



Adventures in Defense Acquisition

Frank Kendall



For what is likely to be my last communication to the acquisition workforce as Under Secretary of Defense for Acquisition, Technology, and Logistics (USD[AT&L]), I thought I would share with you a few stories, all true, from my 45 or so years working in various aspects of defense acquisition, either in uniform, as a civil servant, in industry, or as an appointee. I've put them more or less in chronological order, starting with an experience I had while serving in Europe during the height of the Cold War. There has certainly been a lot of water under the bridge since then, and a lot has changed, but the things I've learned along the way are in many cases timeless.

During the 1970s, as an Army captain, I commanded a Hawk air defense battery in West Germany. We had a new battalion commander take over during that time. He immediately started a program he called "Victory Through Integrity" or VTI. This was the period of the readiness crisis and the "hollow force" following the end of the war in Vietnam.

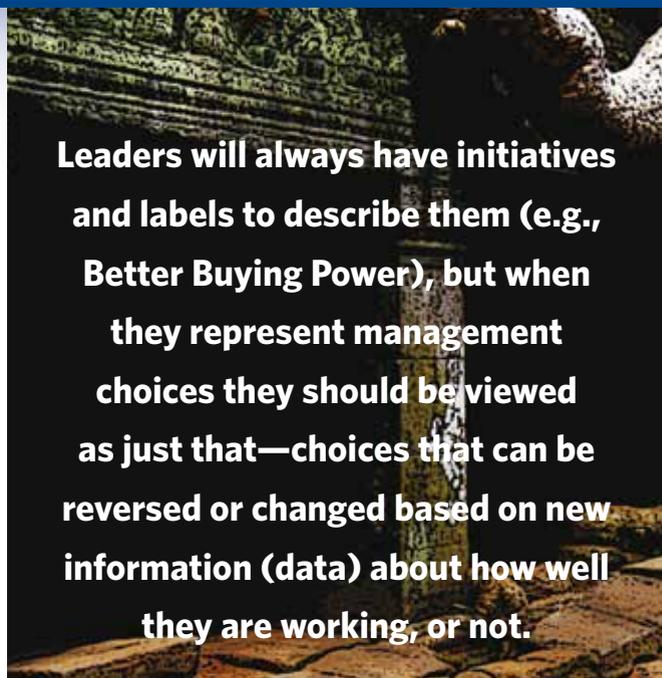
Our new commander's ideas on logistics included that cross-leveling parts between units and cannibalizing down items of equipment, like our radars, was a violation of our integrity. We stopped doing these things and went nonoperational for several months while we stubbornly stuck to our "principles" about these maintenance policies. During that period, training as well as operational readiness suffered enormously. Eventually, the battalion commander was told to change his policies. He very reluctantly obeyed the order. I believe it is always important to act in a principled way, and in particular

to act with integrity, but in this case I felt that my commander had confused integrity with reasonable choices in management policy. Leaders will always have initiatives and labels to describe them (e.g., Better Buying Power), but when they represent management choices they should be viewed as just that—choices that can be reversed or changed based on new information (data) about how well they are working, or not.

In 1980, while still an Army captain, I attended my first congressional hearing. I believe it was the House Armed Services Committee. I was there in support of my boss at the time, the Army major general who was the Army's Ballistic Missile Defense program manager. He was one in a series of program managers providing testimony that day. This was about 3 years before President Reagan announced the Strategic Defense Initiative (SDI) program.

One of my most vivid memories of that hearing was the lead professional staff member for the committee holding up a schedule and chastising a witness for the degree of concurrency in his program. What I can't remember is whether he was for or against concurrency—but, whichever it was, he was passionate about it. We've been for and against concurrency several times since that hearing. Like many other decisions, the degree of concurrency (overlap between development and production) in a program is a judgment call motivated by many factors, first among them being confidence in the stability of the design. Early in my tenure as USD(AT&L), I referred to the extraordinary amount of concurrency, and the specific decision to start production on the F-35 fighter jet before any flight test data had been accumulated, as "acquisition malpractice." The press loves pithy expressions like this, so the comment got a lot of exposure. Concurrency decisions, like many others in acquisition, require critical thinking, sound professional judgment and taking a lot of program specific factors into account.

