARSAT-SG1 for Argentina. Disponible en: de https://www.defensehere.com*
• *Defence Industry Europe. (2023, October 21). Turkey: Record increase in defence budget in 2024. Disponible en: https://defence-industry.eu*
• *Díaz J.J. (2022) Nuevos proyectos de INVAP: Alianza con Turkish Aerospace y satélites Small Geo para una mayor participación global. Infobae. Disponible en: https://www.infobae.com/def/2022/08/06/nuevos-proyectos-de-invap-alianza-con-turkish-aerospace-y-satelites-small-geo-para-una-mayor-participacion-global/*
• *DW News. (2023). Global military spending reaches record high. Disponible en: https://www.dw.com*
• *Embajada de Argentina en Türkiye. (2022). Historia de las Relaciones Bilaterales. Disponible en: https://www.cancilleria.gob.ar*
• *Hirst, M. (2020). América Latina en el sistema internacional. Siglo XXI Editores.*
Middle East Institute. (2022). Turkey's defense industry: Opportunities for global partnerships. Disponible en: https://www.mei.edu
• *Ministerio de Defensa. Decreto 457/2021. Directiva de Política de Defensa Nacional. Boletin Oficial de la Republica Argentina. Disponible en: https://www.argentina.gob.ar/normativa/nacional/decreto-457-2021-352107*
• *Ministerio de Defensa (2022) Guía de Acuerdos bilaterales y multilaterales de la Defensa y de las FFAA argentinas. Secretaría de Asuntos Internacionales para la Defensa. Disponible en: https://www.argentina.gob.ar/sites/default/files/2022/10/guia-acuerdos-web.pdf*
• *Ministerio de Defensa (2023) Taiana y el embajador de Turquía buscan fortalecer la cooperación entre ambas naciones en materia de Defensa. Disponible en: https://www.argentina.gob.ar/noticias/taiana-y-el-embajador-de-turquia-buscan-fortalecer-la-cooperacion-entre-ambas-naciones-en*
• *Ministerio de Relaciones Exteriores y Culto. (2011). "Memorando de Entendimiento en Defensa entre Argentina y Türkiye". Dirección de Tratados. Disponible en: https://tratados.cancilleria.gob.ar/tratado_ficha.php?id=lKSmmg==*
• *Military News. (2023). Revamping Defense: Argentina's Ambitious Plans to Boost Land Military Capabilities. Disponible en: https://military.news*



IS **MARITIME POWER** ONLY ABOUT **CONTAINER COUNTS**, **TONNAGE**, AND **WEAPONS**?

The sea is not a mere entity to be respected; it is a living force that demands both fear and appeals for mercy. The requirements of living and working in harmony with this force have given rise to a unique maritime language and culture.

ARTICLE
UĞUR ESMER
Historian, Writer

Moreover, ensuring a safe voyage necessitates more than just appeasing the sea. Another entity, equally temperamental and often thought of as feminine, the ship, must also be kept content. Whether it's a small canoe or an aircraft carrier with its own postal code, this principle remains unchanged.

The singularity of the sea and maritime life lies in the fact that not everyone can understand or master it; only those imbued with a true seafarer's spirit can prevail. This spirit, or "essence," is not inherited through family or geography. Successfully contending with the sea, maintaining control over the ship and its crew, while simultaneously delivering cargo to its destination or engaging in naval combat, demands exceptional skill. Entrusting a fleet to someone without maritime expertise is a disaster waiting to happen. One of the most significant examples of this is the catastrophic defeat at the Battle of Lepanto, which marked a devastating loss of ships and trained personnel in Turkish naval history. One key reason for this defeat is often attributed to Müezzinzade Ali Pasha, a Janissary agha who became Grand Admiral (Kaptan-ı Derya) after marrying Sultan Selim II's daughter, despite having no maritime background.

Disregarding all these elements and relying solely on numbers or the strike and stance[1] power of ships leads to conclusions and analyses that are flawed, incomplete, and detached from the realities of the sea. Maritime activity, whether among the Polynesian islands or between Mediterranean ports, has been the primary driver in the development and spread of civilization.

The maritime community, independent of geography and beliefs, possesses its own distinct culture. Maritime existence is inherently tied to sea culture. Without this connection, what we call maritime activity would merely be the movement of a floating mass with buoyancy between two shores. The concept of "Sea Culture" encompasses all values related to the sea and maritime life. These values include societal awareness of the sea, maritime traditions, the language of seafarers, beliefs, sea-inspired creations, and unwritten rules that govern social life at sea.

