

A Time of Change

BY RICHARD POWERS

Editor's Note: *This is the first installment of a new semi-regular column in JED that will look at the business side of EW. What makes a successful strategy and what doesn't? How do various DOD policies incentivize certain industry sectors or not? With the DOD's recent acquisition reforms, these types of questions have become more important than any time in living memory. I hope you will enjoy this series, and I hope you will occasionally take time to provide ideas and feedback to help make this series a valuable forum for industry and DOD alike.*

This month we introduce a new column where you, the AOC membership, will have the opportunity to contribute to its contents. Typically, *JED* focuses on new technology, operational developments, and industry news, but we do not spend much time assessing the performance of our industry. As we all know, the defense industry is plagued with frustrating delays and deep cost overruns, and the price tag for large weapons systems is eye-watering. Norm Augustine's "Law 16" about the cost growth of a fighter appears to be coming true if NGAD is indeed \$300 million a copy.

The history of EW acquisition programs, in particular, has its share of long delays and steep cost growth; many of us have these program names at our fingertips. However, this column is not focused on calling out specific programs, companies, or customers. Instead, we want to understand the underlying causes of these struggles, learn from them as a whole, and share what works to prevent or to solve a deeply troubled program.

Why this column now? In addition to the traditional program challenges, the defense industry is going through profound change with the rise of venture-funded "neo-primers," and DOD's strong interest in them, which is enabled in part by Secretary Pete Hegseth's instructions to increase the use of non-FAR Other Transaction Authority (OTAs). We'll get into OTAs later in this article. But it's worth stating that for industry, OTA acquisition programs carry significant up-front expenses that will stretch and perhaps break some organizations, and

this reality affects which companies are willing to pursue these programs.

Therefore, the EW industry should look at itself and ask how we can learn from our past, take advantage of these technology development and systems acquisition lessons, examine the risks of the changing environment, and deliver the EW technologies the warfighter needs in a more timely and cost-effective manner. If we don't, many of our key EW programs – badly needed by the warfighter – may find themselves on the Pentagon's cutting room floor.

It is facile to blame the legally mandated government process for all our problems. As an industry, including our acquisition partners in government, we need to ask ourselves, how can we do better to prevent delays, overruns, and cancellations? Where do the problems start? *When* do they start? In hindsight, as during root-cause analysis or program post-mortems, we can identify problems and call them lessons learned. But then history repeats itself on the next difficult program. Is it because these were lessons learned or only lessons observed? Or is it simply the pressure of competition driving down the winning bid to something that is no longer executable? As

government staff and SETA support become smaller, their ability to set achievable requirements that fulfill warfighter needs over time and evaluate proposals becomes that much more difficult. How do we in industry better help the government make new starts more executable with realistic objectives that fit the available budgets while not compromising our individual competitive positions or their need for full and open competition?

If we are going to be doing more OTAs rather than well-funded CPFF development, more risk gets transferred to industry, so actually learning the lessons and passing down whatever wisdom we can gain to the next generation is more critical than ever. Meanwhile China, Russia, Iran, and North Korea continue their march toward a repeat of history, and there are no Churchills or FDRs in sight. Nor is the arsenal of democracy prepared to go from a near cold start (in many new technology areas) to enormous production almost overnight, as we did in the 1940s – although some of the neo-primers appear to be making bold attempts.

Another goal of this column is to look at the development process, determine where mistakes are most often made, and see whether there are good ideas to generically fix some of the root causes. We'll generically explore why some EW programs were late, over cost, or failed to meet all of the requirements, and what was done to save them. Notice we say generically. What this column will not be is a forum to call out specific programs, companies or customers. We simply want to find good ideas for general

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improvement of our industry and share them with you.

We solicit your individual, private thoughts, which can be submitted to this publication via an anonymous survey as “deep background.” (My e-mail address is listed at the end of this article. Please email me from a generic account and I will send you a copy.) In journalism, “deep background” is defined by the Associated Press as “the information can be used but without attribution. The source does not want to be identified in any way, even on condition of anonymity.” We commit to anonymity: I will pool your comments with others, any identifying information will be removed, and nobody will be thrown under a large moving vehicle.

