DoD JOINT INTERMEDIATE FORCE CAPABILITIES OFFICE

News & Information

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NEWS SUMMARY:

- The U.S. Army's special warfare school released a video stressing how multidimensional irregular warfare is.
- The Philippines sent a civilian ship to ferry daily necessities to a warship at the Second Thomas Shoal that China says was illegally "beached" in the disputed waterway of the South China Sea.
- The Indo-Pacific's challenges require "every lever of statecraft, not just the military lever," Adm. Samuel Paparo said.
- The US Navy has responded to growing Chinese military activity in the Indo-Pacific region by sending a warship equipped with a state-of-the-art laser weapon for deployment in Japan.
- One of the most important challenges the U.S. military is facing right now is how to get fuel, ammunition and other equipment to front-line units on remote islands or sea lanes far from main U.S. bases, and protecting those supply lines from Chinese attack.
- A crew of scientists from the China Aerodynamics Research and Development Center is reportedly proving that high-speed kinetic energy weapons could turn the tide in the art of armored annihilation.

- Using lasers on the battlefield revolutionized precision munitions and how humans wield weapons.
- The Marine Corps will get a new drone-killing microwave weapon designed for expeditionary operations.
- Pro-Hezbollah protesters in Pakistan clashed with police after being blocked from reaching the U.S. consulate.
- A report by the International Network of Civil Liberties Organizations has detailed that rubber bullets can cause death and serious injury and are described as a “particularly dangerous type of kinetic impact projectile”.
- The UK plans to introduce its directed energy weapon against unmanned threats by 2026.
- Azerbaijan has demonstrated its first air defense laser system called Fireforce at the international defense exhibition ADEX-2024.

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GRAY ZONE COMPETITION:

Irregular warfare is everywhere in this new Army video

(Task and Purpose, September 29)

Irregular warfare is not what you think it is. In fact, to understand it, think bigger. That's the message in a new video on the topic from the U.S. Army's special warfare school. It's a slick, ominous clip, but one that was quietly released onto social media on Thursday, Sept. 26 by the United States Army John F. Kennedy Special Warfare Center and School.

The video, simply titled "irregular warfare clip," starts simple, with a musician playing on a violin and pastoral shots of a family playing near fields. As a clock ticks in the background, those cut to militant scenes. Aerial reconnaissance of cityscapes, combat footage in urban areas, including night vision shots, plus tanks firing. As the music builds, those idyllic scenes appear only briefly.

Irregular warfare, according to the Army's special warfare school, is several things. Chaotic. Multidimensional. A contest of power and influence. One description that lingers is "strategic competition," set over images of the Earth from space. The term, the United States' go-to phrase for its contest for influence with China, comes seconds after a notable shot of the Hong Kong skyline.

The video also features several bits of footage showing what the Army considers ideological battlefields and places where the U.S. is fighting for influence. There are shots of protests, from people marching in the streets — seemingly from 2020 — to protestors standing on barriers with fire in the background. Instead of soldiers in combat gear, the last half of the video includes suited figures in political offices. There are also several scientific aspects, from rocket engine ignition sequences to items being crafted on 3D printers. As the text next describes irregular warfare as "unity of effort," footage of a conductor leading a symphony ties together some of the ideas. Irregular warfare is a big picture matter, not limited just to actual combat battlefields.

It's not clear what the purpose of the video is, if it's an internal training tool for soldiers at SWCS or meant for wider release. At just over a minute and half long, it's a bit lengthy for any television commercial. Notably, it has not been shared by the school on any social media platforms beyond being uploaded to YouTube. It currently has less than 4,000 views. Task & Purpose contacted SWCS about "Irregular Warfare Clip," but as of press time has not received a response.

There is some overlap with another video uploaded to the school's YouTube page. That one, "Special Warfare Center Command Video," released on Sept. 24, is more of a general overview of what the school does. It features rougher footage and is not as heavily produced. But it outlines what kind of training and skills servicemembers learn at the school.

"We have a functional responsibility to integrate the role of irregular warfare in support of the joint force," the narrator says in that clip.

The video, with its sharp editing and high production value, is similar to the Army's 4th Psychological Operations Group (Airborne)'s "Ghosts in the Machine" video, released earlier this year as part of a psychological operations recruitment effort. That video relied heavily on montages and striking imagery to showcase the importance of psyops in conflict.

It remains unclear what "Irregular Warfare Clip" is meant for, but it is clear that someone in the Army is paying attention to editing lessons.

Watch full video: https://www.youtube.com/watch?v=hycTQMEg8FY

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China's coast guard says Philippine vessel took supplies to Second Thomas Shoal

(Reuters, September 27)

China's coast guard said on Friday the Philippines sent a civilian ship to ferry daily necessities to a warship at the Second Thomas Shoal that Beijing says was illegally "beached" in the disputed waterway of the South China Sea.