> The maritime people, independent of geography and beliefs, have their own distinct culture.

To understand these values, we must start by examining maritime awareness, as this culture cannot thrive in nations where such awareness does not exist. Maritime awareness encompasses the state's commitment to protecting its cabotage rights, ensuring public access to the sea, facilitating and encouraging engagement with maritime activities, including water sports, and creating added value from the sea through sectors like fisheries, seabed mining, tourism, port and hinterland services, shipyards, and similar activities. Furthermore, it involves taking the necessary measures to ensure these activities remain sustainable.

As a simple example, due to factors such as unregulated and reckless fishing, invasive species, and climate change, global fish populations have begun to decline significantly. As a result, commercial fishing fleets have increasingly turned to illegal operations within or just beyond the territorial waters of countries unable to defend or enforce their cabotage rights. Fishermen who lose their livelihoods, as seen in the case of Somalia, often resort to piracy. This not only threatens major maritime trade routes but also raises freight and insurance costs, prompting the formation of multinational task forces and increasing naval expenditures for affected nations. On the other hand, the decline

[1] The total firepower of your ship's weapons is referred to as its "strike power," while the armor structure or self-defense systems capable of protecting your ship against the enemy's weapons is referred to as its "resistance power."

in fish populations impacts not only the country's fishermen but also the entire population, as diminishing food resources create widespread consequences.

Maritime tourism offers significant added value and prestige not only through beaches or luxury cruise ships but also through large-scale sailing competitions. Events such as the Vendée Globe, Golden Globe Race, America's Cup, Bosphorus Cup, and various offshore races sponsored and organized by prominent brands attract sailors and spectators from around the globe to the host nations.

Key milestones in global maritime history have originated from countries that are part of Mediterranean civilizations. For centuries, the peoples of these nations have influenced one another and worked together. Crews speaking different languages merged into a common maritime language to collaborate effectively. This maritime lexicon is a blend of Latin, Italian, Spanish, Portuguese, French, Arabic, Turkish, and Greek. For instance, when someone shouts "Varda!" on deck, everyone knows to stay alert. Using maritime language in naval writing ensures clarity and understanding among sailors, even years down the line. This shared language remains a vital tool for effective communication and maritime heritage.

Maritime traditions encompass a wide range of practices, some rooted in ancient rituals meant to calm the sea or command the wind, while others are longstanding rules designed to maintain discipline, safety, and hygiene aboard ships. During periods of calm winds while sailing, a captain would traditionally turn their back to the sea and throw a silver coin into the water to "buy" the wind. One of the greatest fears of sailors has always been spirits. Figureheads, the decorative busts or sculptures mounted at the bow of a ship, were believed to house the ship's soul and were often named after the vessel itself. If these figureheads were damaged during battle or storms, they were prioritized for repair to avoid angering the ship's spirit. After the use of figureheads fell out of practice, the ship's spirit was thought to reside in its name. Over time, it was observed that ships bearing the same name often encountered similar fates. If a ship's name was to be changed, a ritual involved the ship completing a full circle while a bottle of wine was poured into the sea behind it, symbolically releasing the old spirit. Another significant tradition is the christening of a ship. During its launch, the ship's "godmother" would break a champagne bottle on the bow to bless it. If the bottle failed to break, it was considered a bad omen. An infamous example of this occurred during the launch of the Soviet submarine K-19, nicknamed "The Floating Hiroshima." Due to the rubber coating on the submarine's hull, the champagne bottle bounced off and did not break. Throughout its service, the K-19 experienced a series of tragic accidents, including workplace mishaps, reactor failures, and fires, resulting in the loss of 62 lives from its keel-laying to its decommissioning. Today, during the launch of submarines, bottles are either smashed against metal sections of the vessel or broken using a hammer attached to a special rig, ensuring the tradition is carried out without mishaps.

> While some naval traditions are universal, they are generally unique to each country.

Discipline and order are crucial for ensuring safety at sea. Practices such as coiling ropes neatly instead of leaving them scattered on the deck, securing movable components with sea knots to prevent unintended opening and accidents, and painting or marking areas to make leaks and spills more visible must not be overlooked. Historical records of the TCG Yavuz battlecruiser, for instance, detail how the deck was washed and critical areas of the ship were repainted after every coal loading to eliminate coal dust that could ignite from a stray spark from the funnel or a cigarette.

