



C-Note #10

A MESSAGE TO THE FLEET FROM THE CHIEF OF NAVAL OPERATIONS



DIRECTED ENERGY

For decades, directed energy has been described as a future capability. That future has arrived. High-energy lasers and high-power microwaves are becoming essential elements of naval warfare, providing the Fleet with new ways to defend itself, preserve combat power, and sustain operations during prolonged conflict. The question is no longer whether these systems work — it is how quickly we can field them across the Fleet and place them in the hands of Sailors. For too long, we have viewed directed energy as an emerging technology rather than an operational capability. That must change.

\\ Tailored Effects

Unlike conventional weapons, directed energy converts electrical power into concentrated energy to produce scalable combat effects. Depending on the target and desired outcome, these systems can disrupt sensors, defeat seekers, disable unmanned systems, damage small boats, or destroy aerial threats. They provide commanders with additional options to tailor effects while preserving finite kinetic weapons for the most demanding engagements.



\\ Electrical Power is Combat Power

Directed energy operates at the speed of light, allowing Sailors to engage threats rapidly with precision and reduced collateral damage. Because these systems rely primarily on shipboard electrical power rather than finite missile inventories, they fundamentally change how naval forces sustain combat over time. Electrical power is becoming combat power. How we generate it, store it, distribute it, protect it, and employ it will increasingly determine our combat effectiveness.

\\ Defeating Modern Threats

Potential adversaries increasingly rely on massed, low-cost drones, attritable systems, and coordinated saturation attacks designed to exhaust traditional defensive magazines. In many cases, the cost of defeating these threats with conventional interceptors greatly exceeds the cost of the threats themselves. That exchange ratio favors the attacker unless we change the equation.

\\ Combat Endurance

Directed energy helps restore that advantage. By converting electrical power into combat effects, commanders can defeat many threats while preserving missiles for the most dangerous targets. Combat endurance becomes a weapon in itself. Every interceptor preserved for the high-end fight increases our ability to remain in the fight longer, protect the force, and retain offensive flexibility.

\\ Point and Terminal Defense

The most important near-term role for directed energy is point and terminal defense. Current and emerging systems are particularly well suited to defeating most unmanned aerial systems, small boats, surveillance platforms, and selected cruise missile threats while disrupting or blinding adversary sensors and seekers. These capabilities will protect ships, logistics forces, expeditionary bases, ports, and distributed maritime forces operating across contested environments.

\\ Tactical Decision-Making

Directed energy also changes tactical decision-making. Commanders will increasingly determine which threats require kinetic engagement and which can be defeated through directed energy. Preserving high-end interceptors for the most lethal threats expands tactical options, improves magazine management, and increases combat persistence throughout the fight.

\ \ Future Combat

As directed energy matures, future combat power will increasingly be measured not only by missile cells and advanced sensors, but also by available electrical power. Ships with greater power generation, integrated power systems, cooling capacity, and flexible power distribution will possess greater capacity to integrate advanced sensors, artificial intelligence, computing, and future directed energy weapons throughout their service lives. Designing ships for energy margin is designing them for future combat.

\ \ Fleet Learning

To accelerate Fleet learning, we must aggressively pursue containerized directed energy systems that can be rapidly deployed across multiple ship classes. Containerization shortens fielding timelines, simplifies installation, improves sustainment, expands operational flexibility, and enables continuous Fleet experimentation. It should become another key element of our broader Containerized Capability Campaign, allowing capability to move faster than traditional acquisition cycles.

\ \ Important Advances

Some of the most important advances in directed energy will not come from laboratories – they will come from Sailors operating these systems at sea. Operational employment, experimentation, and feedback from the Fleet will shape future tactics, techniques, procedures, and capability development far faster than testing alone. We must put capability in the hands of Sailors early and learn by operating.

\ \ Military Value

Our competitors are investing heavily in directed energy because they understand its military value. We cannot be satisfied with demonstrations or limited deployments. The Foundry must accelerate innovation in advanced optics, power generation, energy storage, thermal management, and manufacturing while our acquisition community rapidly delivers operational capability to the Fleet. The Fleet must aggressively integrate these systems into training, planning, and layered defense so they are combat-ready on day one of conflict.

\ \ Directed Energy is Real

Sailors should understand that directed energy is real, operational, and increasingly important to the future fight. Success will depend not only on technology, but on disciplined maintenance, realistic training, tactical innovation, sound judgment, and operational integration.

ADVANTAGE AT SEA

The future fight will reward the Fleet that sees first, decides first, delivers effects first, and sustains combat power longer than its adversary. The Fleet that can generate electrical power, convert it into combat effects, and adapt faster than its opponent will hold the advantage at sea. Directed energy is a critical step toward building that future Fleet.

BUILT IN THE FOUNDRY - TEMPERED IN THE FLEET - FORGED TO FIGHT.



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