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Key Points

The Air Force, like the rest of the Department of Defense, still relies on highly bureaucratic, industrial-age procurement methods that take many years to field new weapons systems. US adversaries, meanwhile, are exploiting commercially available technology, innovatively fielding new capability much more quickly. This is eroding US technological superiority.

Air Force leadership must fundamentally retool how the acquisition workforce acquires weapon systems so that Airmen remain equipped to prevail. This should include strengthening program managers' authority, restoring the focus on sound military judgment over non-critical bureaucratic processes, and inculcating a culture that rewards innovative thinking.

Airmen need new weapons systems at the speed of combat, not the pace of bureaucracy. Congressionally driven reforms and internal changes of the past several years are taking root and starting to help, but major revamp is still necessary.

Acquisition at the Speed of Combat, Not the Pace of Bureaucracy: Enabling Progress in Reform

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Abstract

Like the rest of the Department of Defense, the Air Force's acquisition system still relies on highly bureaucratic, industrial-age procurement methods that take many years to field major new weapon systems. But maintaining this approach is no longer tenable since US adversaries are exploiting an explosion of commercially available technology on the global market to their advantage, innovatively fielding new capability much more quickly. US technological superiority is eroding.

The Air Force, therefore, must fundamentally rethink and retool how it acquires weapon systems. The mission of the acquisition workforce must be delivering effective, responsive, and reliable capability as soon as possible to meet warfighting requirements. Airmen need new systems at the speed of combat, not the pace of bureaucracy.

Air Force leadership repeatedly has exhorted Airmen to be bold and innovative. The acquisition community must now embrace those tenets, restoring sound military judgment (e.g., mission value, sustainment efficiencies, lifecycle costs) in selecting new capability and inculcating a culture that rewards risk-taking, accepts failure as part of pushing innovation, and makes "speed to capability" a key metric by which it judges success. Getting a civilian acquisition chief in place is crucial to push these reforms and provide top cover for acquisition professionals performing this way and facing change-resistant bureaucratic pushback.

Congressionally initiated reforms of the last several years, plus Air Force-initiated steps, such as revitalizing experimentation—like the upcoming OA-X initiative to assess light attack aircraft—and giving acquisition professionals more flexibility to do their jobs, are slowly taking root. But major revamp is still necessary as the service executes critical modernization and recapitalization programs and legacy system upgrades.

Introduction

The US Air Force, like the rest of the Department of Defense (DOD) faces a tremendous challenge with its acquisition system. Time is not on its side. With an inventory of aircraft that is older and smaller than at any point in the service's history since the Great Depression, it is crucial that the Air Force be optimally aligned to procure the next generation of capabilities.

The DOD still relies on highly bureaucratic, industrial-age procurement methods that take many years to field major new weapons systems. In contrast, our adversaries, ranging from near-peer nation states to terrorist groups like ISIS, are exploiting the explosion of commercially available technology on the global market to their advantage. They are innovatively fielding new capability much more quickly than we are.

For the United States to engage successfully around the globe, the Air Force, just like its sister services, must fundamentally rethink and retool how it acquires weapon systems so that Airmen are equipped to prevail. Business as usual with the mainstream acquisition system is no longer tenable. The rapid pace of technological development is overrunning acquisition efforts that slog on for years and often decades. The status quo merely ensures obsolescence, depriving the service of essential agility required to meet rapidly evolving circumstances in the operational environment. The Air Force must strive to deliver weapon systems far more efficiently and effectively.

Repeatedly, Air Force leadership has exhorted Airmen to be bold and innovative. The service must now “walk that talk,” and inculcate a culture that rewards risk taking, making “speed to capability” a key metric by which it judges acquisition success. The acquisition community must now embrace those tenets, restoring sound military judgment in selecting new capability. One must only look at the pace at which new smart phones are fielded to get an idea of what it takes to maintain relevant capabilities in the modern era.

A responsive acquisition system must also deemphasize the fixation on “protest-proof” evaluation processes that often are artificially

simplified in ways that do not reflect operational realities. Factors to consider in this area include mission value, sustainment efficiencies, and lifecycle costs.

Already in the past several years, useful reform initiatives have flowed in from Congress to give weapons buyers more flexibility and agility. Some of these measures have trickled down from the Office of the Secretary of Defense (OSD). Plus, the Air Force has made changes on its own volition. Those are slowly starting to help, but major revamp of the entire acquisition process is still necessary.

Delivering effective, responsive, reliable capability as soon as possible to meet warfighting requirements is the mission. Airmen need new systems at the speed of combat, not the pace of bureaucracy. With a new presidential administration, defense secretary, and now a new Air Force secretary in place, the time is now for this reset. Attitudes of reflection and study need to take a backseat to urgency and action.

The Character of Defense Acquisition— Cases in Point

There are ample examples across the modern Air Force that illustrate the byzantine character of defense acquisition. While reform initiatives in the form of studies and papers provide substantial insight, they are not driving aggressive change in the system. The actual products of the acquisition process are more compelling.

Clearly, the Air Force is not alone among the services in facing significant acquisition challenges. Indeed, the Army's Modular Handgun System and Navy's *Ford*-Class aircraft carrier program highlight defense-wide difficulties in acquiring items of any size, scope, magnitude, or complexity.

Case One: An Army Essential—Acquiring a Pistol

Acquisition challenges have arisen from some of the most basic procurement needs of the military services. It took the US Army 10 years to settle on the requirements for the Modular Handgun System, the pistol to replace the Beretta M9 that entered service in the 1980s. When the service finally issued the request for proposal (RFP) to industry in fall 2015, it “did not identify key requirements,” such as caliber or the specific

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The Army in January 2017 ultimately selected a version of Sig Sauer’s P320 as its new handgun. Soldiers of the 101st Airborne Division at Fort Campbell, KY, will be the first to receive the new handgun, designated the M17, before the end of 2017. That’s 12 years after the process began—to buy a new handgun...

ammunition for the handgun, notes the May 2017 interim report of the congressionally chartered “Section 809” panel, which is studying how to streamline defense acquisition regulations.¹ Further, the first draft RFP “exceeded 350 pages, not counting 23 attachments” and “the paperwork alone added an estimated \$15 million, or 20 percent, to procurement cost,” states the report. The complexity of the process to compete prompted some companies, such as Ruger, to opt out, according to the report.

Frustration over the pace of this acquisition led Army Chief of Staff Gen Mark A. Milley to quip during a talk in March 2016 that he would rather take a credit card and simply buy the new pistols from Cabela’s, a national outfitter of hunting and outdoor gear.² “I’ll call Cabela’s tonight and I will outfit every Soldier, Sailor, Airman, and Marine with a pistol ... and I will get a discount on it for a bulk buy,” he said. “We are not figuring out the next lunar landing. This is a pistol,” he said.

The pistol saga is indicative of the problems with defense acquisition, said Milley. “Why is it slow? Part of it is the layers upon layers upon layers” of bureaucracy, he said. “A lawyer says this and a lawyer says that and you have to go through this process and that process. You have to have oversight and this, that, and the other thing,” he said. The Army Chief of Staff called for decentralizing authority and empowering acquisition personnel, while holding them accountable. “There is a certain degree of common sense to some of this stuff,” he said. “I should be able to look at someone and say, ‘Here is your task, here’s why you are doing it, ... here’s the end state that I want you to achieve by such and such a time, go forward and have at it.’” He added, “If you succeed, you are promoted [and] ... if you fail, you are fired.” He said this approach is relevant to acquisition “just as it applies to the battlefield.”

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at Fort Campbell, KY, will be the first to receive the new handgun, designated the M17, before the end of 2017.⁴ That’s 12 years after the process began—to buy a new handgun, a handgun that a civilian could purchase at a sporting goods store in an afternoon.