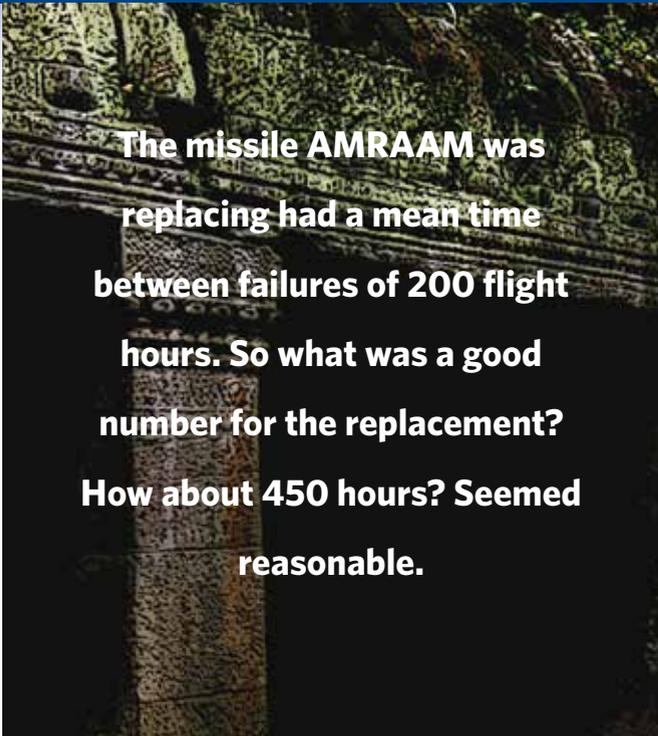
Careers can take strange turns. One of mine may have hinged on a 2 a.m. flight from Andrews Air Force Base in Maryland to Nantucket Island in Massachusetts. I was the Assistant Deputy Director of Defense Research and Engineering for Strategic Defense programs. My boss' boss' boss, the Under Secretary for Acquisition, was on vacation in Nantucket and was tasked on short notice to come back to Washington for a hearing on the SDI. I volunteered to fly to Nantucket on the MILAIR flight that would bring him back to DC and to prep him during the flight for the hearing, which would be held the same day. We picked him up at about 5 a.m. Nobody had told him I would be on the airplane, so he was a little surprised to see me. He was also pretty impressed that I had gone the extra mile to stay up all night so I could brief him. I accompanied him to the hearing, which went very well, in part because I had a chance to



prep him thoroughly. Just after that, I applied to be the acting Director of Tactical Warfare Programs when the incumbent left government. This job, overseeing all of the Department of Defense (DoD) conventional weapons system programs and reporting directly to the Under Secretary, was my dream job at the time. I got the job.

While I was still the acting Director for Tactical Warfare Program, a period of 2.5 years when I didn't know if a political appointee would replace me, there were four changes in the officeholder of Under Secretary of Defense for Acquisition. One of these was a former executive from Ford who was totally new to Washington and DoD and who had just come onboard. At the time, we were struggling to get the Advanced Medium-Range Air-to-Air Missile program (AMRAAM) through testing and into production. Late on a Friday afternoon, I received a preliminary report from the Air Force that we had experienced a flight test failure. There was very little information on what had happened, so I decided to wait until I knew more before informing the Under Secretary. On Monday morning, I was at Patuxent River Naval Air Station in Maryland, getting a medical so I could do an F-18 flight out to a carrier. A perk of my position was that there were often good reasons for me to experience firsthand the performance of our conventional weapons programs.

Just as the flight physician was about to take my blood pressure, I received a call from the Under Secretary. The press had heard about the flight test failure and had asked the Secretary of Defense about it. He was clueless, so he asked the Under Secretary, who was also clueless because I hadn't informed him yet. When asked, the Air Force was understandably quick to point out that I had been informed right after the failure.



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The Under Secretary proceeded to rip me a new one, as they say. As soon as I got off the phone, the flight physician took my blood pressure. Eventually I did get to experience the F-18 flight, and eventually the “acting” status was removed from my title, but it took some time to recover from that initial impression. Nobody likes surprises, and the more senior one is the less one likes them. Bad news does not improve with age.

