



# PROCEEDINGS OF THE SEVENTEENTH ANNUAL ACQUISITION RESEARCH SYMPOSIUM

---

## **Acquisition Research: Creating Synergy for Informed Change**

**May 13–14, 2020**

**Published: March 31, 2020**

Approved for public release; distribution is unlimited.

Prepared for the Naval Postgraduate School, Monterey, CA 93943.

Disclaimer: The views represented in this report are those of the author and do not reflect the official policy position of the Navy, the Department of Defense, or the federal government.



The research presented in this report was supported by the Acquisition Research Program of the Graduate School of Defense Management at the Naval Postgraduate School.

To request defense acquisition research, to become a research sponsor, or to print additional copies of reports, please contact any of the staff listed on the Acquisition Research Program website ([www.acquisitionresearch.net](http://www.acquisitionresearch.net)).



ACQUISITION RESEARCH PROGRAM:  
CREATING SYNERGY FOR INFORMED CHANGE

# Faster Acquisition: Putting the Priority on Speed

**David M. Riel**—is currently Professor of Acquisition Management for Defense Acquisition University's Midwest region with Level III certifications in PM and PQM. His 20-year United States Air Force career includes working on a variety of programs including the F-22 Advanced Tactical Fighter and the Global Hawk Unmanned Aerial System. Riel also spent several years working as Senior Manager of Manufacturing and Continuous Improvement with one of our defense industry partners.

## Abstract

Across Congress and the DoD, a sense of urgency has arisen to provide warfighters with the latest innovative technology via rapid acquisition and fielding. However, the long-standing defense acquisition system was designed for a longer, methodical process of requirements development, phases, and milestones. To match the accelerated pace of today's technology, the DoD culture must be challenged to maintain its technological edge. Yet, cultural inculcation implies a mindset that executes speed with responsible risk-taking across the workforce. The question becomes, how is schedule prioritized versus cost and performance in the program management (PM) "iron triangle" of cost, schedule, and performance; and how has that perception of the "speed of relevance" changed in the last two years with the DoD's increased use of Fiscal Year (FY) 2016 National Defense Authorization Act's Section 804, Middle Tier Acquisition, and introduction of the Adaptive Acquisition Framework (AAF)? By conducting quantitatively based, statistically valid surveying, this research studies the perceptions of acquisition professionals as to the importance of schedule speed when compared to cost and performance via a survey conducted in FY2018 compared with one conducted in FY2020. This paper also introduces methods for consideration to accelerate schedule to help propagate and sustain a culture of rapid and meaningful innovation, streamlined processes, and responsible risk-taking.

**Two-Sentence Summary:** This paper addresses the perception of the acquisition workforce on the priority of speed within the PM "iron triangle" of cost, performance, and schedule. The research focuses on methods, culturally and programmatically, to promote schedule speed in an era where timely technological agility is desired by the DoD and congressional leadership.

**Keywords:** Schedule acceleration, Department of Defense, Middle Tier Acquisition, culture change

## Introduction

### Faster Acquisition: Putting the Priority on Speed

On November 25, 2015, Congress passed the FY2016 National Defense Authorization Act (NDAA). Embedded within its 585 pages is Section 804: Middle Tier of Acquisition (MTA) for Rapid Prototyping and Rapid Fielding. Across Congress and the DoD, there is a new sense of urgency to provide warfighters with the latest technology in the timeliest manner. Ellen Lord, Under Secretary of Defense for Acquisition and Sustainment, stated in her testimony before the Senate Armed Services Committee in December 2017 that the "current pace at which we develop advanced capability is being eclipsed by those nations that pose the greatest threat to our security, seriously eroding our measure of overmatch" (*Defense Department Acquisition Reform Efforts*, 2017, p. 4). In his 2018 National Defense Strategy, former Secretary of Defense James Mattis explained, "Today, we are emerging from a period of strategic atrophy, aware that our competitive military advantage has been eroding. ... Inter-state strategic competition, not terrorism, is now the primary concern," while calling for a "rapid, iterative approach to capability development [which] will reduce cost, technological obsolescence, and acquisition risk" (DoD, 2018, p. 1).



This call to keep pace with the global technology push finds its roots in the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD[AT&L]) Better Buying Power Initiative (BBPI) 3.0. As Frank Kendall (2015), former USD (AT&L), wrote in his memorandum dated April 9, 2015,

“The technological superiority of the United States is now being challenged by potential adversaries in ways not seen since the Cold War. Efficiency and productivity are always important, but the military capability that we provide to our Warfighters is paramount. ... We must turn our attention increasingly to our ability to innovate, achieve technical excellence, and field dominant military capabilities” (p. 1).

Characteristic of BBPI 3.0 is the shift from a previous emphasis on primarily cost reduction initiatives to one on faster delivery of superior, more adaptable technology, epitomized by long-range research and development; cybersecurity; commercial technology; prototyping/experimentation; modular open system architecture; global technology; organic engineering capabilities; and science, technology, engineering, and mathematics education (DoD, 2015).

Unfortunately, the traditional Defense Acquisition System (DAS) lends itself towards a methodical process of requirements development, phases and decision milestones, with major defense acquisition programs (MDAPs) between 1997 and 2015 taking roughly seven years from acquisition initiation to initial operational capability (USD[AT&L], 2016). The length of our former “one-size fits all” DAS, now known as Major Capability Acquisition (MCA) under the January 23, 2020, release of DoD Instruction 5000.02: Operation of the Adaptive Acquisition Framework, can impede today’s accelerated technology cycle. The risk-adverse acquisition culture needs to be challenged and changed if the DoD is to keep its technological edge. Leaders are demanding that acquisition be sped up, streamlined, and become more agile. To meet these demands, Dr. Bruce Jette (2018), the Army’s service acquisition executive, in his July 16, 2018, memorandum on leadership philosophy, advocates the need for cultural change to “effectively modernize the force” by being “assertive, flexible, adaptable and forward thinking” and to make “delivering the product the fundamental standard by which we are measured” (par. 2). This requires a changed mindset where schedule speed garners equal billing with cost and performance. This problem is evinced by the 2015 Performance of the DAS Report’s citing of “cost” 18 times in the table of contents and 86 times in the highlights, whereas “schedule” only appears six times in the table of contents and 37 times in the highlights (Franck et al., 2016). Also, Sherman and Rhoades (2010) point out, “Design decision criteria generally assign greater weight to technical performance with schedule receiving minimal weight as a decision criterion” (p. 50). Incentives can also play a role. Often requirements are set high when competing for resources, as decision-makers have little confidence that a program will be provided additional resources to create an advanced version. Also, PMs tend to be rewarded based on performance factors, with schedule adherence given little comparative weight in promotions and personnel decisions (Sherman & Rhoades, 2010).