Enough with the introduction. Next, we will focus on a particular concern: the goals and unintended consequences of using OTAs for major procurement decisions.

Other Transaction Authority

The defense industry landscape is going through profound change with the rise of venture-funded neo-primes, and DOD’s strong interest in them, which is enabled in part by Secretary Pete Hegseth’s instructions to increase the use of non-FAR Other Transaction Authority (OTAs).

At the risk of stating the obvious, the relationship between the United States government, typically as represented by

DOD, is what economists call a monopsony. A monopsony is defined as a market situation where there is only one buyer. In the US, that one buyer sets all the rules (FAR, OTA, etc.) and ultimately sets the maximum price (via the POM and then the Congressional authorization and appropriations process), as well as the requirements, which do not always match the desired price. Traditional acquisition is a ponderous process that is at times a cause for program delays, overruns, and failures. Using OTAs is not a panacea, and perhaps at times of questionable legality relative to the original intent of OTA legislation.

Does the OTA process level the playing field or does it tip it in a different direction? Perhaps it depends on the situation. Certainly, the traditional big primes have had it their way for a long time; the barriers to entry were high, and one can argue that the cost and schedule results have often been far less than satisfactory. The VC-funded neo-primes are breaking down those barriers and appear to be moving at a faster pace, which is fantastic given the threats we face; and the OTA process does provide them with more flexibility when coupled with their ability to massively invest to accelerate development and build new facilities. But are there instances where it may not be in the best interest of the warfighter to have the field tipped in either direction?

Under the first Trump Administration and the Biden Administration, we were

already seeing the increased use of the OTA process to make EW acquisition decisions, and it is reasonable to assume more are coming. The OTA process, especially when it devolves into “bring your equipment to this facility or range on this date and we will test it” – where the government is paying perhaps 50% or less than what it really costs to meet their stated requirements – already represents a financial challenge for industry. Traditional contractors are required to pay one-third of the cost of an OTA; but this is a minimum, and the real investment to win can be much higher. Increased OTA use will stretch and perhaps break some organizations, while others, including non-traditional entrants, may thrive – so long as venture capital is available and these investors have the patience to wait for the eventual production award, which often slips out in time.

From conversations with industry colleagues and in reading about Congressional concerns regarding the use and possible over-dependence on OTAs, we have a fictional story (based on real life stories combined from multiple programs and companies) about one possible negative side effect of using OTAs to circumvent the bureaucratic sluggishness and slower schedule of FAR-based procurements. The column is committed to anonymity of sources, programs, of the companies involved, and of the government agencies, hence this mildly fictional

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story about an industry EW group whom we will call our *protagonist*.

Long ago, the protagonist, then a small independent company, created a highly effective EW system that the users swore by (rather than swore at). It worked, it was reliable and supportable, and the company did not gouge the government on Engineering Change Proposals (ECPs). Updates kept the product current with the threat. While the architecture and technology were eventually getting a little long in the tooth, another round of affordable ECPs could keep the product relevant well into the next decade. Like all of us, this EW group had its missteps, delays, and overruns, but their customer community knew they could depend on these people. A panic call to the program manager at 2230 on a Sunday night would result in an engineer catching a flight first thing Monday morning, and the problem was often solved that same day.

Skip to the present moment. This small EW shop, started by visionaries decades ago, had the recurrent and painful experience of repeated acquisitions and mergers, and now finds itself a tiny, lonely outpost a continent away from a giant corporate headquarters, with nearly no voice nor influence. It “integrated” into a nearby corporate division that has nothing to do with EW, and those people gained control over the combined group, which was also a root cause for their EW missteps (we’ll talk about this more in a future column on M&A). The division leadership brought with them no EW knowledge, no desire to learn, and an archaic product line that eventually proved to be a financial disaster for the big corporation, giving everyone at this remote EW site a bad name internally (except for those who actually caused the problem, of course).

In this weakened internal position, the primary customer starts a competitive, multiple-award, four-stage OTA procurement for the next generation EW system with complicated multi-purpose requirements. But the government funding is inadequate relative to the requirements. A traditional contractor must put up at least one-third of the cost of an



OTA. Estimates of what it would take to satisfy technical and demonstration requirements relative to the government’s budget per award led to the conclusion that winning would take far greater than one-third contribution, and the return on investment was decades away.