In addition to having problems completing flight test, the AMRAAM struggled for at least a year to demonstrate that it could meet one specific reliability requirement, the average number of hours it could be carried on an aircraft before a failure occurred. The requirement had been set arbitrarily at 450 hours. This was a totally unrealistic number that later analysis showed had no operational value or cost effectiveness. The requirement could have been dropped to 250 with minimal cost or operational impact. So why did we spend more than a year making holes in the sky to prove we could achieve 450 hours? Because we had failed operational testing and it had politically become a high-interest item. The program had a bad reputation and was at real risk of cancellation. The Services concluded that it was better to keep flying to try to achieve the requirement than to take the political risk associated with reducing it; so we kept flying. In those days, requirements were often set by relatively junior people with a high degree of arbitrariness. The missile AMRAAM was replacing had a mean time between failures of 200 flight hours. So what was a good number for the replacement? How about 450 hours? Seemed reasonable. Acquisition and operational people have to work in close cooperation. If you don't, this is the sort of thing that happens.

One of my programs in DoD was a special access Navy program to develop the A-12 stealthy fighter bomber. It had already started Engineering and Manufacturing Development when it fell under my portfolio. It was also touted as a new model for how to do acquisition effectively at the time—little oversight, firm fixed-price development, an acquisition approach that in the development phase teamed two competitors who would later compete for production, and a very aggressive schedule tied to fixed-price production options. It was a disaster waiting to happen. The A-12 is taught as a classic case study in how not to do acquisition, and for good reasons.

We have a lot of programs that struggle to get through development and into production, but most of them do get there. Programs like the A-12, where we spend billions of dollars and get nothing, are travesties. I won't try to tell this whole story here; it is available elsewhere in great detail. At that time, the Secretary of Defense was Dick Cheney, and we were doing something called “The Major Aircraft Review.” In one of my briefings to Secretary Cheney, I had told him that based on earned value data (but not what the contractor or military Service were saying) the program was in big trouble, and would overrun by at least a year and \$1 billion. I found that out from the DoD Earned Value Management guru at the time, John Christie.

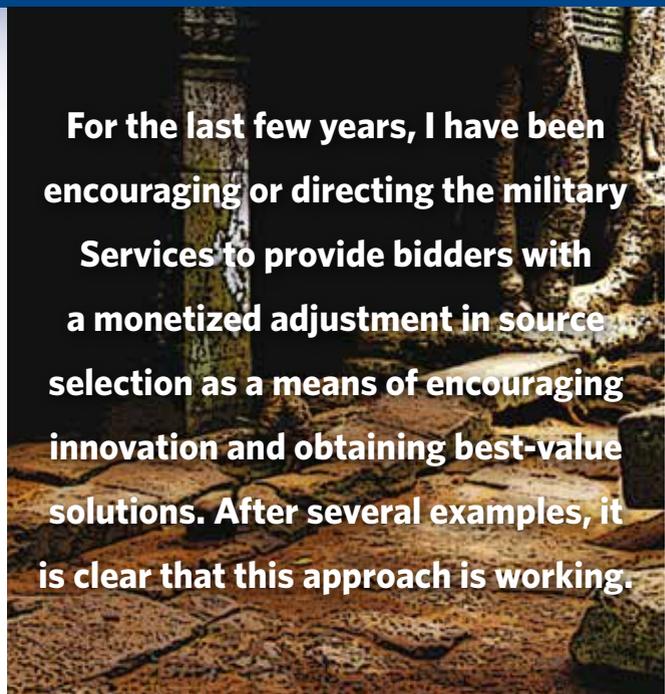
After the A-12 blew up, figuratively speaking, and was canceled (properly so, as the Supreme Court finally concluded about 20 years later) there was an investigation, led by a general officer, into who knew what when. It turned out that John had briefed a member of my staff several weeks earlier, but no one had informed me. The data provided compelling evidence of where the program was headed. That member of my staff who had been briefed was a very capable Navy officer. However, instead of informing me of the data, he had immediately called the Navy staff to warn them about this threat to the Navy's program in the Office of the Secretary of Defense. I was rather upset when I found out he hadn't seen any reason to inform me, the person he was supposed to be working for. During the investigation, I brought this up, and in the report that followed I was criticized for not having adequately trained this officer in the fact that he had a duty to inform me, his supervisor, of any relevant information about the program he was overseeing for me. I'm not making this up. Service loyalties run deep.