Yet, cultural inculcation goes beyond leadership drive. It implies an organizational mindset that executes speed and efficiency with responsible risk-taking even at the lowest levels of the workforce. The question becomes, how is schedule speed prioritized versus cost and performance in the PM “iron triangle” of cost, schedule, and performance? Do lower-level workers and their leadership place value and priority on speed when compared to cost and performance? Is the workforce encouraged to take responsible risks and challenge bureaucracy to produce better systems faster? Have these perspectives changed



over the last two years, as leadership has introduced and emphasized the AAF with several pathways focused on speed? By conducting quantitatively based, statistically valid surveying, this research studies the perceptions of acquisition professionals on the importance of schedule speed in order to determine the depth that the “speed of relevance” philosophy has penetrated defense organizations. This study then introduces methods and approaches to increase the ability of program leaders to drive the philosophy deeper into their organizational structures for the purpose of creating and sustaining a culture of rapid and meaningful innovation, streamlined processes, and responsible risk-taking, while also highlighting potential government and contractor incentives for beating historical development schedules.

### ***Organizational Culture Change Challenges***

At its heart, prioritizing speed, whether via MTA or tailoring an MCA program, is about challenging the status quo. Lord, in explaining her desires to replace traditional DoDI 5000.02 practices with those more akin to the Defense Innovation Unit, cites that the “DoD needs a cultural shift that values critical thinking and taking smart risks” (Brust, 2018, par. 13). To successfully promote speed, the DoD will need to shape its organizational culture so that program offices employ professionals that pursue these new pathways, such as MTA, while retaining the core elements of their specific function (Modigliani, 2016). Lieutenant General Ostrowski—principal military deputy to the assistant secretary of the Army for acquisition, logistics, and technology—acknowledged that building a new culture in Army acquisition won’t be easy, stating, “There are people in this room that are not going to jump on this bandwagon.” However, he reminded his audience that “changing the culture is not hard in mind, because each and every one of you sitting in this room today ... you care about Soldiers. And this is about affecting Soldiers” (United States Army, 2018, p. 1).

However, the DoD’s mechanistic organizational construct, which runs deep, linking back to Frederick the Great, represents an obstacle to culture change. Mechanistic behavior implies that the organization is planned to perform like a machine in a “routinized, efficient, reliable, and predictable way” (Morgan, 2006, p. 13).” Morgan (2006) uses the military and, in particular, Frederick the Great’s practice of transforming society’s lower class members into a formable fighting force as the classic illustration of a mechanistic organization. These organizations are given to elevated levels of hierarchical structure and authority; distinctly allocated roles and responsibilities; written policies and practices; specialized, standardized tasks; and centralized decision-making processes, which research shows to be restrictive to the innovation, flexibility, and creativity needed to identify new opportunities (Hatch & Cunliffe, 2013).

However, mechanistic organization do have some advantages. The use of formalization and control reduces variation and improves predictability, leading to greater efficiencies in bringing new prototypes to fruition. However, this may require added effort since mechanistic structures tend to hold fast to past practices, such as the tenets of traditional DAS and Joint Capabilities Integration and Development System (JCIDS), instead of using new practices (e.g., MTA and agile software practices; Fiol & Lyles, 1985; Hofler, n.d.). Organizational structure is interwoven with culture, showing an established “negative correlation between centralization and innovation” (Whittinghill, 2011, p. 17). Speed requires innovative practices and questioning the status quo. A culture that significantly tailors acquisition pathways will be challenging to cultivate. For a mindset of allowing failure to be seen as a learning experience to become cultural, resilient leadership will be needed to boost the creative thought required to “go fast.” Leadership’s role will be prominent in establishing the necessary values and artifacts to create this needed cultural change.



## Quantitative Methodology

A literature search has not revealed any qualitative or quantitative research on the acquisition workforce's perception of the importance of schedule speed, or their leadership and organization's pursuit of schedule speed.

### ***Research Questions and Hypotheses***

The scientific aim of this research is to establish the need to increase and/or maintain the emphasis in schedule speed to regain/maintain technological superiority until it becomes the cultural norm. The quantitative research questions from which the survey is derived are:

1. Do acquisition workforce members perceive that conventional weapon system acquisition programs take too long, and how does that perception compare with cost and performance?
2. Do acquisition workforce members perceive that schedule is the most important consideration of the traditional PM "iron triangle" of cost, schedule, and performance?
3. Do acquisition workforce members perceive that the defense industry is incentivized to increase acquisition speed?
4. Do acquisition workforce members perceive that increased schedule speed should take priority over increased performance capabilities?

Answering these research questions through use of a survey instrument has the potential to provide the DoD with an understanding of how schedule speed is emphasized by the workforce. Especially when comparing initial answers from the first quarter of FY2018 with an identical survey collected in the first quarter of FY2020, results should allow leadership to understand whether their emphasis on speed is resonating. These efforts, over time, have the potential to bring the DoD acquisition team in line with Mattis's (2017) desire to "develop a culture of rapid and meaningful innovation, streamline requirements & acquisition processes, and promote responsible risk-taking and personal initiative" (par. 6).

Hypothesis 1: Acquisition workforce members perceive that weapons systems take too long and cost too much, while delivering adequate performance.

Expectation is that the workforce will perceive acquiring systems take too long and cost too much, with the perceived priority being performance. Current culture is focused on providing superior performance and cost control versus increasing schedule speed. Expect FY2020 results to suggest a greater perspective of "too long," with similar results on cost and performance.

Hypothesis 2: Acquisition workforce members perceive that the least important of the traditional PM "iron triangle" of cost, schedule, and performance is schedule in FY2018, but changes to "cost" or "performance" in FY2020 results.

The expectation is that workforce members will perceive schedule to be the least important in FY2018 results, resulting in a perspective that leadership is less likely to provide encouragement to take risks to increase schedule speed. However, anticipate that to shift with FY2020 results.

Hypothesis 3: Acquisition workforce members perceive that their organizations are not currently providing much incentive to increase schedule speed.





Initiatives, such as MTA, are relatively new and immature; therefore, the expectation is that most programs are not currently actively pursuing schedule speed incentives. Also, with the anticipated emphasis on performance and cost, schedule speed incentives are less likely to be perceived. However, anticipate that to shift with FY2020 results.

Hypothesis 4: Acquisition workforce members perceive that capability increases are more important than schedule speed.

Culture has been one focused on performance and cost. Schedule speed has only recently become a relevant peacetime acquisition objective. As a result, the expectation is that workforce members will value performance over speed with some expected shift with FY2020 results, as “speed of relevance” messaging takes effect.

### **Research Design**

The most appropriate research design for exploring these hypotheses is to conduct surveys that can depict the perceptions of the workforce across multiple functional areas, years of experience, DoD components, and work organizations. Questionnaires are an appropriate and relatively easy means to collect information across a varied population for studying behavioral items (Cozby & Bates, 2012). The research design entails a one-page, 14-question (including four demographic questions) questionnaire to be disseminated via an e-mail with the Opinio-developed survey or paper version to be given in Defense Acquisition University (DAU) classes to acquisition professionals. This instrument was given in first quarter FY2018 and first quarter FY2020, to explore the longitudinal results effected by an increased emphasis on schedule speed by DoD leadership over the past two years. Any completed paper versions were converted into electronic Opinio format to reap the data collection analysis and reporting tools available through Opinio.