State media quoted the coast guard as saying Thursday's trip was in line with a temporary deal between the two countries, a reference to a provisional agreement struck in July after both had repeated altercations near the shoal.

However, the Philippines said the deal, reached after several run-ins at the shoal over the past few months, could be subject to review, following another recent flare-up elsewhere over the South China Sea.

In Manila, the Philippine armed forces (AFP) said the resupply mission to the naval ship Sierra Madre had been supported by the country's coast guard.

Essential supplies and provisions were delivered, easing the way for troop rotation, it added in a statement, vowing to persevere with its mandates in the West Philippine Sea, providing full support and care for troops stationed there.China claims nearly all of the South China Sea, despite overlapping maritime claims by Brunei, Malaysia, the Philippines and Vietnam, angering its neighbours.

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'Every lever of statecraft' needed to overcome Pacific threats, commander says

(Defense One, September 25)

The U.S. military services are "doing everything that's possible within the laws of physics" in the Indo-Pacific right now, but the region's challenges require "every lever of statecraft, not just the military lever," Adm. Samuel Paparo told Defense One in an interview.

On a balcony overlooking the ocean at the Indo-Pacific Chiefs of Defense Conference, the leader of Indo-Pacific Command called the region “the key strategic problem to the United States,” and said all-domain operations “are a requirement” in the theater.

“This is a time for agnosticism in all-domain operations. Every formation is applicable in every domain. So, you know, we are open to every formation that can operate in every domain… and all units are required to operate in all domains. Not encouraged—required,” Paparo said.

Paparo met with senior military leaders from 28 countries and NATO at the conference, whose theme was “The future Indo-Pacific: Building a resilient and interconnected region.”

Among them was Gen. Wu Yanan, who leads the People’s Liberation Army’s Southern Theater Command. Their in-person meeting continued a conversation begun in a Sept. 9 video call between the U.S. and Chinese commanders.

Only “time will tell” whether the communication will continue, Paparo said, but the video call “was a professional and courteous exchange of information, where I began by urging safe and professional conduct of forces, by pointing out a number of occasions where the [People’s Republic of China] hazarded U.S. and allied and partner forces throughout the theater.”

Wu “then made expressions of [China’s] own policy, none of which were a surprise,” Paparo said, after which he suggested that the two “could have a channel of communication unaffected by policy…where he and I could ensure that there were no miscalculations.”

Wu was “positive, but non-committal” on the idea of a regular communication channel, Paparo said, adding that his attendance at the conference “was a very positive sign.”

A press release issued by INDOPACOM after the conference noted that Paparo “underscored the importance of sustained lines of communication between the U.S. military and the PLA” in the in-person meeting.

China, of late, has been having fewer run-ins with the U.S., but more with allies, which is “why this channel is so important,” Paparo said.

Many of the recent aggressions have targeted Philippine vessels in the South China Sea, including a June attack by the Chinese coast guard on a Filipino naval craft involving an ax.

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North Korea's actions "bear watching," Paparo said. "We're deeply concerned with the growing numbers of deepening partnerships among North Korea-Russia, PRC-Russia." He added, "While we remain concerned, we also remain confident in our ability to deter and respond to aggression in the north."

China and Russia "are demonstrating their ability to cooperate, and they're demonstrating their, quote, no limits partnership," he said. …"Having foreseen this, we have a significant, significant deterrent and response posture partnership ongoing with INDOPACOM and NORTHCOM ongoing presently that's ready to intercept, ID, escort forces, and respond to forces…to ensure there's no seams."

For the conference, Paparo said the greatest possible outcome could be that "we come out of it with a common understanding of the environment, and we leave with a greater trust, so that when a problem arises, you have a baseline of trust, so that you can pick up the phone immediately and you can solve problems. And that's the greatest currency there is: Trust."

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Laser Showdown! U.S. Navy Deploys Directed Energy Weapons-Armed Warship In Japan Amid China Threats

(EurAsian Times, September 25)

The US Navy has responded to growing Chinese military activity in the Indo-Pacific region by sending a warship equipped with a state-of-the-art laser weapon for deployment in Japan.

US Navy destroyer, USS Preble, outfitted with the newest laser weapon, sailed from San Diego for Yokosuka, Japan, on September 22. Over the weekend, photos and videos of the destroyer leaving port for its forward deployment in Japan appeared on social media.

The US Navy announced the deployment on August 1 in an official statement: "The Arleigh Burke-class guided-missile destroyer USS Preble (DDG 88) will move to Yokosuka, Japan, as part of a scheduled rotation of forces in the Pacific."

At that time, the service stated that the USS Preble would replace USS Benfold (DDG 65), which was scheduled to depart Yokosuka and relocate to Everett, Washington.