Along comes a non-traditional neo-prime – a new entrant in this EW area with deep venture-capital pockets, but little EW experience. There is also another traditional valid competitor with relatively deep pockets and credible EW capability, although with a reputation for “buying-in” and then gouging the customer later. There are other EW shops in adjacent markets who want to play, although a hard-nosed business development assessment would expect that the top three slots are pre-ordained. The underfunded government procuring agency lays out a four-year OTA development program that ultimately down-selects to one supplier for the follow-on production phase.

The first two rounds of the OTA process whittle the field down to the pre-ordained three players, two of whom are qualified to compete, and our very political non-traditional player with deep pockets. This burns over a year and costs each of the three competitors a non-trivial investment writing white papers and supporting field demonstrations, rather than actually advancing the technology. Our protagonist EW shop manages to beg and shame his big corporation into providing just enough (the one-third share) to play. And during the first demonstration, according to official and private feedback, our protagonist far outperforms everyone on the field on what is a shoestring budget relative to the requirements.

With success as ammunition, our protagonist again manages to beg and shame the big corporation into continued minimum funding for the next phase, but management knows this is about the survival of this product line and is not a great return on investment, so the investment is “off-again, on again,” and it could be killed at any moment. The team knows they are hanging on by a thread. Our protagonist does an honest competitive assessment that includes excellent competitive intelligence that shows the other competitors are heavily “buying in.” Management is informed that the probability of winning is low and business alternatives are suggested and ignored, but the decision is made to continue at the minimum required one-third funding and hope for the best. Some people depart the EW shop as a result.

Our story enters into the next two phases of the program: Preliminary Design Review and Critical Design Review (PDR and CDR). By formal and private feedback, our protagonist – which was the initial front-runner but was also the one with the least corporate funding – following CDR is now in third place. Because of their deep understanding of the mission and threat, they then produce quality test results despite having been significantly outspent by their competitors. But the competition is far from over, and the well-resourced competitors might have much more to show at the upcoming final and deciding series of tests and demonstrations. And the neo-prime may gain more credibility in the final analysis because of the big prime’s lack of interest in this little remote product line and the steady erosion of engineering talent within the team.

The likely result of the process is that our little protagonist that is buried within a big prime will disappear if they do not win this competition. The big corporation exiting this business and closing this location becomes a probable and reasonable business decision. Or, key engineers and program managers, seeing no future, decide to move on; they feel little loyalty to their parent company. Either way, a group of people skilled in a complex, wideband and dense signal environment niche – arguably the best in the nation at what they do – who have been dedicated servants of the warfighter, will disappear and scatter to the four winds. The company's EW system that is now in the field and which must last another decade will become unsupportable.

The VC-funded non-traditional companies are making significant strides in many areas from components to unmanned fighter aircraft enhanced with AI. They are forcing the lumbering giants to rethink their approaches, but the reality is that a large, traditional defense contractor, restricted by FAR as to what they can charge and recover. Despite beliefs to the contrary in some circles, the big prime simply does not have the financial resources to fund very many OTA "opportunities," especially to the level required to win against a well-funded, targeted campaign by a non-traditional entrant. If more EW programs become OTAs, and venture capitalists continue to see DOD as a place to invest, it might be great for innovation, but the problem we speak about here only gets worse, perhaps to

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the permanent damage of the traditional defense industrial base.

Maybe this is simply survival of the fittest, but the negative impact might disproportionately fall on those innovative little shops that are repeatedly acquired by bigger and more bureaucratic traditional contractors, and then neglected (a topic for our next column). While we all know the problems the traditional EW companies can have, many of those problems are rooted in the constraints put on them by the government monopoly. But at present, many of these constraints are not placed on the VC-funded innovative entrants.

The OTA upside is that non-traditional players, their VC funds, and their innovations are brought into the defense industry, and this will be of benefit to the nation. But, what are the risks? We might not discover for another decade that some cannot deliver repeatable, reliable capability after the transition from OTA to FAR-based full-scale development and production. The learning curve from

developing an EW system prototype to actually meeting MTBF, or on-schedule firm-fixed-price (FFP) full-rate production, or all of the other things required for a militarily useful product is steep. Or perhaps the neo-primes are right in their assertion that the cost and schedule overrun problems are of the big primes' sluggish own creation.