### **Population and Sample**

FY2018 surveys were given to workforce members taking classes or attending seminars taught by DAU Midwest professors from July 2018 through early November 2018. The FY2020 surveys were distributed to students who had taken ACQ203 and PMT360 within the last three years. With a workforce population of over 100,000, a sample size of 384 participants is required to provide a precision of estimates of +5% with a 95% confidence level, whereas 96 student participants are required for +10% accuracy (Cozby & Bates, 2012). For this research, 273 surveys (FY2018) and 298 surveys (FY2020) were collected and analyzed, representing a +6% accuracy with a 95% confidence level (*Sample Size Calculator*, n.d.).

### **Measures/Instrumentation**

The survey instrument (in Appendix) was developed in FY2018 and used in FY2020 specifically for this research. Perceptions on the priority of speed, along with its effect on leadership emphasis, risk tolerance, and organizational incentive practices, were based on specific questions regarding schedule speed, as well as on a comparative analysis of participants’ perceptions of cost and performance emphasis.

The survey is divided into two sections. The first section includes ten questions employing a 5-point Likert scale for each item (1=strongly disagree; 2=disagree; 3=neutral; 4=agree; 5=strongly agree). The first three questions were directly related to participants’ perceptions of acquisition execution across cost, schedule, and performance (H1). The next three questions were created to qualitatively determine which of the traditional PM elements of cost, schedule, and performance, is deemed most important by the respondent’s



leadership (H2). The next three questions were developed to qualitatively determine perceptions of the workforce's organizations incentivizing their defense industry partners to emphasize schedule speed (H3). Question 10 was designed to better understand the workforce prioritization of capabilities versus schedule speed (H4). The term *conventional weapon system* was employed to limit responses to perceptions dealing with acquisitions not including Urgent Capability Acquisition (DoDI 5000.81), defense business systems (DoDI 5000.75), or acquisition of services (DoDI 5000.74).

### **Data Collection Procedures**

An electronic link to the questionnaire site was sent to former students, ensuring that they understood the survey was anonymous and voluntary. In addition, with the permission of instructors and consent of the students, in FY2018, a paper questionnaire was presented to complete during class, recognizing that the survey was both anonymous and voluntary. Students who did not want to participate could ignore the email, or if presented a paper copy, not accept it or return it blank. For the paper surveys, students anonymously returned the surveys to a table at the front of the room.

### **Data Analysis**

In FY2018, analysis was limited to between 266 to 272 responses per question. In FY2020, each non-demographic question was limited to between 291 to 295 responses. (Some students didn't answer every question.) Data collected did expose some significant trends in perceptions of the workforce, yet it is limited by the number of participants, providing an accuracy of +6% given a 95% level of confidence.

Questions 1 through 3 indicated the participants' perceptions of a conventional weapon systems acquisition in terms of schedule, cost, and performance, specifically asking if their perception was that weapon systems take too long, cost too much, and/or provide too little increased performance. In FY2018, notably 68.3% agreed that weapon systems took too long to complete, with 21.8% of those strongly agreeing, and only 3.0% disagreeing and no participant strongly disagreeing. The results for cost were similar with 59.6% agreeing. However, only 15.2% strongly agreed and 6.7% disagreed. The notable difference came to whether programs provided too little performance increase, with only 20.4% agreeing (of which, 2.6% strongly agreed), whereas, 25.9% disagreed (0.7% strongly disagreed). In FY2020, 76.5% agreed that conventional weapon systems took too long to complete, with 39.9% of those strongly agreeing, and 6.8% disagreeing, including 1.7% strongly disagreeing. The cost question results were similar to FY2018 with 60.5% agreeing (27.6% strongly), and only 7.5% either disagreeing or strongly disagreeing (1.4%). With regards to performance, 30.1% agreed (of which, 8.9% strongly agreed), whereas 28.1% disagreed (3.1% strongly disagreed). Figures 1A and 1B; 2A and 2B; and 3A and 3B provide the details on these three questions.





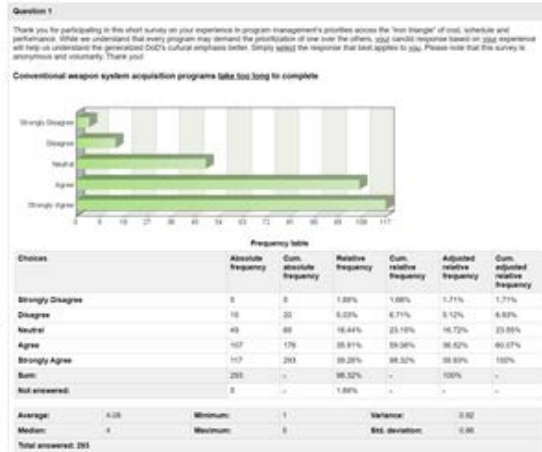
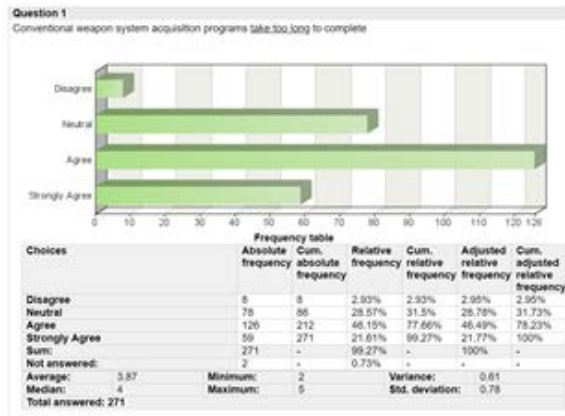


Figure 1. A: FY2018 Question 1 Results B: FY2020 Question 1 Results

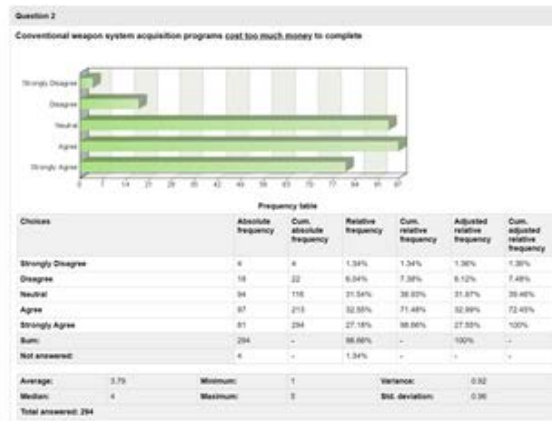
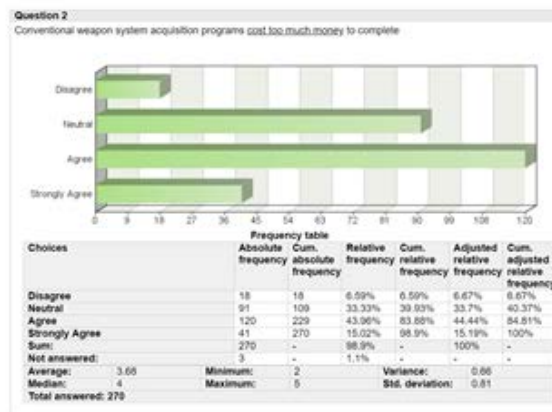