**Case Two:
A Navy Essential—Acquiring a Carrier**

As for the Navy, its *Ford*-class aircraft carrier program has been beset by hefty cost overruns and schedule delays. Designed to replace *Nimitz*-class aircraft carriers, the *Ford*-class is the Navy’s first new carrier design in some 40 years, combining an awesome combat punch with reduced operating costs due to technological innovations and less manpower demands. But there’s been a steep learning curve in building the first ship in the class, the USS *Gerald R. Ford* (CVN 78). Its construction costs increased by 23 percent from the \$10.5 billion estimate to \$12.9 billion, reported the Government Accountability Office (GAO) in June 2017.⁵

Key cutting-edge components—such as the Electromagnetic Aircraft Launch System (EMALS) to propel aircraft off of the ship with electromagnetics, instead of steam, and the Advanced Arresting Gear (AAG) system that uses an electric motor to recover aircraft—experienced developmental setbacks and displayed serious deficiencies during shipboard testing, causing schedule delays, design tweaks, and deferring the availability of capability, according to GAO. For example, because of AAG’s delays, CVN 78 will not initially have “the capability to conduct full flight operations with all carrier aircraft types,” states the agency’s report.⁶

Newport News Shipbuilding, in Newport News, Virginia, began construction of CVN 78 in September 2008, with delivery originally expected in September 2015. Instead, the Navy accepted delivery of CVN 78 on May 31, 2017. The ship will now undergo an at-sea “shakedown” period with crew.⁷ The Navy expects CVN 78 to be operational in 2020.

The service currently has plans for two additional *Ford*-class carriers, the future USS *John F. Kennedy* (CVN 79) and the future USS *Enterprise* (CVN 80), and is considering a third,

CVN 81. CVN 79 is 28 percent complete, with delivery slated in fall 2024, while construction of CVN 80 is scheduled to begin in spring 2018, senior Navy officials told lawmakers in May 2017.⁸

In July 2016, the Pentagon’s inspector general (IG) chided the Navy for “not effectively” managing the AAG acquisition and for pursuing “a technological solution for its *Ford*-class carriers that was not sufficiently mature for the planned use, resulting in hardware failures to mechanical and electrical components and software modifications to accommodate those failures.”⁹ The IG recommended that the sea

service’s acquisition shop perform a cost-benefit analysis to ascertain whether AAG is “an affordable solution for Navy aircraft carriers before deciding to go forward with the system on future aircraft carriers.”¹⁰

The IG was not alone, as lawmakers also took the Navy to task. For example, the Senate Armed Services Committee, in its Fiscal 2017 defense authorization legislation, noted that by April 2016, the acquisition unit cost of AAG had risen to \$446 million from its 2009 baseline of \$123 million.¹¹ Accordingly, the committee instructed the Navy to “pause and reconsider the way ahead, including the best business case, for the arresting gear on CVN-79 and CVN-80,” noting that the service already had begun

this review.¹² After performing that analysis, Navy leadership in January 2017 informed Congress that the sea service would stick with using AAG after determining that reverting to the existing Mk-7 arresting gear would be too disruptive to the construction of the future *Ford*-class carriers.¹³

GAO auditors are warning that the Navy “is again underestimating” cost, this time with CVN 79, “potentially to the tune of hundreds of millions of dollars” over the ship’s \$11.4 billion price cap.¹⁴ Acting Navy Secretary Sean J. Stackley told the Senate Armed Services Committee on June 15, 2017, that “the cost for this new ship class remains

of great concern.”¹⁵ However, he said, the Navy and industry are capturing lessons learned from the first ship and taking measures to drive down cost.

Case Three:

An Air Force Essential—Acquiring an Aircraft

The UH-1N Replacement program, the Air Force’s effort to swap out its Vietnam War-era UH-1N Huey helicopters with new, more-capable airframes, offers a topical example of the trials of service acquisition today. The current iteration of the procurement effort began in Fiscal 2016, and at first glance, it appears this program should have been straightforward and uncomplicated. That’s because the Air Force seeks to field a mature, essentially off-the-shelf helicopter design to replace the venerable UH-1Ns that perform the vital missions today of protecting the nation’s intercontinental ballistic missile complexes, transporting senior government officials in and around the National Capital Region, and ensuring the continuous operation of the federal government during emergencies. However, responding to myriad procurement challenges, the acquisition has morphed into something unnecessarily more complicated. This has yielded a program that has now been in the works for more than a decade in one way or another, but has become dogged by numerous schedule delays. Based on the current, notional planning, the Air Force will not receive the first new helicopters for testing until Fiscal 2020, have the first operational unit ready until around Fiscal 2022, and will not have the full replacement fleet in place until around Fiscal 2031.¹⁶ This means some Hueys likely will be flying for another decade or more, giving them a service life of nearly 60 years.

Airmen at all levels are exceedingly frustrated by the saga of events surrounding this program. “Of all the things in my portfolio, I can’t even describe how upset get about the helicopter replacement program,” Gen John Hyten, head of US Strategic Command (STRATCOM), told the Senate Armed Services Committee in April 2017. “It’s a helicopter for gosh sakes. We ought to be able to go out and buy a helicopter and put it in the hands of the people that need it. And we should be able to do that quickly,” he said, noting that he was the one who actually wrote the initial requirements

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for the replacement helicopter back in 2007. “Now it’s 2017, 10 years later, and we’re still arguing about a helicopter,” he told the senators.

Hyten’s frustration is not out of place—it is grounded in reality. The Air Force has sought for more than a decade to launch a program to begin replacing its UH-1Ns. The first Air Force UH-1Ns entered service in 1970.¹⁷ Bell Helicopter Company delivered 65 new-build airframes by mid-1972 to complete the acquisition.¹⁸ The service has upgraded and repaired them at regular intervals over their service life. The UH-1N fleet stands at 62 airframes today.¹⁹ As a point of comparison, the US Marine Corps, which tends to operate the

oldest airframes in the DOD inventory, retired its last legacy Hueys in 2014 and transferred its remaining spare parts to the Air Force to help coax along the geriatric fleet.²⁰

The Air Force operates UH-1Ns in various roles at seven locations in the United States and out of Yokota AB, Japan, west of Tokyo. Protecting intercontinental ballistic missiles (ICBMs) requires UH-1Ns based in Montana, North Dakota, and Wyoming to patrol 31,900 square miles of missile complexes across northern Colorado, northwest Montana, western Nebraska, northwest North Dakota, and eastern Wyoming.²¹ These helicopters carry security forces to respond to threats to the ICBM silos and launch control facilities, and escort convoys transporting nuclear warheads and ICBM components around the missile fields. This is not a random, second-tier mission—it cuts to the core of the nation’s ability to secure its strategic deterrent.