Seagulls and albatrosses hold special significance for sailors. After long voyages across open seas, the sight of a seagull heralds the approach of land. Albatrosses, on the other hand, are believed to carry a more sacred role. It was thought that the spirits of deceased sailors were carried by albatrosses. Killing one was believed to bring misfortune, as the souls of the dead sailors would either haunt the crew or curse them. Another harbinger of bad luck is the sighting of a ghost ship. Abandoned vessels, either due to the death of their entire crew during a voyage or an emergency evacuation, are known to still drift aimlessly across the oceans, becoming eerie reminders of the perils of the sea.

While some naval traditions are universal, many are unique to individual nations. In navies that relied on foreign advisor officers for extended periods, it is evident that the customs of those officers' home countries were adopted. In the Ottoman Navy, modernization efforts were often guided by British, American, and German advisors, leading to the integration of British naval traditions into both the Ottoman and Republican navies. For instance, aboard warships, only the ship's commanding officer is addressed as "Commander," while other officers are addressed as "Sir." This practice originates from British customs.

Other traditions observed on Turkish ships include visiting the tomb of Barbaros Hayreddin Pasha before setting out on a voyage, cooking dry beans on Mondays to ensure a sense of time is maintained,

> Significant milestones in global maritime history have emerged from countries that are part of Mediterranean civilization.

keeping a Quran securely housed on the ship's tallest mast, and avoiding the word "crossed" when logging the transit through the Dardanelles Strait in honor of the naval victory on March 18, 1915. Additionally, there is a lighthearted tradition where officers wearing shoulder boards with reversed cross-stitch patterns on their summer uniforms must treat their peers to dessert.

Whether in the navy or the merchant marine, uniforms bear a striking resemblance. In winter uniforms, ranks are displayed on the cuffs of the sleeves. This tradition has a practical origin: during critical decision-making meetings in the officers' lounge, those seated around the table rest their hands on their knees, while those standing clasp their hands behind their backs. In such settings, the seated officers' ranks are obscured by the table, and the standing officers' ranks remain hidden behind them. This arrangement ensures that no rank distinctions are visible, fostering an environment where everyone can share their thoughts on decisions affecting their shared fate. While at sea, not everyone may be on the same ship, but they are all weathering the same storm. A sailor's greatest ally is often another sailor. In places where assistance might take hours or even days to arrive, ships closest to a distress signal immediately alter their course to provide aid. There have even been instances where naval ships from allied nations dispatched technicians to assist a disabled warship. A true sailor is always a gentleman and a helper. Beyond emergencies, seafarers assist one another with sharing route information, maps, communication resources, and supplies, embodying a culture of camaraderie and mutual support at sea.

> At sea, not everyone is on the same ship, but everyone is in the same storm.

Food stands as one of the greatest sources of morale for sailors at sea. In many navies, meals are tested and approved by the ship's second-in-command before being served, a practice far more critical than it might seem. A notorious historical example highlights the importance of this seemingly simple ritual. In 1905, aboard the Russian Black Sea Fleet's battleship Potemkin, the ship's doctor deemed worm-infested meat acceptable to eat after washing it with seawater. When the crew was pressured to consume this meal, it sparked the first flames of an already brewing mutiny. The sailors revolted against their officers, killing seven, including the doctor, and imprisoning twelve others. The revolt spiraled into chaos as Potemkin bombarded Odessa for firing upon striking civilians, and other ships ordered to suppress the mutiny instead joined the rebellion. Initially, the crew sought refuge and resupply in Romania, but their request was denied. When they turned to Istanbul for asylum, Sultan Abdulhamid II rejected their appeal. Ultimately, Potemkin returned to Romania and anchored at Constanța. This mutiny had far-reaching consequences. It accelerated the revolutionary momentum in Russia, contributing to Lenin's return and garnering public support that fueled the path toward revolution. The events aboard Potemkin remain a potent reminder of how something as seemingly small as a meal can tip the scales of history.