Figure 2. A: FY2018 Question 2 Results B: FY2020 Question 2 Results

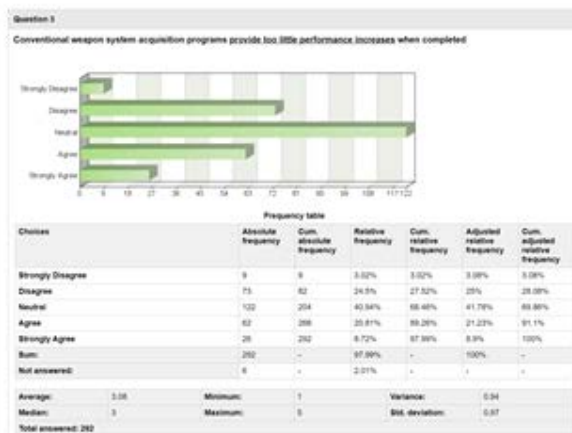
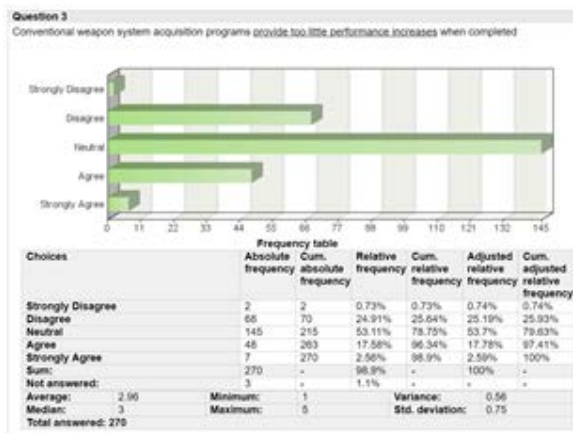


Figure 3. A: FY2018 Question 3 Results B: FY2020 Question 3 Results

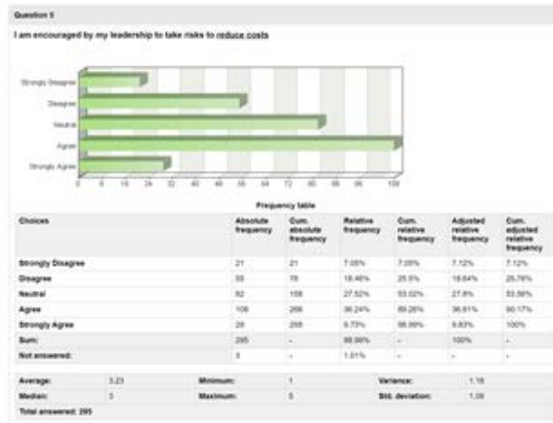
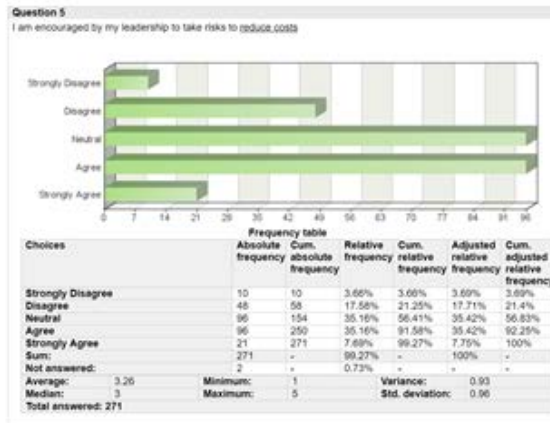


Questions 4 through 6 were the participants' perception of their leadership's encouragement for them to take risks to increase speed, reduce cost, and increase performance. These questions were developed to provide the workforce's perception of their leadership's priorities in doing whatever it would take (i.e., increased risk-taking) to meet improved schedule, cost, and performance objectives.

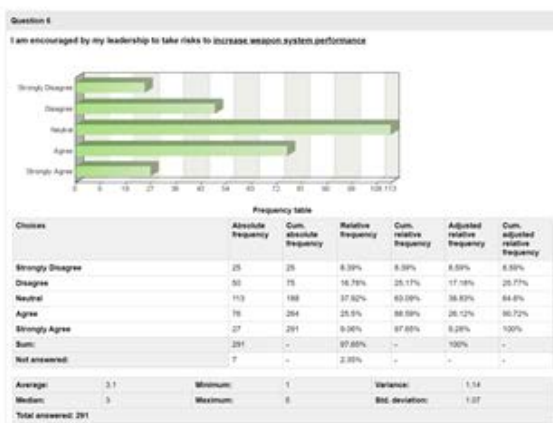
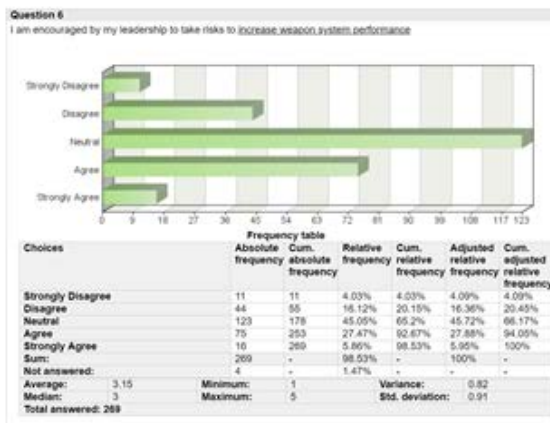
In FY2018, analysis across the three questions show similar results. Question 4 discloses that 44.0% of the participants either agreed or strongly agreed (10.3%) that their leadership encouraged them to take risks to increase speed, whereas 25.5% either disagreed or strongly disagreed (3.3%). Question 5 revealed very similar results, with 43.2% of the participants either agreed or strongly agreed (7.8%) that their leadership encouraged them to take risks to reduce cost, whereas 21.4% either disagreed or strongly disagreed (3.7%). Question 6 results varied somewhat in that 33.8% either agreed or strongly agreed (6.0%) that their leadership encouraged them to take risks to increase weapon performance, whereas 20.5% either disagreed or strongly disagreed (4.1%). In FY2020, Question 4 results were similar to FY2018 with 46.6% of the participants either agreed or strongly agreed (14.0%) that their leadership encouraged them to take risks to increase speed, whereas 28.8% either disagreed or strongly disagreed (7.2%). Question 5 shows comparable results with 46.4% of the participants either agreed or strongly agreed (9.8%) that their leadership encouraged them to take risks to reduce cost, whereas 25.8% either disagreed or strongly disagreed (7.1%). Question 6 results were comparable to FY2018 in that 35.4% either agreed or strongly agreed (9.3%) that their leadership encouraged them to take risks to increase weapon performance, whereas 25.8% either disagreed or strongly disagreed (8.6%). Figures 4A and 4B; 5A and 5B; and 6A and 6B provide the details on these three questions.