The US Navy underscored the significance of the deployment, emphasizing that Preble's forward presence would strengthen the US's national security, strengthen its capability to defend strategic interests, and uphold Washington's commitment to defend Japan.

A military spokesman reportedly said that the USS Preble was the only one of the 73 Arleigh Burke-class destroyers in the U.S. military equipped with a high-energy laser weapon that can be used to bring down drones and missiles. The USS Preble's High-Energy Laser with Integrated Optical Dazzler and Surveillance System (HELIOS) is a 60-kilowatt-class directed energy laser weapon.

HELIOS is a multifunctional system with adequate power to destroy or seriously harm targets like smaller boats and drones. It also serves as a "dazzler" to confuse or blind optical seekers on approaching missiles and optical sensors on hostile ships and aircraft.

The HELIOS system is outfitted with advanced optical sensors, which primarily serve as a precision tool for laser tracking, pointing, and cueing applications. However, these sensors can also be used for secondary surveillance. The integration of HELIOS on the USS Preble has significantly enhanced its combat capabilities.

Therefore, the warship's forward deployment to Japan is a significant development, particularly given China's efforts to outfit its warships with the latest laser weapon.

Last month, a photograph of the Type-071 Amphibious Assault Ship of the People's Liberation Army Navy (PLAN) equipped with laser weapons emerged on social media, triggering speculation that the latest Chinese Directed Energy Weapons (DEWs) were undergoing testing.

It is now widely believed that laser weapons possess the capability to transform warfare and defense strategies. These systems can shoot targets like drones, missiles, and small aircraft at nearly the speed of light while also proving to be more cost-effective than traditional interceptors.

Additionally, since lasers have no 'deployment time,' they are excellent instruments for aerial interception, which makes them ideal for missile defense systems.

When the US announced the deployment of the ship last month, it emphasized without naming any country that "the security environment in the Indo-Pacific requires that the U.S. Navy positions the most capable ships forward. This posture allows the most rapid response times for maritime and joint forces and brings our most capable ships with the greatest amount of striking power and operational capability to bear in the timeliest manner".

Incidentally, the deployment comes in the wake of China's increased military presence near Japan. Last week, for instance, a Chinese carrier strike group took an unusual route on its way to the Western Pacific: it sailed through Japan's contiguous waters for the first time instead of traversing the Miyako Strait, which is frequented by Chinese vessels. Additionally, a Chinese Y-9 electronic aircraft entered Japan's territorial airspace last month.

In recent months, the US has consolidated its military posture in Japan, deploying fifth-generation fighters like the F-22 Raptor and F-35 Lightning II.

With the USS Preble, it appears to be strengthening its maritime fleet for challenges at sea. The US aircraft carrier, USS Theodore Roosevelt, is also reportedly back in the Indo-Pacific and would likely be stationed at the 7th Fleet headquarters in Japan.

Notably, the deployment comes days after the US Chief of Naval Operations (CNO) unveiled the service's Navigation Plan, which served as a guide for dealing with China's growing threat.

US Has A Navigation Plan To Combat China

The US Chief of Naval Operations (CNO), Adm. Lisa Franchetti, released the 'Navigation Plan for America's Warfighting Navy' to the service on September 18.

The plan states that "The Navy shall be organized, trained, and equipped for the peacetime promotion of the national security interests and prosperity of the United States and prompt and sustained combat incident to operations at sea."

The navigation plan lists two strategic goals: strengthening the Navy's long-term advantage and preparing for the prospect of war with the People's Republic of China by 2027.

The plan, also known as "Project 33," focuses on readiness, capability, and capacity while addressing maintenance backlogs and recruiting difficulties. It highlights seven key areas, such as clearing up maintenance backlogs, increasing the size of robotic and autonomous systems, enhancing the recruitment and retention of sailors, and strengthening infrastructure.

Reacting to increased global threats—specifically, those posed by Russia's increasingly aggressive acts and China's developing military capabilities—the plan strongly emphasizes multi-domain operations and technology innovation.

The plan aims to guarantee that the US Navy, propelled by advances in robotics, artificial intelligence (AI), and distributed maritime operations, maintains its leadership via warfighter competency, joint force integration, and readiness. It highlights the importance of proceeding swiftly with these projects to overcome impending challenges and prepare for high-end, protracted combat.

The navigation plan is timely because tensions in the South China Sea and Taiwan Strait are rising, raising the possibility of a regional conflict. As China's threat grows, the US, for one, is putting all of its effort into strengthening its capabilities.

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U.S. Tackles a Military Vulnerability in the Pacific: Supply Lines

(The Wall Street Journal, September 25)

In the remote Australian Outback, U.S. Marines carried supplies off two tilt-rotor Osprey aircraft that had just touched down. Soon after, they hauled giant fuel bladders into position and began connecting hoses and nozzles in the blazing sun.