Lastly, I'd like to address the rules and traditions particularly observed among amateur sailors and yachters. The gentlemanly spirit of the sea and maritime decorum are most evident in the realm of amateur sailing. Whether aboard a luxury cruiser or a small dinghy, these rules are upheld both in marinas and on open waters. One of the most fundamental practices is stowing the fenders after departing the marina. Not only does this improve the vessel's appearance, but it also prevents loose fenders from being swept away by the sea and creating hazards for other boats. Similarly, it is essential to ensure no ropes hang overboard, as they could become entangled in the propeller. Before boarding a vessel, always seek permission from the owner. Shoes should be removed before stepping onboard, unless the owner specifies otherwise, in which case clean, dedicated boat shoes should be worn. These should never have black soles, as the marks they leave on the deck are notoriously difficult to clean. As a courtesy, it is customary to bring a small gift for the boat owner, similar to visiting someone's home. For extended stays on a boat, use compact luggage, be mindful of water and electricity consumption, and follow the captain's instructions meticulously. In coves and marinas, avoid playing loud music or approaching mooring spots at high speeds. One of the most common issues is speedboats failing to slow down near other vessels, creating waves that endanger surrounding boats.

> Unfortunately, in today's world, the land-based mindset is occupying the seas with vessels they merely see as prestige symbols.

When anchoring overnight, avoid running engines or generators unless absolutely necessary, and if they must be used, notify nearby boats in advance. Always greet fellow sailors and, on open waters, check in via radio to see if they need assistance. When using the radio, Channel 16 should be reserved strictly for hailing, and conversations should be shifted to designated yachting or fishing channels to avoid clogging communication lines. By adhering to these guidelines, amateur sailors can contribute to a more harmonious and respectful maritime environment, reflecting the true spirit of life at sea.

Unfortunately, today's seas are increasingly occupied by landlubbers who view their vessels merely as symbols of prestige. These boat owners, whom we cannot call true sailors, go to great lengths to resist adapting to maritime culture and often react defensively to those who try to guide them.

To the genuine seafarers out there, fair winds, following seas. May God bless you all!

AVCI IYTE ROCKET TEAM

AVCI İYTE is a dynamic team established in 2021 under the advisory of Prof. Dr. Cem Çelebi at İzmir Institute of Technology (İYTE), bringing together students passionate about engineering and technology. The team conducts studies in various fields such as R&D, analysis, production, software, design, and avionics to enable its members to apply their theoretical knowledge in practice. With a diverse membership ranging from graduate students to preparatory students, AVCI İYTE aims to unite experienced members with new engineering students.

In its founding year, the AVCI team participated in the Teknofest Medium Altitude Rocket Competition held in Türkiye. In 2022, the team became a finalist, successfully completing all reporting and production stages, and subsequently launched its rocket to an altitude of over 2,700 meters and a speed of 987 km/h. Following this successful launch, the team presented their work at the İYTE stand during Teknofest İzmir in 2023 and later participated in the 74th International Astronautical Congress (IAC) in Baku, Azerbaijan, where they established connections with international companies and showcased their projects. In 2024, AVCI competed in the Teknofest High Altitude Rocket Competition, which required more advanced aerodynamic systems, professional electronic components, and a competition environment surpassing the speed of sound. The 3-meter rocket produced for this competition achieved an altitude of 4,500 meters and a speed of 1,730 km/h. The rocket successfully executed various missions, transmitting data continuously throughout the flight and completing all tasks, finishing the competition in 8th place.

Supported by the Izmir Institute of Technology, its Rector Prof. Dr. Yusuf Baran, and numerous sponsors, the AVCI team remains committed to innovation. It continues to advance in areas such as embedded systems, mechanical design, communication, and composite manufacturing, striving for excellence in every project.

KAAN BAĞDİKEN
Avcı Roket Team Captain

IZTECH CENGAVER ROVER TEAM

IZTECH CENGAVER ROVER team started its activities in 2022 with approximately 12 people under the supervision of Prof. Gökhan Kiper from the Department of Mechanical Engineering. The main purpose of the team is to design a rover, a space exploration vehicle designed to move on the surface of a celestial body. Our Rover team, which has its own team-specific workshop, aims to represent our country and our school in international competitions by bringing together students who are interested in space technologies and want to work in this field. Our team includes students from every faculty of our school, from the faculty of engineering to the faculty of architecture. Our team is divided into five different sub-teams: mechanics, electronics, software, science, social media and sponsorship, forming the IZTECH Cengaver Rover team.

The first competition our team participated in in its first year was the "Anatolian Rover Challenge 2023" at METU. This competition, which is the beginning of the Cengaver Rover team, not only laid the foundations of our team, but also provided the first team members who will transfer their knowledge to the future periods with the opportunity to gain experience and develop themselves and future Rovers. A total of 18 teams remained as finalists in the ARC 23' competition, and our team completed the competition as the 8th among them.