**Figure 4. A: FY2018 Question 4 Results B: FY2020 Question 4 Results**



**Figure 5. A: FY2018 Question 5 Results B: FY2020 Question 5 Results**

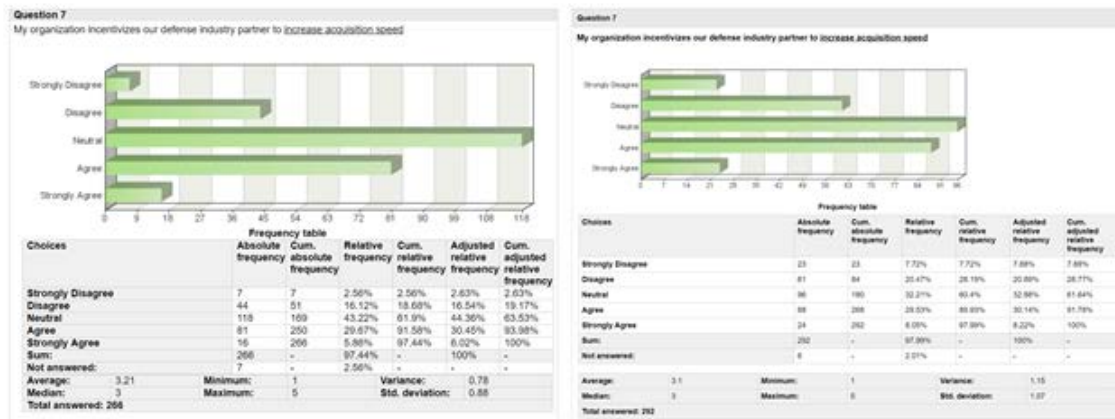


**Figure 6. A: FY2018 Question 6 Results B: FY2020 Question 6 Results**

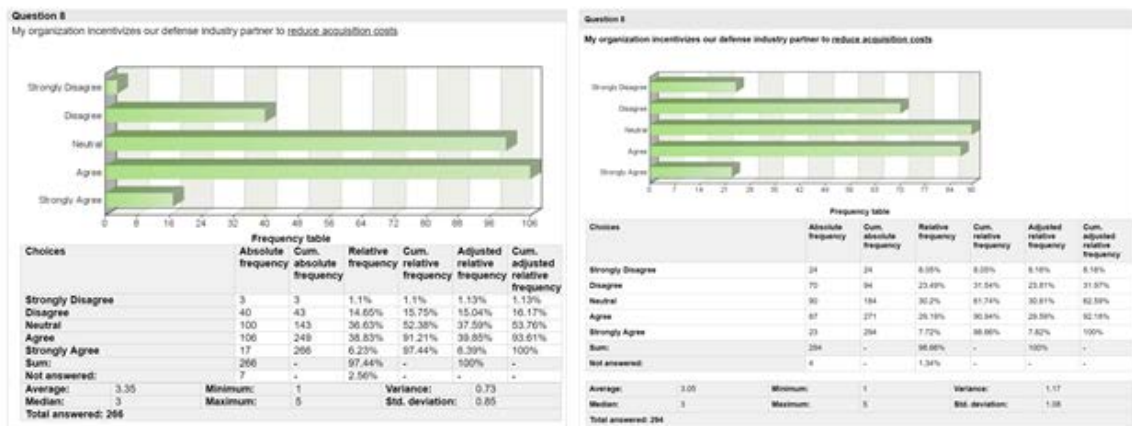
The third set of analyzed questions were the participants' perception of whether or not their organization incentivized their defense industry partners to increase acquisition speed, reduce cost, and/or increase weapon system performance. These questions were developed to provide the perception of the acquisition workforce as to if their organizations were doing what it would take (i.e., increased defense industry incentives) to meet improved schedule, cost, and performance objectives.

In FY2018, analysis of the results from Question 7 revealed that only 36.5% of the participants either agreed or strongly agreed (6.0%) that their organization incentivized their defense industry partners to increase speed, whereas 19.2% either disagreed or strongly disagreed (2.6%). Those results varied somewhat from the responses to Question 8 and Question 9, which asked for their perception on whether their organization incentivized for reduced cost and increased weapon system performance, respectively. For Question 8 on reduced acquisition costs, 46.2% of the participants either agreed or strongly agreed (6.4%), whereas only 16.2% disagreed or strongly disagreed (1.1%). Similar results were found with Question 9, where 43.6% of the respondents agreed or strongly agreed (4.1%) and only 11.3% disagreed or strongly disagreed (1.1%). In FY2020, results were similar for Question 7 with 38.4% either agreed or strongly agreed (8.2%) that their organization incentivized their defense industry partners to increase speed. However, 28.8% either disagreed or

strongly disagreed (7.9%). On Question 8, FY2020 saw 37.4% either agreed or strongly agreed (7.9%) that their organization incentivized their defense industry partners to decrease cost, and 32.0% disagreeing with 8.2% strongly. Question 9 results showed 43.4% agreeing or strongly agreeing (9.2%), whereas 20.0% disagreed, including 4.8% strongly. Figures 7A and 7B; 8A and 8B; and 9A and 9B provide the details on these three questions.



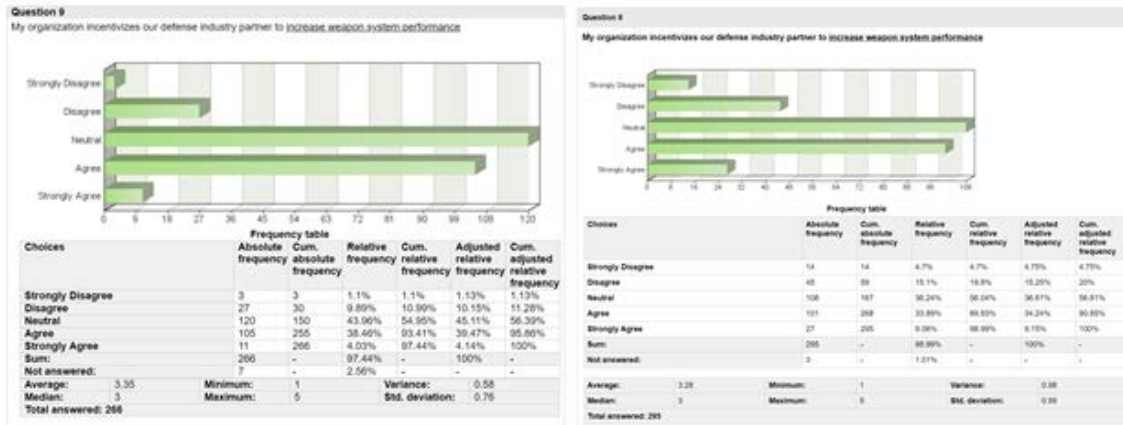
**Figure 7. A: FY2018 Question 7 Results B: FY2020 Question 7 Results**



**Figure 8. 8A: FY2018 Question 8 Results 8B: FY2020 Question 8 Results**







**Figure 9. A: FY2018 Question 9 Results 9B: FY2020 Question 9 Results**

Question 10 was designed to encourage participants to pick between performance and acquisition speed. One interpretation of MTA is to accept “a mutually agreeable 80–90% solution” as the “octane for speed” and to “constrain time and budget, not the final performance” (Roper, 2018, p. 1). In FY2018, respondents’ answers varied greatly with 26.3% of the participants either agreed or strongly agreed (4.4%) that it is more important that weapon systems are delivered faster with less capabilities, while 40.4% disagreed or strongly disagreed (7.4%), that is, it is more important to provide a more capable weapon systems requiring more time. In FY2020, 35.1% agreed or strongly agreed (14.3%) that speed mattered more, whereas 34.0% either disagreed or strongly disagreed (6.8%). Figures 10A and 10B provide the details.