The A-12 cancellation came about in part because the Secretary of Defense had testified that the program was progressing more or less on track. I don't know for a fact, but my guess is that he simply forgot about the concerns I had expressed to him during the major aircraft review. He had no reason to

dissemble, and he was put on the spot by a question he had not anticipated. A few months later, the contractors requested a bailout, embarrassing the Secretary, who subsequently ordered the program canceled. Two people on the Secretary's staff argued against cancellation—me and the Director of Acquisition Policy, Eleanor Spector. Our new boss, who replaced the previous Under Secretary for Acquisition at about that time, listened to us but kept his cards close. The decision meeting with Secretary Cheney took place early one morning, and neither Eleanor nor I attended. A few hours later, another member of the acquisition staff, who had been in the Secretary's briefing room for a subsequent meeting, dropped off a hard copy of a set of briefing charts he had found at the podium. They were the charts my boss, the new Under Secretary for Acquisition, had used to brief the Secretary. The final chart read: Recommendation—Termination. I don't know to this day if that was the right decision or not. Most of the time, as Eleanor and I maintained, one is better off working through problems to get the needed capability. This isn't always the case, however. I do know that 25 years later the Navy still doesn't have a stealthy tactical aircraft operating from a carrier, but we are getting close.

The Advanced Self-Protection Jammer or ASPJ is another program that didn't make it through the transition from development to production and fielding. ASPJ was another product of the fad of fixed-price development that was tried in the late 1980s. A good deal of my time in the early 1990s was spent cleaning up the many messes that this policy created. I have good experience-based reasons for wanting to avoid fixed-price development. ASPJ had another problem, however, and it had to do with algebra.

ASPJ was a jamming system for tactical aircraft. Its job was in part to jam enemy air defenses so that tactical aircraft wouldn't be shot down. In order to get through the Operational Testing phase to transition to full-rate production, ASPJ had to demonstrate that it could adequately perform this function. The metric for success was expressed as an algebraic equation that had to be statistically tested. The equation was built in part around the success of the jammer at defeating a threat after an air defense missile was launched against the aircraft with ASPJ on board. We made the mistake of not including the cases in which ASPJ was effective at preventing the launch, so these successes didn't count as part of the test. Again, we found ourselves in a situation where changing the rules would have been viewed with suspicion in the political environment around struggling acquisition programs. In this case, we did make the needed changes, but for other reasons the program was canceled in the defense drawdown that followed the Cold War. It was later resurrected with a different name and ultimately fielded.



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A few years later, I had taken a position at Raytheon as Corporate Vice President of Engineering. We were in a tight competition with our most ferocious competitor, Hughes Aircraft, to build the next generation short-range air-to-air missile, the AIM-9X. We thought we had a much better design than our competitor and were sure we could offer the customer much better operational performance. We had a problem, however. From what we could tell from the draft request for proposals we had seen and from discussions with the Air Force, there was no way our higher performance could be considered in the source selection. We also anticipated a price disadvantage because our missile design, though innovative, was more complex—and we believed more costly as a result.

I spent a lot of time in the Pentagon trying to get the program management, the operational community, or the Under Secretary for Acquisition to provide some way for our better operational performance (a bigger engagement envelope and higher probability of kill) to be considered in source selection. I failed. In this case, we lost—but this occurred just as Raytheon was buying Hughes. Hughes had bid very low; we speculated that this was done so Hughes could book the business to enhance its attractiveness as an acquisition. In some respects, this was a lowest price technically acceptable source selection, something many in industry complain about today and something I have tried to limit to cases where it is really appropriate. Most of the time we do want higher performance, if it is at a price we would consider reasonable. For the last few years, I have been encouraging or directing the military Services to provide bidders with a monetized adjustment in source selection as a means of encouraging innovation and obtaining best-value solutions. After several examples, it is clear that this approach

is working. I wish it had been used in the 1990s when we were bidding on AIM-9X.