Their aim in the training exercise: Quickly set up what is essentially a portable gas station close to the front lines so that aircraft can refuel and rearm without returning to larger bases in the rear.

"The hardest thing is just the amount of equipment that's required," said Staff Sgt. Gabriel Castillo, who was overseeing the setup. "There's a lot of moving parts that go into this."

The U.S. military, including the Marines, is shifting its strategy and expanding its footprint in the Pacific to deter Beijing from launching military action to take over Taiwan—and to prepare to fight if needed.

But one of the most important, and at times overlooked, challenges the military is facing is how to get fuel, ammunition and other equipment to front-line units on remote islands or sea lanes far from main U.S. bases, and protecting those supply lines from Chinese attack.

"We've got a problem with contested logistics," Gen. James Rainey, who oversees the U.S. Army command for modernization efforts, said at a recent think-tank event. "The Pacific Ocean is really big, it's far away."

The U.S. is rethinking its military logistics as new threats have emerged around the world. In the Ukraine war, for example, drones are detecting logistics points quickly and many are being destroyed in less than 24 hours, according to one analysis from U.S. Army officers. The Yemen-based Houthis are using missiles and drones to target international shipping, showing how a relatively small force can harass supply lines with modern equipment.

The logistics challenge is particularly acute in the Pacific. Beijing has invested in aircraft, ships, submarines and long-range precision missiles that can strike U.S. bases, runways and convoys. China's cyber capabilities are also a threat. All that contrasts with prior conflicts in Afghanistan and Iraq, where analysts say the U.S. could deploy and supply its forces essentially uncontested.

"The U.S. military is having to consider the real possibility that logistical support systems would be challenged [or] interdicted in ways that no one has been able to threaten since the collapse of the Soviet Union," said Dakota Wood, a retired Marine lieutenant colonel and former senior research fellow at the Heritage Foundation who is now chief executive at consulting firm Hot Gates.

The Pacific's island geography means the U.S. would need to move front-line units and equipment around by sea or air. U.S. plans to spread out its forces in small and mobile groups make them trickier for China to hit, but also add to the challenge of keeping the troops supplied across a vast area.

"Our competitors have been studying us for decades," said Abraham Denmark, who until recently was a senior adviser to U.S. Defense Secretary Lloyd Austin.

"They know how we project power. They've been building their capabilities in a tailored way to undermine our ability to project power," said Denmark, who is now affiliated with the Center for Strategic and International Studies and the Asia Group, a consulting firm.

Some lawmakers are sounding the alarm. A bill introduced by Sens. Mark Kelly (D., Ariz.) and Mitt Romney (R., Utah) would require the Pentagon to put together a report on logistics capabilities in the Indo-Pacific and identify additional resources that are needed.

"You don't have to destroy a battalion of tanks if you can prevent them from getting fuel and munitions," said Colin Smith, a senior international and defense researcher at Rand.

U.S. military officials say they are taking action. The U.S. has sought access to more bases, wants to preposition supplies in key locations, and plans to work more closely with allies to repair equipment. Airfields across the region are being upgraded. Last year, Washington gained access to four more bases in the Philippines.

Cmdr. Matthew Comer, a spokesman for the U.S. Indo-Pacific Command, said every major exercise in the region inherently tests the military's ability to project combat power, as well as conduct logistics with allies. "From transporting equipment, munitions and personnel to contracting fuel and sustainment, logistics remains at the center of every operational capability," he said.

Innovation could help. Drones and unmanned watercraft could move supplies instead of larger ships that could be an easier target. Alternative batteries or fuel could mean having less bulk to move around. Artificial intelligence could better predict when and where supplies will be needed.

Logistics is a key consideration for the Marines, which is reorganizing to be better suited for island fighting. Part of the combat plan is for small, mobile and hard-to-detect teams to move from island to island, where the troops can then use rockets, aircraft and other weapons to deny an adversary's use of pivotal waterways nearby.

Some locations could host portable refueling and rearming points, allowing aircraft to resupply quickly. Although these types of operations aren't new, they are "especially salient" to the Marines' plan for the Pacific, an operating manual says.

"Obviously, the distances from places like Camp Pendleton [in California] and even Hawaii are so long that it would be costly and inefficient" to constantly bring supplies in and out, said Col. Brian Mulvihill, the commanding officer of the Marine detachment in Australia. "So having forward stage capabilities is really important for us."

More work needs to be done. A 2030 logistics plan the Marines published last year said the service's logistics capabilities are "under-resourced and do not meet the demands of our future force to succeed on future battlefields."

"Operating in a highly distributed fashion increases the logistics burden," said Stacie Pettyjohn, a senior fellow and director of the defense program at the Center for a New American Security. "If the forces are trying to move often to make it harder for the Chinese to target them, the supplies needed at a location could vary considerably based on potentially unpredictable movements that change in response to Chinese attacks."

