Association of Old Crows

Executive Summary

Trends in Airborne Electronic Attack

The AOC recently briefed the congressional EW Working Group, (EWWG), led by Representatives Rick Larsen (WA-02) and Todd Young (IN-09). More than 20 offices were represented from congressional districts home to many EW centers of gravity. AOC was invited to share trends in airborne electronic attack (AEA) and issues that Congress should take the lead in addressing in the coming months.

The briefing identified three overarching issues. The first is that AEA continues to be a strategic advantage for the United States; however, austere budgets, fragmented services plans, and competing self-protect strategies are degrading capabilities development, making it a challenge to stay ahead of the technology curve. Second, deficiencies in EW leadership throughout the Defense Department continues to undermine joint efforts to reduce capabilities overlap. Finally, foreign threat advancement and technology development, driven by commercial off-the-shelf (COTS) technology, is moving at a much faster pace, which is challenging the ability of the United States to responsively field EA countermeasures.

Each of these trends is tightly tied to the realization that electromagnetic spectrum control (ESMC) is critical for all military operations. The explosive growth of electromagnetic spectrum (EMS) users - military, civilian, and adversary - is pressuring the need for spectrum management and EW to control the EMS as a maneuver space. Therefore, AEA is a significant EW mission that not only offensively supports military operations, but also provides defensive protection in threat areas.

> "...it's not just about combining capabilities and operating effectively with each other. It's about operating together to produce an effect greater than any individual Service can produce, or simply the sum of Service EW capabilities."
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> -Rep. Joseph Pitts, Founder, EWWG

The history of AEA is one of peaks and valleys during combat and peace, respectively. Today, the U.S. is transitioning from a "peak" time when successful AEA saved countless lives in Iraq and Afghanistan and enabled U.S. forces to operate in a challenging terrain and a congested EM environment. Unfortunately, the historic ability to quickly field AEA solutions to counter threats has made EW, in general, a victim of its own success. Rapid advancements in peer technology, the global proliferation of sophisticated air defenses, aging U.S. military systems, and a dramatic increase in the demand for AEA makes this historical cycle unsustainable. There is an urgent need to sustain investment in AEA programs, and the EW mission in general; close persistent capability gaps, especially in leadership; and develop a comprehensive strategy for the EMS and EW to grow our strategic advantage in AEA, cooperatively operate in the EMS, and coordinate the development of complimentary AEA systems throughout the Services.

A positive trend toward this end is the increasing level of awareness about the need for and state of AEA capabilities. Over the past decade there have been a series of studies that show a progression toward more senior levels of decision-makers grappling with this very issue. Over the

last several years, efforts by US STRATCOM, the congressional EW Working Group and the defense committees of Congress, the Government Accountability Office, and presently, the Defense Science Board under the direction of the Under Secretary of Defense for AT&L have all addressed the need for sustained and coordinated investment in AEA. However, leadership is more than senior leaders raising awareness, it is joint action to harmonize capabilities, process development, DOTMLPF management, and advocacy.

In light of these general trends, each Service faces its own unique set of pressures in the employment of AEA assets and capabilities. The AOC focused most of its presentation of Service AEA employment on the Air Force and Navy, leaving discussion of the Army and Marine Corps to a forthcoming EWWG policy brief. For the Air Force, the Service has modified AEA plans over the past 20 years. It once focused on centerpiece aircraft and "big-war" concepts, but they are now reshaping their paradigm toward contributing a number of embedded elements to the overall EW mission. The Air Force will continue to rely on stealth capabilities and the venerable Compass Call aircraft, but augment these assets with pod systems and decoys, such as the Miniature Air-Launched Decoy (MALD), and fighter aircraft equipped with AESA radars, which when combined with a techniques generator that produces unique waveforms and algorithms can serve as a powerful weapon for AEA.

The Navy is completing its wholesale transition from the EA-6B Prowler to the EA-18G Growler and increasing the overall buy to 135 aircraft, up from the original plan of 88 aircraft. Additionally, the Navy is moving forward with the Next Generation Jammer (NGJ) to replace the Growler's ALQ-99 jamming pod, an aging holdover from the Prowler AEA suite. Other programs that were highlighted include the Tactical Air Launch Decoy (TALD) to degrade enemy air defense systems, and the Advanced Anti-Radiation Guided Munition (AARGM) to counter enemy radar technology.

The AOC also discussed the nexus between EW and cyber. The insertion of cyber code using AEA assets and capabilities to disrupt enemy fire control and weapons employment is quickly becoming a new technique that serves to elevate the value of traditional EA.

In closing, the AOC identified three key issues that warrant congressional attention. First, for the U.S. to retain its strategic advantage in AEA, there is a need for sustained and coordinated investment in advanced technologies to counter emerging threats. Second, it is critical to close the leadership gap by working with the Defense Department to develop plans for designated, joint EW leadership to monitor, inform, guide, consolidate, and optimize service EW acquisition. And, finally, it is necessary to improve identification of threat priorities and provide for more rapid fielding of responsive techniques and capabilities. The AOC is dedicated to working with the EWWG, the Defense Department, and industry to ensure these issues receive coordinated and meaningful attention and action in the near future.