**Figure 10. A: FY2018 Question 10 Results B: FY2020 Question 10 Results**

## Demographics

In FY2018, as expected with the survey’s administration being primarily performed at the DAU Midwest campus in close proximity to Wright–Patterson Air Force Base, nearly half (45.1%) of the respondents self-identified as “Air Force,” compared to 0.0% self-identifying as “Marine Corps” and only 6.6% as “Navy.” Despite the survey being equally distributed nationally across former DAU students in FY2020, the demographics were similar: USAF 39.2%; Army 30.4%; Navy 12.2%; Marines 1%. For cultural inquiry, one could posit that this



skew may affect the overall understanding of the general DoD population, as each service may have its own distinctive culture. Percent comparisons of individual questions within these groups were not conducted, as the limited data collected was not statistically significant, diminishing the ability to provide definitive quantitative results across each demographic group.

In FY2018, the “Engineering/Production, Quality and Manufacturing” career field constituted 39.9% of the participants, with a fairly even distribution of other career fields represented, whereas, in FY2020, PM accounted for 51.5% of the participants. Likewise, “years working in an acquisition career field” showed a reasonably even distribution; however, it varied between FY2018 and FY2020. For example, of the four categories, “0–2 years” was highest at 32.6% in FY2018, but the lowest (14.3%) in FY2020. In FY2018 “10+ years” was the next highest at 24.5%, and was the highest (34.4%) in FY2020. Finally, the organizational type where respondents currently work showed a relatively large percentage engaged in program offices in FY2018 (36.6%) and FY2020 (55.4%). Detailed demographic charts are available upon request.

## **Results**

Three of the four hypotheses are supported. Hypothesis 1 was supported. Participants’ responses, derived from Questions 1, 2, and 3, indicate a gap between perceptions of a weapon system taking too long to acquire (68.3%/76.5% [FY2018/FY2020] either “agree” or “strongly agree”) and costing too much (59.6%/60.5% either “agree” or “strongly agree”), whereas, the majority of the respondents (79.6%/69.9%) did not agree (either responded with “neutral,” “disagree,” or “strongly disagree”) that those systems provided “too little performance increases when completed.” Interestingly, the biggest shift was the number of respondents that “strongly agree” with the statement “Conventional weapon system acquisition programs take too long to complete,” moving from 21.8% in FY2018 to 39.9% in FY2020.

Hypothesis 2 was not supported. Analysis of Questions 4, 5, and 6 indicate that of the three primary concerns—cost, schedule, and performance—the respondents’ perception is that leadership is least willing to take risks to increase performance. In FY2018, 33.8% “agreed” or “strongly agreed” as compared to 43.2% and 44.0% for cost and schedule, respectively. The results were similar in FY2020, with 35.4% “agreed” or “strongly agreed” for risk-taking to increase performance versus 46.4% and 46.6% for cost and schedule. The anticipated response was that performance would be considered of primary importance, therefore creating an impulse for greater risk-taking. However, results may be more indicative of a risk-averse culture, with leadership being less likely to take risks on the more important concern. This, of course, is speculative, would require additional research, and, perhaps, a rewording of these three questions.

Hypothesis 3 was supported. Analysis from Questions 7, 8, and 9 revealed that the responses indicate that participants felt that their organization incentivized their defense industry partners more so for cost and performance than for increased speed. Consistently from FY2018 and FY2020, Question 8 and 9 indicated that nearly half (46.2%/37.4% for cost and 43.6%/43.4% for performance) felt that their organizations provided incentives for contractors to reduce cost and/or increase performance. However, only 36.5%/38.4% felt that their defense contractor was given an incentive to increase schedule speed.

Hypothesis 4 was also supported. In analyzing the FY2018 results of Question 10, more respondents (40.4%) either disagreed or strongly disagreed with the statement, “It is more important to provide weapon systems faster with less capabilities than slower with greater capabilities,” whereas only 26.3% either agreed or strongly agreed, indicating that as





a whole, performance is valued over schedule speed. However, a shift is seen in the results from FY2020, as the number of respondents that either disagreed or strongly disagreed (34.0%) with the statement was less than the number that either agreed or strongly agreed (35.0%). As mentioned earlier, this shift towards increasing speed at the expense of not initially fully fulfilling the capability need has been a message from DoD leadership in recent years.

The remainder of this paper offers ideas and rationale for creating a culture and environment to emphasize and incentivize increased speed, furthering the benefits of going fast. With increased speed, opportunities also exist to reduce costs, as considerable expense is incurred in maintaining the “standing army” it takes for both government and industry to manage a defense acquisition program.

### ***Driving Culture Change through Leadership***

Creating a culture focused on going faster includes practical aspects, like streamlined “contracting, budgeting, and requirements processes” as dictated by FY2016 NDAA Section 805, along with increased employee knowledge, skills, and motivation. However, long-term successful change lies in the evolution to its culture (Morgan, 2006; U.S. Congress, 2016). Culture change within the DoD can be challenging because of its mechanistic construct. Yet these difficulties can be surmounted with a common, expressed vision using cultural values and artifacts that embolden the workforce to innovate, develop, and implement tools that incentivize teams to accelerate. Strong organizational cultures “generate an almost tangible social force field of energy that empowers employees” and are associated with increased performance (Ojo, 2010, p. 4). Leadership will need to promote the value of going fast through artifacts, including social media, memoranda, signage, and success stories, and aggressively publicize for culture change to occur. This “values” layer of culture provides the mission, objectives, criteria, and other processes designed to form strategies, decision-making, and leadership actions (Duke & Edet, 2012). Mechanistic organizations are predisposed to stability as leaders instinctively seek to lessen variability and risk through controls and structure, yet they do so at the “price of diminished innovation and zeal” (Jain, 2013, p. 106), which is needed for schedule acceleration to be successful. The idea that speed is paramount in a peacetime environment, an equal partner to cost and performance, requires that “the shift goes all the way to [the] core of the culture” (Kofman & Senge, 1993, p. 17). Morgan (2006) divulges that leaders who “understand the challenge of culture change recognize the enormity of [the] task” (p. 138). Culture is not easily moved, especially one as established as the DoD. It takes a steadfast approach of repetitive reinforcement. The importance of schedule acceleration needs to be advocated repeatedly, with consistency of words, behaviors, and rewards, in order to build trust and create an environment beneficial to change (Michailova, 2000).

One service, the U.S. Air Force (USAF), is taking a leadership role in these activities. When asked what types of programs that MTA can play for USAF acquisition, Dr. William Roper, secretary of the Air Force for acquisition, responded with saying, “I’m trying to figure out during the first couple of months on the job, is there any type of program that doesn’t naturally lend itself to this authority, and I haven’t found one yet ... all of them have improved in their quality and speed” (Parks, 2018).

