

FTCN Replay: US Demonstrates Advanced EW Capabilities in Venezuela, Directed Energy Industry Matures

The recent US military operation to apprehend Venezuelan dictator Nicolás Maduro showcased American forces' sophisticated electromagnetic warfare capabilities while highlighting growing opportunities for directed energy weapons on modern battlefields, according to two defense experts on a recent episode of the [From the Crows' Nest](#) podcast with host Ken Miller.

Operation Demonstrates EW Superiority

Journalist Mike Fabey, who covers defense for [Janes](#), joined Miller first and described how EW systems played a crucial role in the Venezuela mission's success. EA-18G Growler aircraft were deployed to neutralize Venezuela's Russian-supplied defense systems before ground forces moved in.

"They wanted to get in there clean and get out clean, and one of the most important things about that is to make sure that they take out the systems that are going to basically find, discover, detect, and then target any kind of forces you have coming over that way," Fabey explained. The operation required months of preparation, with forces ready and waiting for the presidential order that came just after New Year.

The operation validated years of investment in carrier strike groups and specialized aircraft. Fabey emphasized that the mission demonstrated that US systems "actually work" as designed.

“You took a bunch of Growlers off that carrier, put them out over this, and took care of business,” he said. “So in other words, operate exactly how they’re supposed to operate.”

The success sends a clear message to adversaries worldwide, particularly China. Fabey stressed viewing the operation within a broader context of US military actions in the Red Sea and Iran. “Around the world, the US has been showing we’re willing and capable of executing missions like this across the globe,” he said. “That is a clear message to China, for example, saying we are willing to do things and we are capable of doing things.”

Directed Energy Gains Momentum

The episode’s second segment featured Dr. David Stout, Executive Director of the [Directed Energy Professional Society](#), who provided an optimistic outlook for directed energy weapons in 2026.

Stout highlighted that the Pentagon’s research and engineering leadership recently streamlined their priority technology areas from 14 to six, with “scale directed energy” making the cut. “So directed energy is going to remain a thrust area in R&E,” he said. “And what I’ve been hearing is that should have a positive impact on the budget.”

The proliferation of drones and drone swarms, particularly in Ukraine, presents an ideal opportunity for directed energy systems, Stout said. Traditional kinetic weapons face challenges against these threats.

“The kinetic community, missiles, guns, what have you, is challenged pretty good by the drones and drone swarms that are now certainly very prevalent in the Ukraine war,” Stout explained. “So I think this is a time for really both more conventional electronic warfare as well as directed energy warfare.”

He noted that some drone tactics, like fiber control, close electronic attack vectors. However, swarm communications open new opportunities for EW. "There's interdrone communications that are required for them to function as a swarm, and I think those could be avenues for attack with electronic warfare," Stout said.

Industrial Base Playing Catch-Up

While technology advances continue in laser diodes and fiber lasers, with electrical and optical efficiencies exceeding 40%, the industrial base faces challenges scaling production. Unlike the mature electromagnetic warfare industry with decades of fielded platforms, directed energy remains in its early stages.

"The industrial base is pretty taxed," Stout acknowledged. "Industry is sort of, I would say, dabbling and staffing up in their ability to address the needs."

The demand signal from warfighters has never been higher, with several programs approaching program-of-record status. However, Stout cautioned industry about pricing: "I would ask that they don't try to recoup all their IRAD first go around. We have to keep the prices reasonable. Otherwise, we're not going to be able to get our foot in the door."

Building Collaboration

Stout emphasized the importance of collaboration between the directed energy and EW communities, noting increased integration at conferences since 2018. "From my standpoint, it's all EMSO whether you're talking electronic warfare or directed energy warfare, it's all electromagnetic spectrum operations," he said.

A key challenge remains educating leadership about these complex technologies. "Leadership understands a high energy laser. It's effectively a blow torch at a distance," Stout

explained. "When you start talking electronic attack, when you start talking high-power microwaves and coupling in the targets and exploitation of targets, I think some of the issues that the AOC and the EW community suffer from and that the HPM community suffers from is it's very complex."

As both communities work toward getting capabilities into warfighters' hands faster, the Venezuela operation serves as a powerful reminder of what sophisticated electromagnetic warfare can achieve when properly integrated into military operations.