Meanwhile in our story, a reliable traditional EW supplier will have been driven out of the business. Is there a happy middle ground somewhere? Our protagonist attempted to find this middle ground and tried to team with the neo-prime but was thoroughly rebuffed. Would the government get a far superior product if the two organizations could have found a way to work together, or would the cultural differences and business methods and objectives may have made such a collaboration difficult without strong corporate commitment by both parties and empowered project execution leadership?

While the OTA route is understandable from the underfunded government customer's viewpoint, might there have been a more practical alternative that could be fielded faster? Perhaps just a fraction of the OTA funding might have been adequate for comprehensive ECPs of the existing product, which would have met well over 80% of the stated requirements and maintained effectiveness for 10-15 years. Plus, the big company might have been more willing to commit to invest in the upgrades, given the return on investment was far more probable.

The unintended consequences: A highly capable EW engineering team



vanishes and ceases to be able to support the warfighter for this mission. The industrial base for this capability is permanently degraded by approximately half, never to recover. Equipment in the field intended to last another decade is almost immediately unsupported, despite the likely promises from the big company's "mother ship" to move the capability to their headquarters and staff it with people there (probably a recipe for cost overruns and schedule delays).

In another scenario, perhaps there will be better outcomes, because our protagonist may well pull off the best final demonstrations. But our story is intended as a caution. OTAs are a great means of accomplishing their intended purpose, but not all procurements are best served by using them. The impact of VC-based deep pocket new entrants on the existing industrial base and the risk of non-performance beyond the OTA needs more consideration and perhaps a way to level the playing field in a different dimension, which might make it easier for the small, specialized group within a large traditional company to be more agile despite the big corporate bureaucracy and FAR constraints. Here is a place where your feedback as a JED reader, whether you are from a small (and sometimes ignored) element within a traditional EW prime, a new entrant disruptor (i.e., a neo-prime), or the military/government buyer, is strongly desired.

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The constant stream of mergers and acquisitions is also a contributing factor here. Although not detailed in this article, the slow internal destruction of our fictional protagonist EW shop, which might be considered a national asset for a particular mission area, is also due in no small part to the consequences of repeated acquisitions. This is a topic for future op-ed columns. M&A can be done right and there are many excellent examples, so we hope to hear both sides of that story too.

What Do You Think?

We solicit your thoughts on any relevant topic of interest to improve the performance of our community, which can be submitted to the author at richard.l.powers08@gmail.com. We commit to deep background anonymity: I, as the author, will pool your comments with others, and any identifying information will be removed. Government and corporate entities, whether spokespersons or senior leadership, that wish to contribute to this effort in writing or via interview are most welcome and will be acknowledged and quoted only if they wish; otherwise information will be treated as deep background.

Our aim is to discuss lessons from actual EW programs without harming the reputations of defense professionals or companies. You might think you know or can guess the origin of any fictionalized

story used in this column based on this author's background or some familiar aspect of the story, but please keep in mind that we talk to many people. What is interesting about collecting anecdotes is that similar problems, solutions and stories track across many contractors and programs. We all face these challenges and have remarkably similar experiences; it is how we solve them that matters, and that is why we encourage your participation.

For ideas, input and feedback about this "Industry Insights" series, please contact Rich directly at richard.l.powers08@gmail.com. ✉

About the Author: *Richard L. Powers, MSEE, joined Sanders Associates in Nashua, N.H. in 1978, serving in various EW and SIGINT engineering, program management, business development, and general management roles. Rich had the distinct opportunity at Sanders/BAE Systems to work in a variety of technologies and systems spanning from acoustic to UV and helped pioneer EW for low observable aircraft in the early 1980s. After BAE Systems, he led the L3Harris Ground EW business until retiring in 2023. He left retirement in 2024 to join Aerospace BD, LLC www.aerospacebd.com, as a consulting engineer. Aerospace BD provides a range of growth-oriented consulting services; they named Rich as CTO in 2025.*