Organizational culture has an effect on change. Hatch and Cunliffe (2013) cite the research of Dan Denison, who “proposed that an organization’s strategy, culture and environment need to be aligned if an organization is to achieve high performance” (p. 186). If culture affects actions, then by managing culture, desired behaviors will advance. Leaders need to incentivize culture change from one that has emphasized cost control and affordability to one that stresses speed (Fairbanks, 2006). By using Ouchi’s concept of clan



control, DoD values, principles, and purpose can be socialized and internalized over time. Leadership, who control reward, recognition, and promotions, can greatly motivate behavior and the course that DoD embraces (Hatch & Cunliffe, 2013). This intent is reflected in the “Tenets of the DAS,” “DoD will showcase those [PMs] who leverage innovative strategies to meet a unique requirement.”

Yet an overemphasis on competing for rewards, where “looking good” can surpass long-term performance, may harvest short-term results harmful to long-term system success, such as neglecting producibility and sustainment (Kofman & Senge, 1993). Valuable enduring goals must be united with ethical leadership. Creating difficult, specific schedule acceleration goals, such as the five-year MTA timeline, has risks. Unintended consequences and shortsightedness can transpire. For example, the PM must still balance cost and performance against the benefits of accelerated fielding. Demanding schedule objectives can effect ethical conduct, as single-mindedness and ambition, could prompt PM teams to fixate on accomplishing schedule objectives. Items, such as engineering a producible, reliable design, preserving configurations, planning for logistical footprint, and upholding maintainability and reliability, must be accounted for early in the design process. Locke and Latham (2009) elucidate that the possible shortcomings of goal-setting can be assuaged by attention and ethical emphasis from leadership, sharing that “organizations cannot thrive without being focused on their desired end results any more than an individual can thrive without goals to provide a sense of purpose” (p. 22). Leadership is attempting to manage this potential of short-sightedness through another tenet of the DAS, emphasizing sustainment through a “sustainment strategy throughout the entire system life cycle” and the “involve[ment of] end users early on in program development to capture sustainment requirements up front.”

### ***Using Critical Chain Project Management and Continuous Process Improvement to Increase Speed***

During an interview with a program executive officer (PEO), the PEO explained that historical data indicated that their engineering, manufacturing, and development (EMD) phase should take 72 months. However, warfighter needs were driving the program office to offer industry financial incentives for a 66-month EMD. One scheduling philosophy being explored to manage such an aggressive schedule was critical chain project management (CCPM), introduced in the early 1990s by Eliyahu Goldratt. A major premise behind this philosophy is to aggressively schedule by eliminating schedule safety margins for each individual task, that is, shorten each task’s duration and then put those margins in strategically placed buffers to be used as required. The practicality of adopting this approach lies in Goldratt’s assertion that individual safety margins incur two conditions that lead these more conservative schedules to become self-fulfilling prophecies—Parkinson’s Law and the Student Syndrome (Goldratt, 1997). Parkinson’s Law states that “work expands so as to fill the time available for its completion” (Parkinson, 1960). Given a certain amount of time to complete a task, individuals will add work and detail to fill the time given to them. Equally culpable is Student Syndrome, commonly referred to as procrastination. People tend to put off a given task as long as possible based on its due date. Of course, both practices, especially when coupled with conservative scheduling and the challenges created by the complexity and uncertainty of defense acquisition, can lead to negative schedule variance. Adoption of CCPM by USAF and Marine Corps depots for maintenance, repair and overhaul (MRO) work, has led to some successes.

In FY2000, Warner–Robins Air Logistics Center needed about 390 “flow days” to overhaul and repair C-5A aircraft, resulting in late deliveries and gross cost overruns (Srinivasan & Best, 2006). Over the next five years, the WR-ALC team instituted numerous



lean manufacturing and production initiatives, driving the flow days to 247 days. Yet due to high aircraft demand, the pressure was still on to further reduce days, so the team turned to CCPM in April 2005. Experts decided on a 33% reduction in flow days, targeting 160 days to complete repair and overhaul activities, which would result in an additional five aircraft available per year beyond the already impressive gains. Using the techniques and principles of CCPM, the team was able to achieve 171 days by October 2005 (Srinivasan & Best, 2006).

The Marine Corps Logistics Base (MCLB) in Albany, GA, is responsible for the repair and overhaul of a variety of USMC combat material. Much like WR-ALC, MCLB was having difficulties in maintaining MRO schedules to meet warfighter demand, so they turned to lean manufacturing/production as well as Goldratt's Theory of Constraints (ToC) (Srinivasan et al., 2004). After a pilot program proved successful, full implementation began in April 2002. Despite ample capacity, the scheduling system proved to be the root cause of the slowdowns, as product was distributed to the floor without regard for resource availability, a key factor that CCPM mitigated. With CCPM implemented, results were impressive. Schedule adherence climbed to 99% and cost reduced by 25 to 30%; that is, throughput increased with no added cost (Srinivasan et al., 2004). One of the nonintuitive results of schedule acceleration is often cost reduction. This is caused by reducing direct costs for level-of-effort staff (such as PMs, business managers, and contracting) and indirect costs, such as overhead, resource opportunity costs, and inflation costs (Mohan, 2008).

These impressive results are dependent on more than just CCPM, a scheduling method. To achieve speed while retaining performance and reducing cost, a more holistic approach, continuous improvement (CI), is required (Ghaffari & Emsley, 2015). While implementation of CI methods, such as ToC, Six Sigma, and Lean is beyond the scope of this research, there is consensus about the criticality of CI being instilled into the culture rather than being a program to implement. Dr. Jeffrey Liker (2004), author of *The Toyota Way*, has written that "most attempts to implement lean have been fairly superficial ... without understanding lean as an entire system that must permeate an organization's culture" (p. 7). James Womack, credited with escalating the use of Lean in the United States, writes, "The big danger is that it becomes a 'program' that everyone is doing as a staff exercise but which no one understands and no one believes in. ... It inevitably will fail" (Industry Week, 2005, p. 5). A former defense industry manager for CI writes, "It became apparent that if we were to successfully attain an attitude of continuous improvement—faster, better, cheaper—we needed to create a culture that would allow lean to thrive" (Riel, 2012, p. 35).

Culture change is difficult and requires sustained leadership drive. A shared, articulated vision can help overcome these challenges by using cultural values and artifacts that inspire workers to change from an emphasis on long, highly performance ambitious programs, such as the F-22 and the F-35, to a schedule-driven, 80 to 90% capability approach. Take for example, the leadership thrust being demonstrated by Dr. Roper. Much in the spirit of lean and its tool, value-stream-mapping, he has challenged the entire USAF acquisition community working within the traditional DAS to "start with a traditional acquisition plan and remove all steps that aren't needed with brutal minimalism" (Roper, 2018, par. 3). Shifting culture will take time and persistence. Yet, even with a desire to use CCPM and a CI culture, DAS has major impediments that exist, such as how the earned value management system (EVMS) is constructed.