In the National Capital Region, Hueys based at Andrews AFB, Maryland ensure the continuity of the federal government by carrying White House, cabinet, congressional, and Pentagon leadership to safety during time of crisis. Day-to-day, these helicopters transport distinguished visitors and senior military and government officials, a role that the Yokota-based Hueys also carry out. UH-1Ns also support aerial testing in Florida, aircrew survival school training in

Washington, and aircrew training in New Mexico. UH-1Ns also have ancillary roles of hauling cargo, evacuating medical patients, searching for, and rescuing, missing or injured civilians, and responding to natural disasters like they did after Hurricane Katrina ravaged New Orleans and the US Gulf coast in late August 2005.²² Unlike the Air Force’s combat aircraft designed to operate in airspace where they may face sophisticated enemy air defenses, the Hueys have flown in what the Air Force refers to as friendly or “uncontested” environments.²³

While the UH-1Ns have been valued assets over the years and have performed well, it is clear they have been unable to meet mission requirements for years, and need to be replaced. In February 2008, an Air Force review panel identified “a critical need to fully fund a replacement helicopter” as one step “to mitigate missile field security vulnerabilities.”²⁴ Hyten told lawmakers in March 2017 that the Hueys protecting the ICBM fields have “become a capability gap.”²⁵ STRATCOM and Air Force officials emphasize that the ICBM force is safe and secure. However, “nuclear weapon security requirements cannot be fully met until the UH-1N is replaced with a more capable aircraft,” said Capt Brian L. Maguire, US Strategic Command spokesman.²⁶

As Gen Stephen W. Wilson, Air Force vice chief of staff, stated at the same March 2017 hearing with Hyten, the UH-1N “falls short of missile field operational needs—notably with speed, range, endurance, payload, and survivability.”²⁷ In layman’s language, this means, for example, the Hueys cannot reach all parts of the missile complexes unrefueled from their base and can’t carry enough security forces and their gear in a single load to meet the requirements. The Air Force has had to act to address these shortfalls with mitigation measures. They include “arming the UH-1N, providing re-fueling stations throughout the missile complex, fast rising B-Plugs at our launch facilities, and additional forward positioning of security forces ‘defenders’ in the missile fields,” Gen Robin Rand, head of Air Force Global Strike Command (AFGSC), told a House panel in July 2016 (AFGSC is the lead command for the UH-1N force).²⁸ Rand had noted that “these measures drive addition manpower, training,

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and infrastructure costs” that the Air Force will only be able to eliminate when it fields a proper replacement. The new helicopter is needed “to close this critical gap,” he said.

In the early 2000s, the Air Force began to study whether to combine the acquisition of the Huey successor and a new combat search and rescue helicopter.²⁹ Ultimately, the service decided in 2011 to pursue two separate acquisitions, with the priority placed on fielding a new rescue helicopter, by that time called the Combat Rescue

Helicopter (CRH).³⁰ The Air Force chose Sikorsky’s HH-60W in June 2014 as the CRH; the service intends to procure 112 HH-60Ws.³¹

The Air Force tried several times some years back to start the Huey recapitalization under the name Common Vertical Lift Support Platform, but the program never gained traction due to higher modernization priorities like the F-35 Lightning II fighter and KC-46A tanker leaving little to no funding for it.³² There were also factors beyond the service’s control, such as Congress imposing the

2011 Budget Control Act, which led to budget sequestration. The sequester stripped many billions of dollars of funding from the Pentagon starting in Fiscal 2013 as a means of reducing federal government spending.

Fast forward to Fiscal 2016, when the Air Force launched the program to field the Huey successor, this time known as the UH-1N Replacement. For a time, the service considered a sole-source buy of Sikorsky UH-60 Blackhawks off the Army’s production line for missile field security. However, in May 2016, the Air Force announced, after consultations with the OSD, that it would pursue a “full and open” competition to replace all its UH-1Ns.³³ The Air Force then issued the first draft request for proposals in December 2016. The document outlined a source selection for up to 84 new helicopters based on lowest price technically acceptable (LPTA) evaluation criteria that would lead to initial operational deliveries

around 2019 or 2020. After receiving industry feedback, the Air Force realized that no offeror could provide a helicopter off the shelf that met its requirements. It would have to allow them to integrate non-developmental items (NDIs) on their airworthiness-certified helicopters: a hoist, a forward looking infrared sensor, internal auxiliary fuel tank, fast rope insertion extraction system bar, and required navigation performance/area navigation system. This action set back the schedule.

“When we found ourselves in that position, we had to step back and say, ‘OK, [UH-1N Replacement] is a documented requirement that’s been through the [Joint Requirements Oversight Council]. That is what we need to go buy,” said Lt Gen Arnold Bunch, the military deputy in the Office of the Assistant Secretary of the Air Force for Acquisition. Accordingly, the Air Force “morphed” the competition to allow the bidders to integrate the non-developmental items onto their platforms to meet the requirement, said Bunch. “I don’t want to slip schedules, but there are times that we have to ... to make sure we are meeting the requirement,” he said, noting that, like STRATCOM’s Hyten, “anytime we start slipping schedules, that’s frustration for me, [too].” But such moves are prudent, said Bunch. If we don’t do event-based planning and management, we can rush ourselves into a situation where it actually ends up taking longer in the end, he said. “Sometimes,” he said, “we’ve got to go slow to go fast,” acknowledging that this is “phraseology which people don’t like” to hear.

Subsequently, the Air Force in April 2017 issued the second draft RFP. The evaluation method changed from LPTA to a best value approach, and schedule tweaks gave the contractor time to integrate the NDIs on the platform and for testing that pairing. It is important to note that the move from LPTA to best value tradeoff came after the Fiscal 2017 defense authorization bill, which included language limiting the use of LPTA contracts, became law.

The Air Force’s evaluation will weigh a technical factor and a price factor, with the former having more significance in the evaluation than the latter. The technical factor has five components: schedule, mission capability, systems integration,

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The bottom line is that the UH-1 recapitalization initiative represents an area where the procurement process is revealing significant room for improvement.

training system, and product support. A bidder can earn extra value if it can deliver the first airframes for testing two months or four months earlier than the requirement to do that within 18 months of contract award. Under the product support component, the bidders will be able to highlight their logistics support, but the evaluation criteria do not factor in logistics support costs.

The Air Force expects to release the final version of the Huey Replacement request for proposal in July 2017, leading to the contract award in summer 2018.³⁴ The service wants the winning industry team to deliver the first four Huey Replacement airframes in Fiscal 2020. They will initially serve as test aircraft to validate the integrated non-developmental items. The next airframes will enter the inventory in Fiscal 2022, starting a flow of new helicopters at a rate of eight per year over 10 years, culminating in Fiscal 2031. The Huey units that protect the missile fields will be some of the first squadrons to get the new helicopters.

The Air Force has set a \$4.1 billion cap on the UH-1N Replacement program, and the service's Fiscal 2018 budget states that it supportsta "the rapid recapitalization" of the Hueys.³⁵ As AFGSC's Rand told lawmakers in May 2017, the service has committed some \$2 billion between Fiscal 2018 and Fiscal 2022 in this budget build to the effort.³⁶ This includes money in Fiscal 2018 to buy test airframes and integration activities.³⁷

As of June 2017, two industry teams have announced their intent to compete: Sikorsky, a Lockheed Martin company, and Boeing/Leonardo. Sikorsky is offering the HH-60U, a variant of the Army's UH-60M Blackhawk helicopter currently in production.³⁸ The Air Force acquired three HH-60U helicopters in 2011; they serve with special operators. Boeing/Leonardo is offering the MH-139 helicopter, a militarized version of Leonardo's civilian AW139 multi-mission helicopter that the company assembles in Philadelphia.³⁹

Bell Helicopter is also "very interested" and "continues to analyze the draft RFP," said Brian E. Chase, the company's director of global communications, in May 2017.⁴⁰ The company

would offer its UH-1Y Venom, which is in service with the Marine Corps. It could also offer the commercial 429 helicopter for the VIP shuttle role if the Air Force desired a split fleet, he said. There has been no indication from the Air Force publicly, as of June 2017, that this is the case.

As of May 2017, officials with the Boeing/Leonardo and the Sikorsky teams said publicly they were still wondering why the Air Force seemed to be pursuing a more traditional development program instead of an off-the-shelf procurement.