While I was in industry, I served for some time on the Army Science Advisory Board. One study we were involved in was a review of a weapon system that had featured prominently in the First Gulf War. It happened to be a weapon system that my company produced. I don't recall the reason, but as part of the study we needed some technical data on the system's performance. For reasons we didn't understand, we just couldn't get the program office to give us the data, despite several requests. Finally, one of the study group's members, retired Gen. Jack Vessey, the former Vice Chief of Staff of the Army, called the Chief of Staff to ask for some help. We got the data. I, however, got a call through my corporate headquarters to go to Washington to meet with a brigadier general on the Army staff responsible for the program to explain my reasoning, as I was associated with the request. The program office, fearing it might look bad somehow, had been slow-rolling us in providing the data and I was being called to task for having gone over everyone's head to the Chief of Staff through Gen. Vessey. My management wasn't pleased. Corporations know where their money comes from, and sometimes the people who control those funds have narrow ideas of what is right and what is wrong.

Another incident from my time in industry involved what I can only describe as abuse of power by a government acquisition official. At the time, my firm had two matters, totally unrelated and involving two programs, that we wanted resolved by the Service in question. One was a protest of a bid we had lost. It was not at all common for my firm to protest. We felt that it would upset our customers and that it was unlikely to succeed. In this case, we had lost a bid on something we considered a core business—a share of the market and a product that we had controlled for a very long time. We felt we had a legitimate reason to protest the source selection and it was important business—so we protested.

The other matter was a request we made of the same Service on another program that was coming up for source selection. We wanted some changes to the request-for-proposal language, changes we felt were fair and that just happened to be to our advantage. With these two matters on the table, we were visited by a senior flag officer from the Service involved. He asked us which of the two matters was most important to us and told us that the Service's decisions on them were "linked." I was shocked. In my view, then and now, the government should be resolving disputes or issues with industry on a case-by-case basis on the merits. I never found out if this conduct was illegal, but I'm certain that it was unethical. The government should not cut backroom deals in which it coerces

a contractor to give up a legal right to a decision on the merits in return for a competitive advantage. The government has immense power over contractors, and has an obligation to not abuse that power. When it does abuse its power, trust is destroyed. By the way, my colleagues from industry and I did exactly the right thing: We ignored the question.

While I was in industry, I spent several years as an independent consultant. One of the projects I participated in was the Army's Future Combat Systems program or FCS. Like A-12, this program wasted billions of dollars and delivered basically nothing to the Army. It was hugely ambitious, driven by a "vision" that was divorced from reality and hobbled by totally unrealistic direction on schedule, imposed from the top of the Army.

The acquisition community within the Army took huge risks trying to execute the unrealistic 4.5-year schedule from start of development to a production decision—for the largest and most complex program in the history of the DoD. The acquisition strategy risks, including the contracting approach, a Lead System Integration, the immaturity of the requirements and the early loss of competitive incentive doomed the program before it started. The sanity check that the Under Secretary for Acquisition is supposed to provide failed under Service pressure to proceed. As soon as the responsible leadership departed the Army, the schedule was slipped 4 more years—but the damage had already been done. This is the most extreme example of something I have seen too many times; operational and Service leadership is always in a hurry and usually has no real understanding of what it takes to design, prototype, test or produce a specific product. This mistake cost the Army more than \$10 billion of precious research and development funds and several years of modernization that can never be recovered.

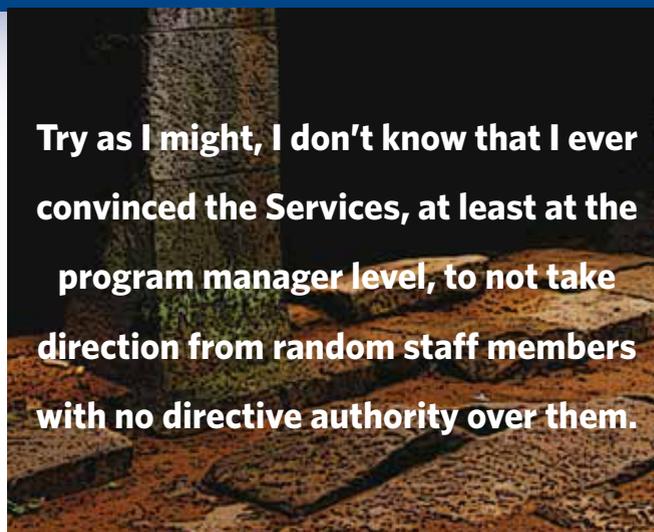
The Services do have distinct cultures, and that includes how they relate to outside stakeholders and authorities. The classic allusion to "the dumb, the devious, and the defiant" isn't wholly accurate, but there are times when it seems apt. A better characterization might be that the Army knows how to salute to a fault, the Air Force likes to cite Office of the Secretary of Defense (OSD) direction as to why it is acting in a certain way, and the Navy would strongly prefer that there be no OSD direction. That is certainly an oversimplification, but it is a rough approximation of reality.

