

This copy is for your personal, non-commercial use only. To order presentation-ready copies for distribution to your colleagues, clients or customers visit <https://www.djreprints.com>.

<https://www.wsj.com/articles/a-good-battery-is-the-best-defense-against-a-military-assault-11617136935>

OPINION | COMMENTARY

A Good Battery Is the Best Defense Against a Military Assault

If China maintains control over the supply chain, it will be able to deny power to advanced U.S. weapons.

By Arthur Herman and Nadia Schadow

March 30, 2021 4:42 pm ET



The deck of the USS Makin Island as it sails in the Arabian Sea, March 19.

PHOTO: ETHAN JAYMES MORROW/ASSOCIATED PRESS



Listen to this article
5 minutes

The massive push toward electric vehicles presents risks and opportunities for America's military. As adversaries make it harder for U.S. forces to reach and operate across long distances, the energy provided by advanced batteries can help the Pentagon achieve its multiple missions. This requires a secure innovation and production base for advanced battery technology, something the U.S. doesn't have at the moment.

In 2008 Congress directed the Pentagon to create an office for "operational energy" to address the use of energy on the battlefield. The priority then was to reduce the Defense Department's huge energy bills of around \$20 billion a year. During one five-year period at

the height of the wars in Iraq and Afghanistan, more than 3,000 American soldiers and contractors were killed in fuel-supply convoys. As Marine Gen. Jim Amos observed, the Marine Corps' "thirst for liquid fuel" came at a heavy price.

In recent years, the Defense Department has revived its focus on operational energy to explore how new sources—especially batteries—can improve the military's ability to sustain its platforms, weapon systems and soldiers in the field. Air Force Lt. Gen. Clinton Hinote recently observed that energy was still a "primary limiter to the types of operations that we're able to do."

Better batteries will help the Navy with the development of everything from small undersea drones to "robot submarines" that can counter enemy efforts to keep U.S. warships far from their shores. These unmanned underwater systems, which come at a fraction of the cost of manned ones, can perform more dangerous missions and operate closer to shore.

NEWSLETTER SIGN-UP

Opinion: Morning Editorial Report

All the day's Opinion headlines.

PREVIEW

SUBSCRIBE

Energy-dense lithium-ion batteries will enable the military to deploy new directed-energy systems that work by converting electrical power into high-energy laser beams. This isn't Star Wars, but as one industry expert noted, "In five years, any large base that needs to defend its assets will have laser weapons, regardless of service." Since laser weapons rely on power sources with a very high energy density, their future applications will depend on battery innovation and procurement.

Advanced batteries can also help the military conduct "distributed operations," a war-fighting concept that allows for small and highly capable units to be decentralized and spread around a large area of operations—making it harder for enemies to target them. The Marines in particular have explained that deterring Chinese aggression requires being able to spread out its forces across the Indo-Pacific region. "Advanced batteries are one big thing that enables distributed operations, since we need the increased range of weapons without

the traditional logistical tail,” said Jim Caley, director of operational energy for the Navy. Moreover, when deployed in these environments, batteries will help soldiers operate in “silent watch” mode, since batteries are quiet and lack the heat signature created by regular engines.

Space is now crucial for military operations, not only for Global Positioning System navigation and communications but also as a strategic domain in its own right. Satellite systems rely on advanced batteries. All power used by satellites is drawn from batteries that are recharged via solar panels or similar technology. Some of these batteries, such as those used by the International Space Station, can be massive. The space station just discarded a 2.9-ton pallet of used batteries into space this month. Smaller and more efficient batteries mean less junk launched into orbit. A new generation of satellites built around more efficient batteries will transform the commercial and military approach to space.

Currently, China dominates the entire battery supply chain—from mining to processing to final production. Developing advanced battery technologies has been a priority of the Chinese Communist Party since 2001. The U.S. has some catching up to do. America’s political and military leaders need to get serious about bringing battery supply chains back to the U.S. Breaking China’s dominance over the supply chain will require the Defense Department to work closely with battery manufacturers and other parts of government, such as the Energy Department, to reshore this key part of America’s defense innovation base.

The stormy meeting in Alaska between U.S. and Chinese officials earlier this month is a reminder of how high stakes superpower competition can be. Even as the two countries jockey for position on issues ranging from Hong Kong to 5G, the development and manufacturing of batteries is likely to emerge as a modern-day arms race.

Mr. Herman is the author of “Freedom’s Forge: How American Business Produced Victory in World War II” and a Hudson Institute senior fellow. Ms. Schadlow is a Hudson Institute senior fellow and a visiting fellow at the Hoover Institution.

Appeared in the March 31, 2021, print edition.