Col. Aaron Angell, the lead for developing logistics capabilities and concepts at the Marines, said there is continuous progress. The Marines are planning to establish a new prepositioned site in the Philippines later this year, he said.

In general, more supplies in the region could be stored on land and at sea, using ships, barges and other mobilefloating platforms, he said. Precision airdrops and unmanned vehicles could deliver equipment under fire without endangering troops' lives. And Marines deployed in austere locations could do more to generate their own resources, perhaps by using renewable-energy sources, waste-to-energy systems or portable water purification units.

At one point, the service sought to reduce the size of the units that support expeditionary airfields and refueling points, he said. But it is now adjusting that decision after it became clear the cuts were too deep.

"Mobility and maneuver in a maritime environment, that's the biggest challenge to us," Angell said.

Not everything went smoothly in the training exercise in Australia. An Osprey flew over the empty fuel bladders, creating a risk that they could get lifted into the air. At one point, fuel squirted out from the refueling setup because of a valve problem.

But the issues were soon addressed.

"There's so many connections in all of this gear," Staff Sgt. Castillo said. "These guys are doing a fantastic job in troubleshooting what's wrong and fixing it on the spot."

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Armor's Worst Nightmare: How China's Kinetic Energy Weapons Are Changing the Game

(SOFREP, September 22)

There's a storm brewing on the horizon of modern warfare, and it's swirling out of the depths of China's think tanks.

A crew of scientists from the China Aerodynamics Research and Development Center, with Huang Jie at the helm, has been cooking up something that's sending shivers down the spines of tank crews and military brass alike.

They're not just theorizing; they're reportedly proving that high-speed kinetic energy weapons could turn the tide in the art of armored annihilation.

The Kinetic Nightmare: A New Age in Armored Warfare

The South China Morning Post report claims that these researchers are looking at solid spheres, 20 kilograms (44 pounds) of pure, unadulterated force, screaming through the air faster than Mach 4.

We're talking about a 25-megajoule punch – that's seven kilowatt-hours of kinetic energy, enough to make any M1 Abrams tank commander sweat in their seat.

Here's the kicker: these kinetic hailstones don't just dent; they devastate. Imagine a tank, your steel fortress, looking pristine from the outside but gutted on the inside.

"The grip of the tank gun stabilizer console can be shaken off, the wiring base of the console pulled out completely, all connections between the fire control computer and the turret severed, resulting in a substantial loss of firepower," the Chinese researchers said.

This isn't your grandfather's artillery; this is a knife slicing through the heart of modern armor, cutting connections, weakening firing control, and reducing a once-mighty war machine to a lifeless mass of metal.

Driving the point home, the squad of researchers laid it out bare: "Components at these locations have a high probability of failure due to overload damage."

This stark revelation punches a hole in the myth of invincibility surrounding these steel beasts.

It's a clear warning – even if the shell looks unscathed, the guts could be scrambled, leaving these warhorses dead in their tracks.

The Human Cost and the Call to Arms

But this isn't just about the tanks, though.

It's about the men and women inside them.

Traditional tactics like facing the threat head-on become suicide missions against this new breed of projectile.

It turns the tank's armor into a death trap, channeling a shockwave of destruction straight into the crew's lap.

And while the scientists haven't painted the full picture of the carnage, let's just say it's not a pretty sight.

But it's not all doom and gloom.

This revelation is a wake-up call, a siren in the night for military minds and defense engineers.

We've seen shifts in the art of war before, and each time, it's a race between the sword and the shield.

High-speed kinetic energy weapons might be the new nightmare, but they also spark a new generation of countermeasures, tactics, and tech.

The chessboard of war is getting a new set of pieces, and it's time to play smarter, not harder.

Adaptation and Evolution: The Future of Warfare

The message is clear for the grunts on the ground, the tankers in their rolling fortresses, and the brass plotting the next move: the battlefield is evolving, and so must we.

It's a challenge to step up, adapt, and overcome.

So, let's roll up our sleeves, dive into the tech, and ensure that when the next kinetic storm hits, we're not just ready but two steps ahead.

Welcome to the new age of warfare, where speed kills, and the best defense is a smarter offense.

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DEPARTMENT OF DEFENSE:

What Are The Implications Of Laser Weapons On Future Aerial Combat?

(Simple Flying, September 25)

Using lasers on the battlefield revolutionized precision munitions and how humans wield weapons. Perhaps more than any other area, the change was most dramatically seen in air-to-ground combat. From high-surgical strikes to close-air support (CAS), laser targeting systems have continued to evolve over the years. Today, laser-based weapons systems have been developed to do precisely the opposite by defeating aircraft from the ground.

Star Wars

The U.S. military's Star Wars program, officially known as the Strategic Defense Initiative (SDI), was launched in 1983 under President Ronald Reagan. Its goal was to develop a comprehensive missile defense system to protect the US from nuclear missile threats, particularly from the Soviet Union.