The second competition we were entitled to participate in as the IZTECH Cengaver Rover team was the "Anatolian Rover Challenge 2024" held in METU, which we also participated in last year. A team of 14 people from our team of 30 people participated in the competition. Our team finished 7th in the competition where we had the opportunity to observe the competition environment, the necessary improvements, our shortcomings, our successful design ideas and other teams' solutions to the tasks.

Our team continues to grow and improve itself with the help of our school, İzmir Institute of Technology, our rector Prof. Dr. Yusuf Baran and our sponsors. Our team continues to improve itself with the experience we gain every year and with the new teammates we have acquired and continues to take more confident steps towards its goal.

SİMAY ÖZKAN
Cengaver Rover Social Team Leader

BREAKING BARRIERS IN SECURITY, TECHNOLOGY AND STRATEGY

From overcoming societal expectations to navigating the complexities of international relations, security studies, and emerging technologies, Zülhice Gözcan has carved out a unique path in academia and defense. In this exclusive interview with A5 Defense Magazine, we explore her journey, from defying early educational obstacles to becoming an expert in cybersecurity, UAV systems, artificial intelligence, and strategic defense.

Can you introduce yourself?

I was born in Çanakkale Biga into a family of North Caucasian immigrants. I started primary school at the age of 5 and graduated when I was 10. Despite my efforts, I was not sent to middle school. However, I was never the type to sit and wait for fate while crocheting. I would seize every opportunity to find something to read, whether it was a newspaper or a book. At 18, I told my family I would take the external exams to complete my education. Although they were not very supportive, I was determined. I completed middle school in one year and later enrolled in an open high school program. Due to the minimum duration of 2.5 years, I graduated in 1997 after completing my studies. I then immediately took the university entrance exams with a single focus: International Relations. When the results came out, I had been accepted to the International Relations Department at Çanakkale Onsekiz Mart University's Biga Faculty of Economics and Administrative Sciences. I graduated in 2002, and in 2005, I completed a Master's degree in Economics at Çanakkale Onsekiz Mart University.

The same month I received my diploma, my father fell ill, and I took on the responsibility of his care. Sadly, I lost him in 2010, and two months later, my mother also passed away. Caring for my father made me feel as though I had a small child, while my mother was my spiritual fortress. Losing them both so suddenly was a profound test of resilience for me. Despite this, I inherited the responsibility for two of my uncles from my mother. One was 82, and the other 94. In 2011, I resumed my education by enrolling in the PhD program in International Relations at Çanakkale Onsekiz Mart University, but I had to withdraw to care for one of my ailing uncles. Four years later, both uncles passed away within 45 days of each other, marking the end of an era for our large, traditional family shaped by Caucasian culture.

In 2016, I began a second Master's in International Relations at Çanakkale Onsekiz Mart University, completing it with a thesis titled "The Concept of Traditional Warfare and Cyber Warfare: Political and Legal Evaluations." In 2020, I was accepted into the PhD program in Economics at Trakya University, where I am currently working on my dissertation, "Technological Advancements in Türkiye's Defense Industry and Analysis of the Sector's Competitive Power."

Since 2023, I have been teaching at Çanakkale Onsekiz Mart University as a lecturer, delivering practical courses on Unmanned Aerial Vehicles (UAVs) and Artificial Intelligence (AI) applications. My areas of research and interest include cybersecurity, UAVs, AI, war studies, and strategy.

If there is one takeaway from my life story, it would be a message for younger generations: cherish the time you have and commit wholeheartedly to your education while your parents are healthy and capable. As life progresses, responsibilities increase, and the time to pursue your dreams becomes scarcer. My misfortune was that my family did not support my education after primary school. Had it been different, perhaps I would not have constantly felt like I was racing against time. That said, I believe every experience has shaped and improved me, for which I am grateful. My only regret is that my parents and uncles could not witness my professional accomplishments, and I couldn't create cherished memories of traveling with them beyond caregiving.

How was your educational and career journey as a woman in technical fields such as unmanned aerial vehicles and weapons systems? Did you face any challenges or experience inspiring moments along the way?