"The tension," said retired Air Force Lt Gen Ted Bowlds, comes from the Air Force saying, "I want this thing quick, I want to use the COTS [commercial off the shelf] approach, but I want to do some things special with it." He added, "As soon as you start taking that COTS product and changing it, it stops being a COTS product and you start drifting towards the traditional acquisition. The contractors are frustrated because you are sending them a mixed message. ... 'I am going to buy a COTS product, I want it off the shelf,' but the footnote says, it has to do these things."

There are those still pressing for faster fielding of the new helicopters. During a June 14, 2017, Senate hearing, Sen Steven D. Daines (R-MT) asked Secretary of Defense James N. Mattis if the department can do better than the estimated 2021 fielding date for delivering the first combat-ready UH-1N Replacement helicopters. "I would like to replace [the Huey] sooner," responded Mattis.⁴¹ "Obviously, we compete against a whole lot of priorities," he noted, adding that he would look into this issue and provide "a better answer" to Daines.

The bottom line is that the UH-1 recapitalization initiative represents an area where the procurement process is revealing significant room for improvement. This is not a stealthy, cutting-edge bomber that will be tasked with flying around the globe at a moment's notice into some of the most defended regions around the globe. Its mission, while vitally important, is constant and relatively unchanging, conducted within the continental United States. There comes a point where the acquisition hurdles this initiative has had to surmount over the decade-long circuitous process present more risk to the nation than the notion of using common sense and judgment to

rapidly meet established requirements. Airmen will give their all, but they must be properly equipped to execute their missions successfully. Importantly, we should realize, we don't readily see such dynamics in the development paths of US adversary capabilities.

New Blood in Washington and the Reform Agendas Under Way _____

The imperative for change in the acquisition process is not a new concept in Washington D.C. The number of reports published on the subject could keep a reader occupied for years. Congress and the Pentagon have also tried to launch efforts aimed at improving the process. Despite these efforts, the fact remains that the services are increasingly falling back upon work-arounds versus the established system to procure high priority items. The role the Air Force's Rapid Capabilities Office played in procuring the new B-21 Raider long range strike aircraft stands in point to this reality. While such initiatives are helpful in the near-term, they highlight the imperative for major change so that the actual acquisition system, not work arounds, is what delivers necessary capabilities in a timely, responsive fashion.

Reform and the Secretary of Defense _____

On Jan. 31, 2017, Secretary of Defense James N. Mattis sent a memorandum to DOD's civilian and uniformed senior leaders outlining forthcoming budget steps to rebuild the US military. Among the priorities, he said, the Pentagon must improve the way it does business so that it can be as effective and efficient as possible. "To this end, the [Fiscal] 2019-2023 defense program will also contain an ambitious reform agenda, which will include horizontal integration across DOD components to improve efficiency and take advantage of economies of scale," he wrote.⁴²

The Pentagon, at least as of June 2017, has not publicly discussed how this agenda—especially the parts on horizontal integration and leveraging economies of scale—would specifically relate to acquisition. Bunch, the Air Force's military acquisition deputy, said the service hasn't done "a whole lot in that area" yet when asked about it in a June 2017 interview. Given that OSD is

still assembling its leadership under the Trump Administration, it is understandable it may be some time before senior officials, including at the services level, institutionalize Mattis' guidance.

But, already, there is a growing tension, at least in the aerospace defense industry that touches closely upon the points in the agenda. Indeed, background interviews with industry officials who deal with the Air Force acquisition community indicated an increasing sense of frustration, and even sometimes mistrust, over how the service evaluates—or fails to weigh—factors like economies of scale and leveraging sister-service investments in its competitive source selections. "It's still a relationship, but I think we could all do better," said one official. A major point of contention is how the Air Force analyzes long-term support and sustainment costs of a weapon system in those evaluations, along with other real-world considerations.

For example, industry officials said if a sister service already operates an aircraft that the Air Force is considering in some modified form, and the sister service still is buying that aircraft, then the acquisition overseers should factor the cost benefits of being able to buy off that active production line at a reduced price compared to acquiring the aircraft off a new line. Similarly, it should matter if a sister service already is making significant investments in upgrades for the aircraft, since the Air Force could adopt those improvements without having to bear the cost of them, they said. There are also potentially tremendous cost benefits to leveraging an existing depot and support infrastructure, and there could great training synergies to exploit as well, such as building a training pipeline off an existing schoolhouse. In cases where allied and partner militaries operate an aircraft the Air Force is considering, or commercial airlines already fly the airplane type, the Air Force could also tap into an existing global support infrastructure and reap those savings, too, they said.

Industry officials contended that, consistent with Mattis' guidance, these factors should matter much more than they do now in source selections. They potentially would save the service hundreds of millions, if not billions, of dollars over a system's lifecycle, they said. That is funding the Air Force could apply to other high-priority modernization

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projects, like the future bomber and a new penetrating counter air capability.

These industry officials said the service has access to data in many cases that can be used to make sound decisions when looking at acquiring existing aircraft, or variants thereof, for new roles. “If they were to really understand those numbers and put them into their evaluation criteria, it would drive them to an answer ... as opposed to them being able, perhaps, to select an answer,” said one official. This same person noted in disbelief that Air Force overseers are placing “zero weight” on logistics issues in one major acquisition source selection that’s underway. “We don’t get this,” said this official.

Such frustration leads industry officials to believe mission requirements often are not driving the acquisitions, as they should. Instead, “it’s the acquisition community that has driven out the warfighter requirements because all [it wants] to have is a competition,” said the one official. In other words, there have been multiple instances in recent years where a particular aircraft is exceedingly well suited to meet the desired needs of the service. The acquisition community has dumbed down requirements to ensure other aircraft less optimized for the mission can compete. Add lowest cost imperatives and a disconnect from the operational world, the service could end up buying an aircraft that looks great on a spreadsheet, but is not effective or efficient for meeting real-world demands.

Lawmakers, too, have said the defense acquisition community needs to rethink how it weighs costs like this when it decides upon new systems. Speaking at the Brookings Institution in Washington, DC, on May 22, 2017, House Armed Services Committee Chairman Rep William “Mac” Thornberry (R-TX) noted that outlays for sustainment account for some 70 percent of the lifecycle costs of defense acquisitions; the expenditures on developing and buying the weapons systems at the front end of the lifecycle are not the main cost drivers.⁴³ “Yet, we don’t

really pay attention to that. We just buy the cheapest thing that we think will get the job done at the beginning,” said Thornberry. In the defense legislation he introduced days earlier, Thornberry included language that would direct the Defense Department to weigh those long-term costs more. This includes more heavily factoring reliability and maintainability issues early on in the acquisition, such as during the requirements-formulation and contracting processes, and making decisions earlier on intellectual property, like technical data.⁴⁴

Reform and Congress

Congress has played a leading role in pushing acquisition reform over the past several years that will help the Air Force—as well as the other services—to speed the pace of new capability reaching Airmen and to exploit commercially available technology. Lawmakers began this drive for substantive reform in S. 1356, the Fiscal 2016 National Defense Authorization Act (NDAA), which became law on Nov. 25, 2015.⁴⁵

Among the many significant directives, the 2016 NDAA created the Section 809 panel to study how the Pentagon can streamline acquisition regulations. The act also strengthened the role of the service secretaries and chiefs of staff in the acquisition process to reinforce that the defense acquisition system must be “customer-oriented,” there to meet end users’ needs “in the most cost-effective manner practicable.” This included reinforcing the role of the chief of staff in each respective service in overseeing the formulation of requirements for new capability and managing tradeoffs in cost, schedule, technical feasibility, and performance. This is a critical mark of progress for the service chiefs, who, while ultimately held responsible for the outcome of acquisition programs and operational consequences, were almost entirely cut out of the procurement process. The legislation also pushed the authority for making milestone decisions on major acquisition programs (e.g., permission to begin the development phase, or start production) from the under secretary of defense level back to the service acquisition executives, unless the Secretary of Defense rules otherwise.