I could tell stories all day from my current tenure as USD(AT&L) about the Services, but here is one from my tenure as Principle Deputy Under Secretary: For some reason, we were having a meeting in my office with a brigadier general from the Army's acquisition community. We got into a discussion of several options for how to proceed on a specific program. It wasn't

a decision meeting, and staff members were just tossing out ideas for discussion. We did this for about 20 minutes and the meeting broke up. About an hour later, I received a note from the Army Acquisition Executive complaining about all the direction the brigadier had been given. He walked out the room convinced that he had just been directed to do every one of the things that had been discussed, when in fact he had been directed to do none of them. Apparently, he went back to his office with his hair on fire and started ranting about all the crazy guidance he was getting from every member of the DoD acquisition staff. I'm guessing that the Air Force would have picked any guidance they liked and implemented it but made clear it was at the direction of the OSD. The Navy would probably have regarded it as an amusing conversation and largely ignored it. Try as I might, I don't know that I ever convinced the Services, at least at the program manager level, to not take direction from random staff members with no directive authority over them. My policy was that the staff was there to advise me as the Defense Acquisition Executive, not to provide direction to the Services—but implementing that policy isn't as easy as it should be. A program manager trying to get his program approved just wants it approved, and is likely to err on the side of accepting direction if he or she thinks it will help achieve the goal. I finally directed my staff to identify all comments on Service plans as "Defense Acquisition Board Issue," discretionary, or administrative. This meant that I would have visibility into anything the staff thought was important to change. I think this has helped, but there is still room for progress.

We spend a lot of time trying to devise acquisition strategies that will effectively incentivize industry to deliver more of whatever the government wants. Industry has two priorities. In order of importance, they are to (1) win contracts, and (2) make money on them. The first is a prerequisite to the second. Government people should never lose sight of the fact that these imperatives always motivate industry. We can use them to get better results, but we need to be careful about unintended consequences.

A case in point was the Joint Advanced Guided Missile or JAGM, an Army-led joint program. The Army was conducting a competition and had asked industry to build competing prototypes as risk reduction efforts in support of the competition. The prototypes were to be flight tested as part of the source selection. I had challenged the Army's intention to use a fixed-price incentive contract for the next phase of work—Engineering and Manufacturing Development. My concern was the degree of risk for the upcoming phase. I asked the Army to bring in the engineers for the program to walk me through both competitors' designs, the one they would use in the early prototype testing as part of the source-selection



process and the production prototypes they were proposing to actually build in the next phase. What I discovered was that there was no traceability between the risk reduction prototypes and the production prototypes. Every subsystem of the missiles would have to be redesigned. The competitors were building "proof of principle" prototypes for the source selection. They were not reducing the risk in the designs they intended to build for production.

As a result of this, I directed the Army to change the contract type to one more suited for the remaining risk. Probably more importantly, the light bulb went on about what the competitors were trying to do. They were not motivated to reduce risk. That would have entailed taking some risk, and that was the opposite of what they were motivated to do. They were motivated to win, which meant that they wanted a low-risk and successful flight test so that they could win the contract. The government had asked for the things our policy supports and the Congress expects: competitive prototypes and flight tests. The government failed to insist on prototypes with designs traceable to the designs being bid for production and to the reduction of the specific risks associated with those designs. We can't blame industry for responding to the business incentives we provide. The government acquisition team must have the expertise it needs to understand what is required, and the professionalism to ensure that industry provides it. Industry will always act to maximize its return, and the government will get what it accepts.

It has been a great honor to have led the terrific men and women in the DoD's acquisition workforce. You are unsung heroes who, with equally dedicated and patriotic people in industry, provide our men and women in uniform with the products and services they need to defend our freedom. I hope that some of these anecdotes will prove useful as you continue your efforts to improve even more on the great work you do every day. Thank you. It has been wonderful to have been part of this team. 