Throughout my academic life, I have been curious about many different disciplines and have sought to learn about them. During this journey, I

realized the necessity of integrating technology into whichever field of study one pursues in today's academic landscape. For instance, an academic in the discipline of international relations must naturally be well-versed in security, one of the discipline's core pillars. Today, security encompasses a wide range of areas, including military security, strategic security, and cybersecurity. These dimensions of security are interconnected, forming parts of a larger whole, making it crucial to understand their importance and, ideally, gain competence in all of them.

Over the decades, the previously sharp boundaries between technical sciences and social sciences have blurred, leading to an interdisciplinary approach. I first became aware of this during my second master's degree in International Relations, particularly while working on my thesis titled "The Concept of Traditional Warfare and Cyber Warfare: Political and Legal Evaluations." When I expressed my desire to explore cybersecurity in my thesis, my advisor, Prof. Dr. Yücel Acer, pointed out that this was a highly technical topic that might challenge me as a student from a social sciences background.

Despite cybersecurity being a relatively new topic in international relations at the time, real-world examples demonstrated its significance. Cyberattacks, often launched without guns or bombs, could target critical military technologies or infrastructure, such as dams, from any location with a computer and internet access. While I do not possess the technical expertise of a computer engineer or software developer, my goal was to highlight the threats posed by cybersecurity from the perspective of international relations and raise awareness.

During this process, I faced initial warnings about potential difficulties due to my lack of technical knowledge. However, I never encountered any insurmountable barriers. When I began teaching as a lecturer at Çanakkale Onsekiz Mart University in 2023, I aimed to share the conveniences brought by technological advancements with my students while also raising their awareness of the potential threats if not approached carefully. I taught a course on the significance and applications of unmanned aerial vehicles (UAVs) in both military and civilian contexts. I am deeply grateful to Çanakkale Onsekiz Mart University Rector Prof. Dr. R. Cüneyt Erenoğlu and Biga Faculty of Economics and Administrative Sciences Dean Nazan Yelkikalan for their unwavering support of technological advancements and innovation.

In the 2023–2024 academic year, I introduced a course titled "Technological Developments in the Workplace," where I provided hands-on training on artificial intelligence (AI) applications. I also encouraged my students to enroll in the "AI for Kids" certification program offered for free on Türkiye's e-Government platform. Initially, some questioned the relevance of a course designed for children, but I explained that it provided a simple yet effective way to understand how AI programs are created and operated. I recommended they take notes after watching each video and repeatedly practice the steps outlined.

While some students struggled to complete the certification, I maintained my belief in their ability to succeed and reassured them during the process. I emphasized that passing the written exam and obtaining this certificate were prerequisites for the course. Some students requested additional time to complete the program, and I accommodated them by withholding their grades until they submitted the certificates. Additionally, I prepare summaries of my lectures and distribute them to students a week before midterms and finals. This practice stems from my 25 years of academic experience and my personal commitment to creating a supportive learning environment. I firmly believe that a teacher's role extends beyond imparting knowledge to fostering a positive emotional atmosphere. While discipline is crucial in the classroom, I also emphasize the importance of kindness and respect, teaching my students that the courtesy they show others reflects their self-respect. As a teacher, my goal is to create an environment of mutual respect, trust, and empathy. In such an environment, learning becomes an enjoyable activity rather than a tedious obligation. Education is a challenging journey, and teachers must be not only experts in their fields but also supportive guides. Sometimes, a high-achieving student may falter academically due to personal challenges. In such cases, it is up to the student to share their struggles, but the teacher's role is to give them the time and support needed to regain their footing.

For instance, I encourage students to meet the university's attendance requirements but remain flexible for those with legitimate challenges, such as financial difficulties requiring them to work. I avoid penalizing students for absences as long as they actively participate in class and prepare for exams. I also remind them of the sacrifices their families make for their education and emphasize that their commitment to their studies is the best way to honor these sacrifices.

Which area of expertise has had the greatest impact on you during your academic career, and what advice would you give to women in these fields?

The areas that have influenced me most during my academic journey are security and strategy, which I have worked on with great enthusiasm. Security is a fundamental human need, second only to physiological needs. When we generalize this concept to the international arena, security becomes a matter of vital importance for states. Protecting territorial integrity and sovereignty from external threats is always a state's top priority.

To ensure robust defense, states must possess strong armies equipped with advanced weapon technologies suited to their era. No matter how wealthy a nation is, true independence cannot be achieved without a strong and self-sufficient national army. This is evident in many examples from the Middle East, one of the world's most volatile regions. With this understanding, I have focused my work on security, war studies, and strategy.