The Star Wars initiative proposed using advanced technologies, including ground-based and space - based systems, to detect and intercept incoming missiles. A significant focus was given to researchers aiming to create high-energy laser systems that could destroy missiles in flight or disable their guidance systems.

These lasers were envisioned as part of a multi-layered defense strategy, utilizing space-based platforms to target threats in flight.

Despite ambitious plans and substantial funding, the SDI faced considerable technical challenges and skepticism. Critics argued that the technology required was not yet available and that the program could

escalate the arms race. As the Cold War drew to a close, the initiative was gradually scaled back and ultimately abandoned in favor of more practical missile defense systems.

While the SDI did not materialize, it spurred significant research and advancements in lasertechnology and missile defense, influencing future military projects and contributing to ongoing developments in directed-energy weapons. The program's legacy remains a reflection of the era's strategic concerns and technological aspirations.

Lasers in the Battlespace

Lasers have emerged as innovative tools in modern combat, particularly against aircraft, offering precision and stealth in targeting. One common application is in blinding enemy pilots or sensors. High-energy lasers can emit focused beams that disrupt or damage optical systems, rendering navigation and targeting equipment ineffective. This tactic can temporarily incapacitate an aircraft. The most significant use of lasers is in munition guidance. Laser designators are employed to mark targets, allowing precision-guided munitions—such as laser-guided bombs or missiles—to home in on their intended targets with remarkable accuracy. This capability enhances the effectiveness of strikes against high-value or moving targets while minimizing collateral damage.

Directed Energy Weapons

More so today than ever before, laser systems can be integrated into various platforms, including ground vehicles, ships, and aircraft themselves. This versatility allows for flexible deployment in different combat scenarios. The speed of light travel means lasers can engage targets almost instantaneously, making them effective against fast-moving aerial threats.

U.S. directed energy weapons (DEW s) are advanced military systems that utilize focused energy, such as lasers, microwaves, or particle beams, to disable or destroy targets. These weapons offer several advantages, including precision targeting, reduced collateral damage, and lower operational costs compared to traditional munitions.

Lasers, the most prominent type of DEW, can be used for various applications, including air defense, counter- drone operations, and disabling enemy sensors. Microwave weapons can disrupt electronics or incapacitate personnel without causing permanent harm.

DEWs are increasingly integrated into various platforms to enhance the military's ability to counter emerging threats. Ongoing research aims to improve the effectiveness, range, and versatility of these systems, positioning them as a critical component of future military strategy. Overall, directed energy weapons represent a significant shift in modern warfare, focusing on efficiency and precision.

Future Wars

Developing laser weapons can potentially provide a new range of advanced, precise defense capabilities. Their accuracy minimizes collateral damage, making them a more humane option in conflict. Lasers can neutralize threats at the speed of light, enhancing military effectiveness without the need for

conventional munitions. Low operational costs and minimal logistical requirements reduce the environmental impact of warfare. In terms of deterrence, advanced laser systems can promote stability by discouraging aggression. Ultimately, responsible development and deployment of laser technology has the potential to enhance national security while reducing danger to civilians and the environment.

Aircraft can employ several strategies to effectively defend against laser weapons. One method uses specialized coatings or materials that reflect or absorb laser energy, minimizing potential damage. Additionally, high maneuverability enables agile aircraft to evade targeting by rapidly changing speed and direction. Electronic countermeasures, such as deploying decoys or jamming systems, can disrupt the guidance of laser systems. Incorporating advanced situational awareness technology allows pilots to detect and respond to laser threats swiftly. These strategies enhance aircraft survivability in conflict scenarios, ensuring effective defense against emerging laser technologies.

The proliferation of lasers in air warfare could raise concerns primarily due to their increasing accessibility and effectiveness. As more countries develop and deploy laser systems, the risk of these technologies spreading to less regulated areas grows. This could lead to an arms race, where nations feel pressured to enhance their own capabilities in response. Moreover, the low operational costs of lasers make them appealing for various military applications, potentially shifting the balance of power and creating new challenges in air defense strategies. This underscores the need for international dialogue on regulating and managing such technologies.

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Marines to get new drone-killing microwave weapon designed for expeditionary ops

(Defense Scoop, September 23)

Epirus is slated to provide a new drone zapper to the Marine Corps before the end of the year, the company announced Monday.

The high-power microwave weapon prototype, known as Leonidas Expeditionary, is being developed under a $5.5 million contract as part of the Defense Department's Expeditionary Directed Energy Counter-Swarm (ExDECS) initiative.

The Office of Naval Research, Marine Corps Warfighting Lab and Joint Counter-small Unmanned Aircraft Systems Office (JCO) are also involved in the effort, according to a press release.

The U.S. military is looking for more cost-effective tools for defeating enemy drones, especially those launched in waves or swarms. Some officials believe that high-power microwaves could fit the bill.