The 2016 NDAA also included measures to decrease the time it takes to field innovations.

Probably the legislation's most high profile move, which will take effect on Feb. 1, 2018, is to shakeup the Office of the Secretary of Defense's acquisition shop in the hope of institutionalizing innovative ways of quickly fielding new weapons systems.

Among them were: expanding the Pentagon's ability to use rapid acquisition authority in response to combat emergencies and urgent operational needs; creating a "rapid prototyping fund;" and authorizing the use of "alternative acquisition pathways" to acquire capital assets and services via "streamlined contracting, budgeting, and requirements processes." The law also directed the Secretary of Defense to create a "middle tier" of acquisition programs designed to result in new capability within two years to five years of project start. To achieve this, the legislation outlined two avenues: rapid prototyping of innovative technologies to produce a residual operational capability or rapid fielding of proven technologies. Lawmakers said these programs should be distinct

from so-called "rapid acquisitions" that normally take between six months to two years to complete and "traditional" acquisitions that generally require five years or more to finish.

The legislation also instructed the Secretary of Defense to establish "a centralized capability with necessary expertise and resources to oversee the making of commercial item determinations for the purposes of procurements." It reinforced provisions that require acquisition officials to perform market research on commercial items before settling on a noncommercial alternative. It also contained language allowing for the treatment of good and services that nontraditional defense contractors supply as commercial items. As for the acquisition workforce, it allowed the services to extend the tenure of program managers to promote proper execution of a project; made the Defense Acquisition Workforce Development Fund permanent; and reinforced the ability of acquisition personnel to have a dual-track path that allows them "a primary career in combat arms and a functional secondary career in the acquisition field." Senate Armed Services Committee Chairman, Sen John S. McCain (R-AZ), called the legislation one of "the most significant pieces of defense reform legislation in a generation," in large part for its measures aimed at improving "the broken defense acquisition system."⁴⁶

Congress did not rest on its laurels for the next fiscal year, instead, formulating another ambitious set of acquisition reforms in the Fiscal 2017 NDAA, S. 2943, which became law on Dec. 23, 2016.⁴⁷ Probably the legislation's most high profile move, which will take effect on Feb. 1, 2018, is to shakeup the Office of the Secretary of Defense's acquisition shop in the hope of institutionalizing innovative ways of quickly fielding new weapons systems. The shakeup disestablishes the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics USD(ATL), and in its place, creates two new under secretary positions: one for research and engineering, the USD(R&E), and one for acquisition and sustainment, the USD(A&S).

The USD(R&E) will serve as the Pentagon's chief technology officer to advance technology and innovation for the services. This executive will oversee "all defense research and engineering, technology development, technology transition, prototyping, experimentation, and developmental testing activities and programs," including the allocation of resources.⁴⁸ This includes "unifying defense research and engineering efforts across the department." Lawmakers want appointees to the post to have "extensive technology, science, or engineering background and experience with managing complex or advanced technological programs."

The USD(A&S), meanwhile, will be the Pentagon's senior procurement executive and will manage the delivery and sustainment of "timely, cost-effective capabilities" for the US military.⁴⁹ This official will supervise the department's acquisition work (e.g., system design, development, and production, and procurement of goods and services) and sustainment activities (e.g., logistics, maintenance, and materiel readiness). Appointees should have "an extensive system development, engineering, production, or management background and experience with managing complex programs." In the OSD pecking order, the USD(R&E) will take precedence after the Secretary of Defense and the deputy defense secretary, while the USD(A&S) will have precedence after the USD(R&E), according to the NDAA language.

The legislation also created another senior civilian post: a chief management officer to steer the

Lawmakers are aiming for a new round of reforms to include in the Fiscal 2018 defense authorization bill. To that end, Representative Thornberry on May 18, 2017, introduced Defense Acquisition Streamlining and Transparency Act, H.R. 2511; this legislation will inform provisions for the authorization bill.

department's business operations, also effective on Feb. 1, 2018. It also included a provision requiring a modular open-system design approach "to the maximum extent practicable" for major acquisition projects entering the technology-maturation phase or system development phase after Jan. 1, 2019. This approach will "enable incremental development and enhance competition, innovation, and interoperability," reads the legislation.

Lawmakers also directed the Secretary of Defense to establish a \$250 million pilot program for nontraditional defense contractors and small business concerns to demonstrate innovative prototypes "of significant scope," such as unmanned modular fixed-wing aircraft rapidly adaptable to multiple missions to augment fifth generation platforms; commercial small, satellites with synthetic aperture radar and onboard machine learning for automated, and defense against hypersonic weapons, including sensors.

The 2017 NDAA legislation also limits the use of lowest price technically acceptable (LPTA) source-selection criteria if they would deny a service the benefits of cost and technical tradeoffs in the source-selection process. It also instructed the Secretary of Defense to commission a study "on the prevalence and impact of bid protests" on Pentagon acquisitions. This reform hits a key nerve for many senior officials with experience working in modern acquisition, who claim protest abuse is a widespread long-term concern across the services. Beyond this study's completion, Congress would be well served to consider legislating consequences for companies who submit protests that do not pass scrutiny. Currently, there is no incentive not to file a protest to a contract award, critics of the protest process charge. If a company protests, and loses, and deemed responsible for legal and postponement costs incurred by the protest, this could help limit or tamp down frivolous protests which have hindered delivery of needed capability to the military services. The legislation also gave the Secretary of Defense the authority to establish the position of senior military acquisition advisor

to expertise to service acquisition executives. The Air Force may have up to five of these advisors.

Lawmakers are aiming for a new round of reforms to include in the Fiscal 2018 defense authorization bill. To that end, Representative Thornberry on May 18, 2017, introduced Defense Acquisition Streamlining and Transparency Act, H.R. 2511; this legislation will inform provisions for the authorization bill.⁵⁰ The focus for Fiscal 2018 is more on day-to-day issues such as allowing the Pentagon to buy commercial items online from the same vendors, like amazon.com, from which businesses buy their goods.⁵¹ Thornberry's bill also outlines improved career paths and incentives for civilian program managers and offers increased opportunities for acquisition personnel to serve a rotation outside of government within industry. It would also reform the acquisition of contracted services so that there is a strategic, date-driven focus in acquiring them.

Enabling Acquisition Reform

Recognizing that substantial and accelerated acquisition reform is needed, there is ample evidence suggesting that attention also focus on addressing the fundamentals of the process—elements like leadership and basic organizational structure. The essential principles of delineated and empowered leadership are presently out of focus. Known issues with bureaucratic channels, responsibilities, and operating rules require focus. These essentials are enablers and priority is needed to create the "speed of capability" upon which Air Force airpower dominance is maintained.

Stoking a Warrior Culture— Bold Thinking, Innovative, and in the Fight

In January 2013, the Air Force released a new vision statement: "The World's Greatest Air Force—Powered by Airmen, Fueled by Innovation." In the accompanying document articulating the vision, service leadership stressed the importance of the latter point. "Now, more than ever, we need bold leaders at every level who encourage innovation, embrace new thinking, and take prudent risks to achieve mission success," it states.⁵² "Every Airman should constantly look for smarter ways to do business. The person closest to the problem is often the one with the best solution.

All levels of leadership must again forge a direct connection with the character of urgency, teamwork, and innovation needed to fight and survive at the air combat edge.

Leaders should empower Airmen to think creatively, find new solutions, and make decisions,” it continues. “Airmen at all levels must have the courage to take risks and learn from mistakes as we pursue a stronger Air Force. As we do this, all of our actions will be shaped by our warrior ethos, bounded by our core values, and underwritten by common sense.”