Strategy can be defined as the method used to determine the steps needed to achieve a specific goal. In this sense, I view strategy and security as two interrelated components of war studies. My secondary aim in this field is to raise awareness about the horrors of war throughout history and to draw lessons from past events. Considering the potential use of nuclear weapons in future conflicts, the level of destruction could be unprecedented.

As the Earth's resources are rapidly depleting and the global population continues to rise, we are moving toward a future where the intervals between wars may shorten, making constant conflict a norm. Examples of this have been evident for decades in the Middle East and Africa. These reasons have driven me to focus on war studies and strategy as an academic. My humble advice to women is to focus on fields they are passionate about. Academia is a lifelong learning process that requires dedication, including sleepless and exhausting nights spent studying and researching. Personally, I have spent years immersed in books and research, often losing track of time, yet I have no regrets because I pursued what I loved.

I have supported my work in security with studies on cybersecurity, artificial intelligence, and unmanned aerial vehicles. I encourage women to embrace the fields they are passionate about and to remain committed, as this will transform challenges into meaningful and fulfilling experiences.

How did you start your firearms training? What has been the most inspiring aspect

of this journey for you?
The idea of firearms training had been on my mind for years. Given my focus on security, I have participated in various personal security training programs, including close protection and defensive training for sporting purposes. However, firearms training is a very different, riskier, and highly disciplined field that requires exceptional attention. For this reason, I sought qualified instructors and thoroughly researched my options.

Eventually, I discovered that CANİK Academy offered such a training module, and I immediately applied to participate. What inspired me most during this process was the combination of precision, discipline, and the personal empowerment that comes with mastering a challenging skill. This journey not only enhanced my understanding of security but also reinforced my belief in the importance of continuous learning and self-improvement.

What is the importance of women receiving firearms training in terms of individual and societal security? What changes are needed in society to encourage more women in this field?
From an individual perspective, firearms training for women has become increasingly necessary given the rise in violence against women in recent years. Many attackers are men, often using their physical strength to overpower women. This imbalance of physical force emboldens perpetrators, knowing that their victims are less likely to defend themselves using similar means. In such cases, firearms training, alongside self-defense education, can serve as a deterrent, empowering women to protect themselves effectively.

Aggression often targets perceived weaker or more vulnerable individuals, making women more susceptible due to physiological differences. Providing women with the skills to defend themselves creates a psychological and practical barrier against potential threats.

From a societal perspective, women's engagement in firearms training can have broader implications. Women, often regarded as nurturers due to their role as mothers, tend to value human life deeply and approach decision-making with caution. This raises the question: could increased firearms training among women lead to a rise in conflict or misuse? The answer lies in understanding human nature, which is complex and multifaceted. The key is fostering awareness that personal freedom ends where another person's rights begin. This awareness can only be achieved through societal education.

As societal consciousness grows, rates of crime and violence decrease. Therefore, the solution ultimately lies in education, education about the sanctity of human life, the moral and psychological burden of taking a life, and the far-reaching consequences for the attacker, the victim, and their families.

When providing firearms training, it is essential to emphasize these principles. Participants should understand that the primary goal of such training is deterrence, not aggression. This approach ensures that firearms training is not only a means of personal empowerment but also a step toward creating a safer and more responsible society.

How did you come across CANİK Academy, and what was the most compelling factor that led you to pursue training there?
I had been researching professional firearms training for quite some time. During my search, I came across CANİK Academy's firearms training modules online. Upon reviewing their program, I learned that esteemed instructors like İsmail Dut, who had trained Türkiye's elite SAT Commandos for years, Ufuk Erdoğan, known for his remarkable achievements in the Navy, and other distinguished trainers were leading the courses. This was the decisive factor for me, and I immediately decided to apply.

I successfully completed the first and second stages of their training modules. In addition to safe firearms handling, the training also included modules on raising awareness of internal and external security in any given environment, which significantly enhanced my perspective.

What was the most valuable experience you gained during your training at CANİK Academy? How has it impacted your personal and professional life?
At CANİK Academy, I learned that firearms training is a multi-layered discipline that goes beyond just shooting. The program emphasized that in a dangerous situation, every step, from gripping the weapon to neutralizing the target, must be executed with precision. We were continuously reminded that our goal is not only to act quickly but also to ensure the safety of everyone in the vicinity, including ourselves, while effectively neutralizing the threat.
The training also included scenarios that helped us identify potential attack points in both open and closed environments. We practiced mapping out possible escape routes in our minds, ensuring a swift and secure exit in case of an attack. This has instilled in me a valuable habit of analyzing my surroundings from a security perspective wherever I go.