Monday's announcement comes just a few weeks after the release of Marine Commandant Gen. Eric Smith's new planning guidance, which noted the need for more counter-drone technologies as the service embraces warfighting concepts known as "stand-in forces" and

expeditionary advanced base operations, which would put Marines at risk from adversaries' unmanned platforms and other weapons.

"We must continue to capture the lessons being learned in blood on active battlefields from Ukraine to the Middle East. We should pay special attention to the increasing importance of … the proliferation and effectiveness of drones, loitering munitions, and uncrewed systems," Smith wrote. "We will continue to experiment with and invest in burgeoning capabilities that are defining the modern battlefield such as Ground Based Air Defenses, including Counter-small Unmanned Aircraft Systems (C-sUAS), our own sUAS, and loitering munitions."

Epirus' new solid-state, long-pulse system is derived from the company's Leonidas high-power microwave product, according to the company. Other Leonidas-derived prototypes have been acquired for the Army's Indirect Fire Protection Capability-High-Power Microwave (IFPC-HPM) initiative and the Navy's Advanced Naval Technology Exercise (ANTX) demonstrations.

The Leonidas Expeditionary is designed to be more compact and lightweight than other variants and to fit on a Joint Light Tactical Vehicle trailer, according to Epirus.

"In a basic sense, ExDECS is a scaled down version of the IFPC-HPM systems with roughly 1/3 the amount of [Line Replaceable Amplifier Modules] for advanced mobility," a corporate spokesperson told DefenseScoop.

"Line Replaceable Amplifier Module architecture — what we call LRAMs … serve as the essential 'building blocks' of all our HPM systems," they said. "The LRAM architecture mitigates the risk of a 'single point of failure' — a common challenge for vacuum-tube-based systems — by enabling graceful degradation to maintain operational effectiveness. The LRAM is also, in part, what unlocks unprecedented scalability for our systems."

The company declined to provide the exact size and weight of the Leonidas Expeditionary.

Under the contract, Epirus is slated to deliver one ExDECS prototype to Naval Surface Warfare Center Dahlgren later this year for further testing and evaluation, according to the spokesperson.

The press release said the system will be provided to the Marine Corps Warfighting Lab by the end of 2024.

"The program's future will involve initial integration with the U.S. Marine Corps' Common Aviation Command and Control System (CAC2S), along with field experimentation and multi-platform testing in expeditionary scenarios to enhance USMC's Ground Based Air Defense Capabilities," per the release.

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OTHER FOREIGN COUNTRIES:

Pro-Hezbollah protesters in Pakistan clash with police after being blocked from reaching US consulate

(Reuters, September 29)

Police in Pakistan's southern city of Karachi say seven officers were injured and receiving treatment in a hospital after protesters pelted them with stones as they attempted to reach the US consulate during a protest over Israel's killing of Hezbollah leader Hassan Nasrallah.

Protesters chanted "Death to America," while carrying posters of Nasrallah.

"Police had to resort to baton charging and tear gas against those who breached the cordons in a bid to disperse the crowd," says Police Deputy Inspector General Asad Raza, adding that protesters had tried to reach areas beyond cordons agreed upon with organizers in advance.

He says police will register criminal cases against protesters who acted violently.

Pro-Iran Shi'ite religious political party Majlis Wahadatul Muslimeen had organized the rally of around 3,000 people in the country's most populous city.

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Global study shines light on use of rubber bullets in South Africa

(Cape Times, September 25)

A report by the International Network of Civil Liberties Organizations (Inclo) has detailed that double-ball rounds (rubber bullets), often used during community and labour-related protests, can cause death and serious injury and are described as a "particularly dangerous type of kinetic impact projectile".

While they are considered to be of the "less-lethal" weapons that the SAPS possesses, Inclo's "Lethal in Disguise 2" report on how crowd-control weapons impact health and human rights put the spotlight on three South African cases where two people were killed and one suffered serious injury after being shot with rubber bullets.

Inclo comprises 15 independent national human rights organisations working to promote fundamental rights and freedoms and includes South Africa's Legal Resources Centre.

Detailing separate incidents in 2018 and 2021, a 61-year-old man and 35-year-old man were killed after being shot at close range with rubber bullets.

Thembekile Fana, 61, died during a community protest after being shot at close range when he raised his arms in surrender to police.

In another fatal incident, Mthokozisi Ntumba, a 35-year-old civil servant, was shot and killed in 2021 as he was leaving a medical clinic in the Johannesburg city centre during protests.

Four Johannesburg Metropolitan Police Department (JMPD) officers were subsequently arrested and charged with one count of murder and three counts of attempted murder.

According to the report, an Independent Police Investigative Directorate (Ipid) officer said the post-mortem of Ntumba showed that he was shot at close range.