This attitude is one that must be taken to heart by the Air Force’s acquisition enterprise. All levels of leadership must again forge a direct connection with the character of urgency, teamwork, and innovation needed to fight and survive at the air combat edge. This cultural “re-

bluing,” especially among program managers, is necessary to exploit newly acquired rapid-acquisition authorities, quickly procure commercial off-the-shelf equipment, and innovate to speed the pace of getting Airmen new capability. Fostering this mentality means adjusting the program manager’s authorities, since in recent years, the role of these individuals has become too constrained. This was a recurring theme during interviews for this study. “The bottom line: If we don’t pull bureaucracy out of the system and return responsibility back to the program managers, nothing will ever change,” said Marv Langston, former DOD deputy chief information officer.⁵³ Acquisition in a shared culture of winning where leadership is empowered is a foundational enabler of reform efforts going forward.

Langston highlighted Adm Hyman G. Rickover’s work in leading the Navy’s effort to field a nuclear-powered submarine that resulted in the USS *Nautilus* (SSN-571) becoming the world’s first nuclear-powered ship in 1954, after less than six years of development. Then a captain, Rickover accomplished that amazing feat with drive, creativity, engineering expertise, and, perhaps most importantly, a risk-taking nature that pushed the envelope. Langston said the difference between then and now is that there wasn’t a big acquisition bureaucracy then to stymie such bold managers. Today’s generation of program managers, he said, “were raised to be in and live with the bureaucracy, which sheds responsibility.” Even bigger impacts

can be seen from this process when disconnects appear in the operational world, where what seemed the most logical in the bureaucracy of acquisition falls short amidst the real-world demands of the operational environment.

If a culture of urgency and operational teaming is an enabler for leadership to implement and cultivate, then a priority commitment to leadership must occur. Yet, two enduring dysfunctions that are well known must be eliminated.

Status Quo—Absent Executive Leadership

As with any task, success comes from a total team effort. A huge problem that has dogged the Air Force for years is the lack of a senior acquisition leader. This civilian position, the assistant secretary of the Air Force for acquisition, is the equivalent of a four-star general in terms of authority, and having that type of presence matters in a bureaucracy, no matter how capable the acquisition office’s principal deputy and military deputy. The trouble is that the service has had its acquisition chief in place only half of the time from January 2000 through June 2017.⁵⁴ Most recently, the post has been empty since November 2015 when William A. LaPlante departed after a tenure of two years.⁵⁵ And, as of June 2017, the Pentagon has yet to announce a nominee to fill the vacancy for the Trump Administration. It is imperative for the Defense Department leadership to fill the position, which admittedly might not be easy, but will be essential for future success.

This lack of senior acquisition leadership and the resulting impact is well documented. The Air Force Studies Board expressed concern over the enduring absence, remarking in a September 2016 report that: “Prolonged vacancies of [this] position have, over time, eroded the necessary senior leadership and hierarchical support for program executive officers (PEOs) and program managers (PMs), particularly when making potentially controversial decisions about mission-critical defense programs.”⁵⁶ Amplifying this point, Sue C. Payton, who served as the Air Force’s acquisition executive from July 2006 to April 2009, said it is critical to have the assistant secretary in place. One of the main roles of the assistant secretary is to ensure the acquisition workforce is properly

funded and supported by policies to guarantee that adequate capacity, training, and tools exist for the successful execution of the service's acquisition programs, said Payton, who is now president of SCI Aerospace, an engineering consulting firm in Colorado Springs, CO. She was a contributor to the board's report. The acquisition chief is also there to support the workforce and "have their back" in the face of outside criticism when acquisition personnel with the delegated authority take risks and make decisions, she said. That type of top-cover will matter a lot as the Air Force drives technology innovation, such as open systems architectures, and the use of flexible contracting authorities, she

said. No progress can come without risk. Managing such challenges in the name of advancement demands strong acquisition leadership.

The assistant secretary must also be ready to defend acquisition activities from losing funding or personnel to other parts of the Air Force competing for those assets. "When you don't have someone in that position, then you don't have enough power to push back," said Payton. Indeed, since the principal deputy and military deputy, "may not be viewed as equivalent" to the Air Force's other assistant secretaries in the bureaucracy, this may place the acquisition office at a disadvantage, she said. On top of that, the absence of the assistant secretary places a heavy toll on

the principal deputy and military deputy in terms of workload alone. "I just think that is way too much to ask," said Payton. It is nothing against the abilities of those two individuals, as anyone in that situation would be similarly hard-pressed.

Bunch, who has served as the Air Force's military deputy since June 2015, acknowledged that the absence of the assistant secretary does cause tradeoffs on noncritical activities. But it has not hampered the acquisition office's work on the most-critical programs, he said. "We do our wartime mission every day," said Bunch, which means acquiring and developing new systems and getting them to Airmen as soon as possible. "It is critical that we approach our job with that sense of urgency," he said.

"The fact that there are two of us [the principal deputy and military deputy] means that we are stretched thinner, but it does not mean in any way, shape, or form that we are not pushing programs as fast as we can go," said Bunch. He noted that the acquisition shop is not delaying new program starts due to too much workload. "Where I would say [the acquisition chief's absence] has hurt us is ... there are other things that I would probably go put more attention to" ideally, he said. He characterized the current situation as a "balancing act" in which the principal deputy and he are juggling tennis balls and crystal balls, meaning noncritical activities and priority tasks, respectively. "I can drop a tennis ball and I can go pick it up later. I really can't drop a crystal ball. ... I have got to keep the critical programs rolling," he said. Given the number of crucial programs currently in the works—F-35, KC-46, B-21, UH-1 recapitalization, Ground Based Strategic Deterrent, T-X, OA-X, JSTARS replacement, Compass Call modernization, and a host of legacy system upgrades—there are many crystal balls currently in the mix. Developing and implementing improved acquisition practices is layered upon this demand signal as well.

Elevating and Empowering Program Managers

Decades ago, program managers held authority and dictated the course of their projects and contracting officers, along with other acquisition personnel, served as support staff. In the wake of scandals and corruption involving acquisition programs and officials, that organizational structure changed as Congress strengthened the role of contracting officers and different functional chains of command arose (along with an increasing complement of lawyers) to act as buffers against waste, fraud, and abuse. These steps took authority away from the program managers and program executive officers. These actions were well intended, but "the pendulum has swung way too far" in favor of the power of contracting officers, said Payton.⁵⁷ She further explained that some of them have overreached, with actions like determining business clearance approval and forcing lowest price technically acceptable contracts on programs even though such actions may not be aligned with operational interests. "We need to roll that back," she said.

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“There can only be one person in charge of a program when it comes to the technical day-to-day decisions,” and that’s the program manager. But “if there are issues of integrity—waste, fraud, and abuse—contracting officers need to intervene,” she said.

The Air Force Studies Board found that serious tensions between program managers and contracting officers “have contributed to an ongoing erosion of trust and, in several cases, an adversarial relationship between [them].⁵⁸ That situation “has proven highly detrimental both to the acquisition process and to meeting mission needs,” wrote the board in its September 2016 Air Force-commissioned report, *Owning the Technical Baseline for Acquisition Programs in the US Air Force*. Further, not all members of the government’s acquisition team are “accountable for program progress, success, or failure,”⁵⁹ wrote the board. Such circumstances are clearly not optimal for yielding the best acquisition outcomes.

Among the board’s recommendations was the call to clarify and reinforce program manager authorities and responsibilities and to specify contracting officer responsibilities in relation to the program manager.⁶⁰ Payton said she hoped the recommendations would incentivize the contracting officers to work more as team players with the program managers. Another change the board called for in this area is to allow a program manager to weigh in on the annual review of the contracting officer (as well as those of the legal staff and other functional supporting personnel). “I think it will help if the Air Force can put something like that in effect so that the contracting officers know that a program manager really is important and they really need to support the program manager,” she said. Said another way, it is important to emphasize that operational results, not pure process, need to remain the recognized goals in this equation.