In essence, CANİK Academy provided us with skills that extend beyond handling firearms. It taught me to evaluate my environment through a security lens, a habit that has proven invaluable both personally and professionally.

Have you observed that women participating in firearms and defense training gain more self-confidence? How could greater female involvement in this field change societal perceptions?
Women's physiology naturally lacks the muscular strength that men typically possess. In situations where women face male attackers, unless they have specialized training in self-defense sports such as boxing or Muay Thai, it becomes significantly challenging for them to defend themselves against a physically stronger aggressor. Firearms training, supported by proper self-defense education, offers women a sense of security and confidence. It also acts as a deterrent by making potential attackers think twice about the risks of confronting an armed individual.

As an academic who often travels long distances and lives in a rural area, I have taken firearms training to ensure my personal safety. I have also acquired firearms within the bounds of my legal rights, with my first being a CANİK TTI Combat pistol. However, firearms training is not a one-time learning process. It requires continuous practice to master skills such as breath control, grip, and shooting accuracy. I regularly visit shooting ranges in neighboring provinces due to the lack of civilian-accessible ranges in Çanakkale, enhancing my expertise under the guidance of professionals.

What message would you like to give to women following you on social media or in professional spaces? How would you define your motivation for encouraging women to participate in security and defense training?
Throughout my life, I have earned everything I have through hard work and effort. Among these, my greatest struggle was for education. In the 1980s, compulsory education in Türkiye only extended to the fifth grade, and I was not permitted to attend middle school. I never accepted this and fought until the age of 18 to continue my education. I firmly believed that to take control of my life, pursue a career I loved, and achieve economic

independence, I needed a solid education. This belief has been my lifelong motivator.

Life, however, is not a straight path. It often requires climbing steep mountains and navigating sharp turns. At times, you may find yourself exhausted and need to rest briefly. What matters is listening to the voice of your goal, which can reignite your strength and motivate you to move forward. Even when that voice becomes faint, you must focus on it and let it guide you.

Another important point is developing the ability to stand out. To distinguish yourself among millions of competitors, you must be noticeable. I believe that regardless of your profession, integrating it with modern technologies is essential. For example, while researching strategy and security within the field of international relations, I explored the integration of technology, focusing on topics such as cybersecurity, autonomous systems, and artificial intelligence (AI). These efforts not only fueled my scientific curiosity but also helped me secure a position as a lecturer at Çanakkale Onsekiz Mart University.

Today, accessing knowledge is incredibly easy, all you need is a smartphone with an internet connection. Women should make the most of this opportunity. Whether they are involved in art, architecture, or healthcare, they should combine their profession with technology. Since safety is a fundamental human need, women should consider learning self-defense sports to protect themselves against the high rates of violence they face globally. Adding firearms training to this education is also crucial.

For me, my interest in security stems from a desire to feel safe and take proactive measures against potential threats. I encourage women to embrace similar motivations and invest in their personal safety and empowerment.

What are your future goals for personal development in this field? Are there any new projects or training programs you plan to pursue?

Given Türkiye's geopolitical position, surrounded by nations in perpetual conflict, security concerns are deeply ingrained in our society. Additionally, everyday life exposes us to threats such as burglaries and robberies. In response, I am developing a project to establish a security company specializing in building capsule-like shelters and other fortified solutions to protect residential areas against various attack types. On a personal level, I intend to continue improving my skills in defense sports and firearms training. These efforts not only ensure my safety but also keep me prepared for unforeseen circumstances.

How do you view working at the intersection of your expertise in economics, security, and international relations?

All disciplines originate from economics and are interconnected. While academic studies in previous decades often separated fields such as economics, security, and international relations from technical disciplines like engineering, software, cybersecurity, and artificial intelligence, this distinction has blurred in modern times. Today, social and technical sciences are deeply intertwined.

As a strategist in international relations, it is essential to consider cyberattacks, autonomous systems, and artificial intelligence within the framework of security and strategy. I plan to continue pursuing interdisciplinary studies to integrate these fields, enhancing the depth and impact of my research.

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