Cosatu national spokesperson, Zanele Sabela said the report's findings were deeply concerning.

"Rubber bullets are conventionally understood to cause less harm than live ammunition, but this report puts paid to that myth. The over-reliance on rubber bullets as a means of crowd control during protests points to the dire need for proper training in the police service. Cosatu affiliate the Police and Prisons Civil Rights Union (Popcru), has been warning of a skills drain as personnel with highly specialised skills leave the service in droves yearly in search of greener pastures in the private sector," said Sabela.

Manufactured by a number of companies around the world and in South Africa, the use of these "inherently inaccurate" weapons in policing protests and public gatherings has changed the lives of many people in South Africa, both through tragic deaths and injuries, the report detailed.

"Owing to their design, cartridges that contain multiple projectiles are inaccurate. Once fired, the projectiles separate and can rapidly disperse, resulting in unpredictable impacts.

"This inaccuracy only increases over longer distances. As a result of this design, projectiles from double-ball rounds may impact unintended parts of the body, including the head, face or neck, which could cause serious injury. Despite their inherently inaccurate nature, the use of different types of rubber bullets continues to be a key part of police responses to protests and other public gatherings in South Africa," the report read.

SAPS spokesperson Wesley Twigg said they would respond to questions in due course.

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UK Plans to Introduce Its Directed Energy Weapon Against Unmanned Threats by 2026.

(Army Recognition, September 24)

The UK is advancing in its efforts to counter unmanned systems by developing the Radio Frequency Directed Energy Weapon (RFDEW). This system, developed in collaboration between Defence Equipment and Support (DE&S) and the Defence Science and Technology Laboratory (DSTL), is expected to enter service by 2026. Following three years of experimentation, the RFDEW is nearing the end of its development phase and is designed to neutralize a range of threats across land, air, and sea.

The RFDEW uses radio waves to disrupt or damage the electronic components of enemy vehicles, causing them to stop or crash. Designed to counter unmanned aerial systems (UAS), including drones, it is an effective tool to protect the UK's military assets from these threats.

One of its key advantages is its low operational cost. Each shot costs approximately £0.10 ($0.12), making it a cost-effective alternative to traditional missile-based air defense systems. This could reduce military spending related to defending against aerial threats and provide an efficient solution against drone swarms, increasingly prevalent on modern battlefields.

With the development of this weapon, the UK Ministry of Defence is addressing the need to counter asymmetric threats posed by UAS. The system can detect, track, and engage a variety of targets and could become an essential asset for the UK's armed forces. The expected 2026 deployment marks a significant milestone in the development of non-kinetic defense technologies.

On May 16, 2024, the British government revealed significant progress with the RFDEW, which is part of Project Ealing aimed at enhancing military capabilities in an era of technological warfare.

Defense Procurement Minister James Cartlidge emphasized the importance of the RFDEW, stating that technologies like this increase the effectiveness and protection of British personnel while maintaining the UK's leadership in military innovation.

The system emits targeted radio waves that interfere with the electronic components of drones and other enemy devices. With a range of one kilometer, efforts are underway to extend its reach. Its cost-efficiency, with each activation costing only 10 pence, offers a more economical alternative to traditional missile systems.

Developed in collaboration with the Defence Science and Technology Laboratory (Dstl), Defence Equipment & Support (DE&S), and UK industry, the RFDEW is undergoing rigorous field testing. Mounted on various military vehicles, it can engage multiple targets, making it a key element in the UK's strategy against unmanned systems.

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Azerbaijan Presents Fireforce C-UAS Laser System

(Miletarnyi, September 24)

Azerbaijani designers have demonstrated their first air defense laser system called Fireforce at the international defense exhibition ADEX-2024, which takes place in Baku.

This is reported by the Azerbaijani edition of Report.AZ.

The 30-kilowatt system is designed to intercept unmanned aerial vehicles.

According to the developers, the range of these light drones is about 1000 meters.

The drone itself weighs 900 kilograms and is mounted on the chassis of a Toyota Hilux armored SUV.

The developers mentioned that another system with a capacity of 50 kilowatts is being developed in parallel with the presented system. It will have greater potential and enhanced target interception capabilities.

Potential of laser weapons

To understand the potential capabilities of the laser weapons, we can refer to the British DragonFire system, which has a similar power level.

Developed by MBDA UK, Leonardo UK, and QinetiQ Group, the system destroyed a drone and caused an artillery mine to explode in less than five seconds during tests.

To inflict the damage, the system irradiated the target for five seconds during its flight.

The dimensions of the 50-kilowatt units are comparable to the size of sea containers.

The same system can also demonstrate the low cost of using laser weapons: according to the British Ministry of Defense, the cost of a shot is approximately GBP 10.

The South Korean government has recently signed an agreement to supply Block-I laser air defense systems to protect the country from North Korean drones.

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