During a June 2017 interview, Bunch said the Air Force is taking action based on the board’s study.⁶¹ “If you talk to senior leaders in the contracting world and if you talk to senior leaders in the program management world, there shouldn’t

be any conflict here, but it is obvious from what we hear from a lot of people that there is some tension down below,” he said. Contracting leadership and program executive officers are working to make sure the program managers are getting the right support, he said. Acquisition officials also have picked a pilot program in which “we are trying to share the leadership for some of the business-type work” between the program side and contracting side, said Bunch. “We are going to see what the results of that are to see if there is something there that we can then promulgate out into a broader audience ... so that there’s less disagreement,” he said.

Bowlds, who is an Air Force Studies Board member, said the diluted role of the program manager and bureaucracy bloat truly has hurt the Air Force’s acquisition work. “My overarching belief is that what has plagued acquisition is the number of people who can say ‘no’ to a program versus the number of people who are there to help a program succeed,” the former Air Force Electronic Systems Center and Air Force Research Laboratory (AFRL) commander said. “My experience is whenever somebody does something innovative because they have found a way to do it, the system bricks that path. There is a new regulation, a new policy, a new law,” he said. Today, Bowlds is chief information officer of FlightSafety International in New York City.⁶² He is also currently a board member of the DOD-sponsored Systems Engineering Research Center at the Stevens Institute of Technology in Hoboken, NJ.

The fundamental change needed in acquisition is “to get back to the point where we put somebody in charge and hold them accountable,” said Hyten at an April 2017 Senate Armed Services Committee hearing.⁶³ This means “let them go do their job. And if they fail, get somebody else to go do that job,” he said. In the current set-up, “we have so many people [who] make decisions. And it takes forever to get through the process and get everybody to dot the ‘i’s and cross the ‘t’s and make sure everything’s okay. It’s almost impossible with the structure we’ve created to go fast,” he continued. This demands that the system allows people to use their best judgment and common sense.

Existing federal law, in addition to Pentagon acquisition regulations and policy, “actually allows

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you to be as streamlined as you want to be,” said Hyten. “We just have chosen to implement a process that is not responsive,” he said. Rectifying this would require eliminating “a lot of the bureaucracy that’s in the middle” and restoring acquisition authority from the program manager to a program executive officer to a service acquisition executive to a defense acquisition executive, he said. That would ideally mean “nobody else can get in between” that chain of command, he said. When a senator asked Hyten if he saw evidence that the Pentagon is seriously addressing this issue, Hyten said “no.”

But that is exactly what needs to happen. Langston would take an additional step, too: changing the metrics with which acquisition execution is gauged from the current focus on cost, schedule, and performance to “speed to capability.” He explained, “What has happened over time is it [has become] more important to deliver within cost, even if that means giving up on some performance or schedule. But schedule and cost are directly tied,” he said, noting that taking longer burns through funds. “Everybody in the system should be rewarded and measured on speed to capability, including the contracting officers and the legal people, too,” he said. “If a contracting officer cannot get a contract out in one month and instead wants to take [a much longer time], that contracting officer should be held accountable and not promoted,” he said.

Air Force Initiative—Active, Not Sitting Back —

Bunch said the Air Force acquisition office is coordinating with the Office of the Secretary of Defense on the forthcoming USD (ATL) split. “We are still in the nascent stages of figuring out how that is going to work,” he said. He said he has asked that there be clear delineations of authority between the two new offices so “we don’t have duplicative reporting ... because that only makes the job that much harder.”

The Air Force’s acquisition workforce already has been taking numerous steps to improve, he said.

“What I hope you get an appreciation for is we are not just sitting back, we are really doing a lot to try to make a difference in how we do [acquisition] ... and speed things up,” he said. “Some of those will work; some of them won’t work.” For example, the Air Force is revitalizing experimentation, having already demonstrated close air support weapons and directed energy, he said. It is now gearing up for a Light Attack Aircraft (OA-X) experiment in August 2017. “It is a step in a direction we haven’t historically done, where we are actually bringing industry in, we are letting industry go through a series of things that we are designing and experiment with what is the art of the possible and then get those results back,” he said. It’s also the flexibility of other transaction authority (OTA) to cover the agreements for this work. An OTA is an agreement that is not required to adhere to a standard format or contain terms and conditions typically necessary with contracts, grants, and cooperative agreements. Instead, acquisition officials may tailor the terms and conditions of each OTA agreement to the specific situation.

Further, the Air Force has reinvigorated its development planning at the enterprise level to help service officials formulate and evaluate viable future concepts, define operational trade space, identify technology shortfalls, and assist the operations community in refining requirements. To oversee and steer these planning efforts, the then-Air Force leadership in May 2016 established the Capability Development Council, a three-star-general-level body that the Air Force vice chief of staff chairs. The council is meant to “help make decisions and prioritize when a technology is ready to turn into a weapon system, ... when we’re ready to spend money building a program of record and move research from the Air Force Research Laboratory into an acquisition program of record,” said Gen James M. “Mike” Holmes, head of Air Combat Command, during a speech in April 2017.⁶⁴ It has allowed the service to use a “virtual” process of approving major command requirements and sending them on to the Joint Requirements Oversight Council, reducing “face to face time,” he said.

Bunch said the acquisition office also is preparing a pathfinder program to develop software for a system in its air operations centers.

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The acquisition office also is working to regain milestone decision authority, per Congress' mandate, for its space programs and other projects that the Office of the Secretary of Defense has been overseeing...

“We are going to try to do a different software methodology to try to update that,” he said. It is also continuing an initiative called “PlugFest” that invites companies that don’t normally deal with DOD to work in a virtual environment and tackle a problem. “That’s different than how we have traditionally done our activities in an attempt to be more agile,” he said.

The acquisition enterprise also continues to migrate to open mission systems for next-generation capability like the B-21 Raider bomber, he said. “I will be able to compete components and not have to go to the primes and I am not tied to that all the time, so that I can turn the technology quicker,” he said. It also is delegating authorities down to lower levels for smaller programs, said Bunch. “Our rules were written so that the PEOs [program executive officers] had to be the milestone decision authorities,” he said. “We changed our regulation and what it has done is it allows decision to be made lower in the organization, freeing up time for the PEOs to focus on the bigger things. ... It also gives the people greater job satisfaction.” The acquisition office is also encouraging PEOs to tailor how best to execute programs, said Bunch. “If you don’t need a certain document that is required, let us know, but don’t do the document. You are the ones that know your program, so tailor it around the way that you want to,” he said.

The acquisition office also is working to regain milestone decision authority, per Congress’ mandate, for its space programs and other projects that the Office of the Secretary of Defense has been overseeing, said Bunch. In February, the Air Force regained the authority for the T-X trainer program, he said. Also for space, the Air Force is also working to empower small teams for acquisitions, leveraging the quick-turnaround approach of the service’s Rapid Capabilities Office, he said. The Air Force acquisition workforce is slightly more than 37,000 personnel in total. This figure includes around 10,000 Airmen in uniform with the rest civilian professionals, Bunch said. These people oversee the research and development, test and evaluation, and procurement of the hardware

and software in the service’s acquisition portfolio, which amounts to about 40 billion dollars per year. It includes investments in sophisticated satellites, aircraft, information-gathering sensors, command and control functionality, cyberspace systems, communications networks, information technology, and weapons. “I am proud of our acquisition workforce,” said Bunch. He said it is doing well on delivering capability on cost and with the required performance. There have been challenges on the side of schedule, he noted though. The workforce has “a very challenging job, particularly if you are undersized and punching above your weight. There are things we need to continue to refine. I am not saying we are perfect. What I am saying is what we have today is the most dominant Air Force the world has ever seen ... and a lot of that is because of the great work and the partnership that our acquisition people have done with industry.”

As Bunch alludes, the workforce is indeed under strain; this requires remedy. The acquisition workforce is understaffed by several thousand personnel, said Payton, the former Air Force acquisition executive. As the workforce size has fallen, the number of complex programs and program dollars of investment the service is executing has actually grown significantly, she said. “What’s happening is the Air Force is starting new very complex programs without adding people to the workforce to execute those programs,” she said. “It is appalling how many technical people we have lost over the years and we are not replenishing them.” The Air Force Studies Board’s acquisition report shows a chart projecting that by Fiscal 2020, the service will have lost 47 percent of its lifecycle management workforce compared to Fiscal 1995 while the number of program dollars executed will have increased by 50 percent over the same span.⁶⁵ Payton said the Air Force needs to adopt business practices that would allow it to hire the best new people rapidly, and retain the most experienced technical people through bonuses, or it will continue to lose promising candidates. Private industry recruits the Air Force’s most experienced acquisition professionals and swoops up the brightest technical graduates much faster than the Air Force can entice them, she said.

Creating Change Opportunities— Disruption of the Status Quo

The split of the USD(ATL) office is “a capstone” of Congress’ acquisition reform efforts over the past several years, said William C. Greenwalt, senior fellow at the Atlantic Council’s Brent Scowcroft Center on International Security in Washington, DC.⁶⁶ He is a former deputy under secretary of defense for industrial policy, professional staff member of the Senate Armed Services Committee, and Lockheed Martin executive. He said the USD(R&E) ideally will serve as the Pentagon’s “disruptor in chief,” there to facilitate the rapid introduction of new technology into the services by utilizing the areas of DOD (e.g., the Defense Advanced Research Projects Agency, Strategic Capabilities Office, Defense Innovation Unit Experimental, and service rapid capabilities offices) “where innovation is currently being incubated and could be further enhanced under the right leadership and the right rules set.”⁶⁷ Conversely the USD(A&S) will be “the incremental reformer of the traditional [acquisition] system,” said Greenwalt. “The system cannot be totally turned on its head. Some of the things are going to have to be done

incrementally,” so the USD(A&S) will focus on “process improvements from research and development to the end of sustainment” for the existing acquisition programs, he said.

If all goes according to plan, the Department of Defense should be able to see “major benefits” of the USD(R&E)’s influence materialize in three to five years, said Greenwalt. As a measure of merit, the office could take a new acquisition program from the new

“middle-tier” category that Congress created in the Fiscal 2016 defense authorization act and field new capability in that timeframe, he said. Congress and DOD may have to adjust the new organizational structure to keep innovation flowing, he said.

Over the longer term, the USD(R&E) could take on an even more important role as “the incubator” of a new defense acquisition system, said Greenwalt. “At some point, you say, ‘OK, we have a new way of buying things that is different from the traditional acquisition system. ... We now have something that kind of bypasses that.’

... Perhaps in a decade or two, that might be the system,” he said. There is “profound potential” for it to usher in the replacement system,” he said.

There is also the possibility that a true replacement acquisition system will emerge from the services. “There is nothing saying USD(R&E) should command and control disruption and future innovation in the department,” he said. “As a matter of fact, it really should be focusing on the areas of intersection between the services and areas where the services are not disrupting. So, in an ideal world, the R&E doesn’t have anything to do because the services are doing everything they are supposed to do: they are caring for their traditional programs, disrupting their traditional programs, and moving on to the next level of innovation. ... The R&E fills the gaps. It disrupts where the services don’t want to disrupt.”

Conclusion

The sense of urgency for defense acquisition reform is clear. “Our technological superiority has been eroding,” said former Air Force acquisition chief LaPlante when he briefed lawmakers in May 2017 on the interim findings of the congressionally chartered Section 809 panel.⁶⁸ The group is identifying ways to streamline defense acquisition regulations; its final report is expected around January 2019. “While we’re doing as much as we can the traditional way, ... our peer adversaries don’t seem to be doing that,” LaPlante said. “They’re not studying things. They’re fielding things. And, what seems to be happening to us is our ability to deliver things quickly to the warfighter, other than through workarounds ... is worse than it’s ever been.” Indeed, the nation is at a “critical inflection point,” Deidre A. Lee, who chairs the panel, told the lawmakers that same day. “We must be agile enough to respond to rapidly evolving threats and fast enough to develop and deliver new capabilities within the arc of emerging threat,” said Lee, a former director of defense procurement and acquisition policy in the Pentagon.

She cited the guiding principles for defense acquisition that the panel already has identified: “Mission must come first. We have to value time. The system needs to be simplified.” Air Force program managers and other acquisition officials who embrace that mantra will be brushing up

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Requirements must be stable, realistic, and afford trade space to get the best product in a responsive time fashion. It is also important to recognize that if you have a 99 percent solution, it should not be disqualified because the other one percent of the solution is not aligned with the stipulated parameters.

against institutionalized resistance. That's where strong leadership comes in, such as an assistant secretary for acquisition, to provide the top cover for those individuals as they take advantage of the

authorities coming their way from Congress to procure items more quickly in nontraditional ways.

"The bureaucracy is going to be very reluctant to change anything. ... Yet, for us to remain ahead of our adversaries, change is the name of the game," said Dov S. Zakheim, Pentagon comptroller from 2001 to 2004 and a member of the Defense Business Board.⁶⁹ He said the best way, in fact, the "only way" to deal with a change-resistant and risk-averse culture is "to reward people for taking risks." Today, he said, the tendency is to penalize risk-takers, not encourage them. That has to change.

One means of inculcating boldness and offering acquisition professionals more opportunities for stimulating work, both at the more-junior and more-senior levels, is to sponsor "more and smaller programs," said Greenwalt, the former Pentagon industrial policy official. The idea is "rapid acquisition, rapid prototyping, but focused in on operational needs," he said. "You can give [the new capability] out to the warfighter and they can use it and test it and play with it, get the bugs out," he said. As part of this "you bring in new outside contractors to try to deal with some of these things on a fixed-price basis," he said.

This work would go beyond DOD's current science and technology (S&T) projects. "The

idea here is to incentivize the use of greater rapid prototyping, \$50-million-and-below types of projects," he said. "Once these prototypes are operationally tested and fielded, you can decide then whether to kick them into a larger program, rather than the way we do it now, which is to basically take a lot of immature technology and try to kluge it all together in a big major defense acquisition program," said Greenwalt. He said some of the projects likely will fail, but that's part of pushing the envelope.

When it comes to adding agility to a system where speed will be a key metric in attaining success, it is time to ensure that the acquisition actors are held accountable for delivering solutions in a timely fashion—especially when there is a major cost, either financial or from an operational perspective, involved with a prolonged procurement process. Requirements must be stable, realistic, and afford trade space to get the best product in a responsive time fashion. It is also important to recognize that if you have a 99 percent solution, it should not be disqualified because the other one percent of the solution is not aligned with the stipulated parameters. It is also important to ensure that lowest cost, technically acceptable parameters reflect real-world variables, not excel spreadsheet artificial stovepipes. Finally, it is important to award points for areas where future operators can grow the systems in question as the program evolves and future requirements dictate.

Implementing such measures will help the Air Force's acquisition system transform from an impediment to an enabler and best position the service to procure its next generation of capabilities in the most time-efficient manner. ★

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