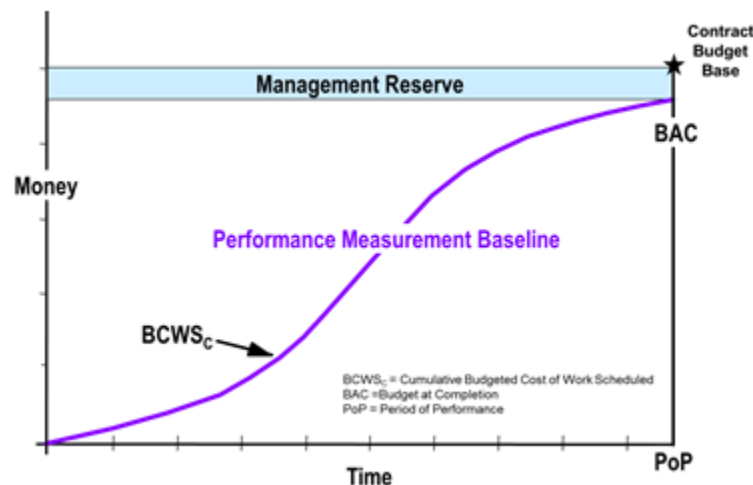
### ***Schedule Management Reserve***

During an interview with a USAF PEO, it was learned that EVMS provides a disincentive to the PM teams from aggressively tackling schedule. If a program builds its



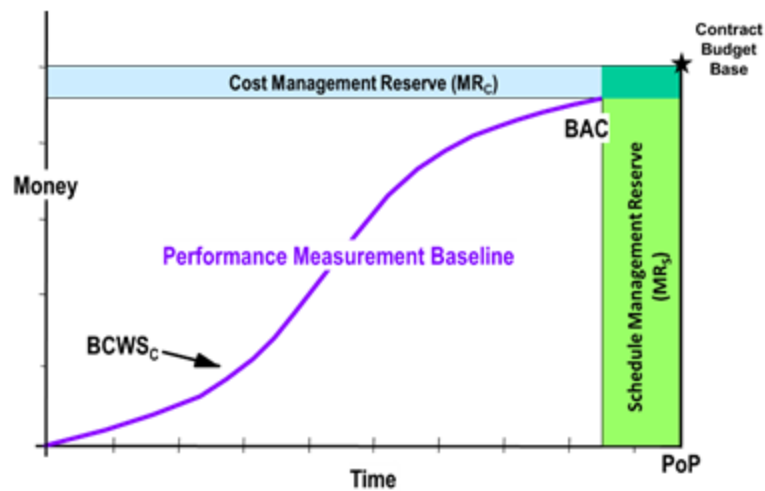
performance measurement baseline (PMB) to an accelerated schedule, any deviation to that aggressive schedule paints an unflattering picture in their monthly acquisition reports as negative schedule variance, despite still being well within the established contractual period of performance. If the program using EVM manages to adhere to an incentivized 66-month schedule instead of the contractual 72-month schedule, the cumulative budgeted cost of work scheduled (BCWS) is 100% complete at 66 months. Therefore, even being on track for a 69-month delivery will show a significant negative schedule variance, reflecting poorly on both government and contractor PMs. Despite the GAO (2015) asserting that schedule reserve (or margin) is a best practice, a fundamental limitation of the current EVMS is that, while the system allows for the contractor to set aside management reserve for cost to account for project uncertainties, the same does not hold true for schedule. To avoid negative perceptions and reporting, the contractor would need to establish two separate integrated master schedules (IMS)—one submitted for the monthly Integrated Program Management Report (IPMR) Format 6 and the other being aggressively worked by their internal team to reap the incentives, creating additional work and potential confusion.

Instead, in order to encourage teams to aggressively pursue schedule acceleration, EVMS should include a management reserve for schedule (MRs). The following example follows a program being financially incentivized to deliver up to six-months early on EMD, using MR<sub>s</sub>. Figure 11 illustrates what the typical EVMS start point would be for a program assuming a contractual period of performance (PoP) of 60 months. The PMB would be established at the initial integrated baseline review (IBR) held within 180 days of contract award.



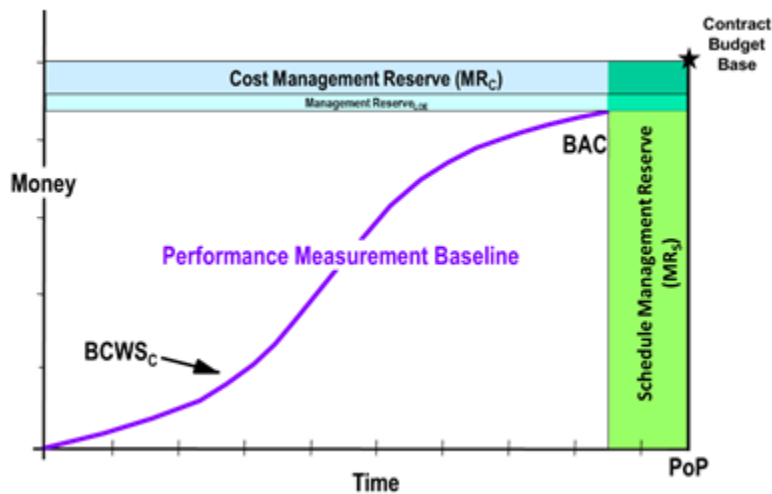
**Figure 11. Typical EVMS at the Initial Integrated Baseline Review (IBR)**

The contractor PM is allowed, and typically encouraged, to hold back cost management reserve (MR<sub>c</sub>) to address uncertainties. However, no such mechanism currently exists for schedule reserve, despite potential financial gain via incentives for early delivery. Therefore, the contractor is incentivized to tackle a profit-generating, aggressive schedule outside of EVMS. EVMS should be adapted to provide visibility to the schedule reserve being financially incentivized, such as those being proposed by MTA. In Figure 12, the contractor, financially incentivized to deliver six months early (54 months), has created a schedule management reserve (MR<sub>s</sub>) of nine months. Note that the contract PoP remains at 60 months.



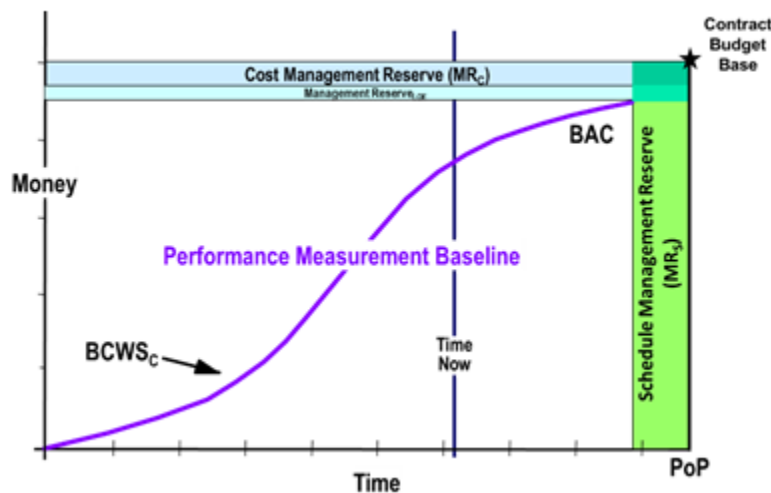
**Figure 12. Adapted EVMS with Schedule Management Reserve (MR<sub>s</sub>)**

Whether the contractor decides to use CCPM or some other schedule reserve methodology, EVMS now accounts for their aggressive scheduling, providing the contractor PM a schedule reserve for when that aggressive scheduling does not come to fruition. When MR<sub>s</sub> is set aside, the contractor must also plan for the cost associated with that schedule in their MR<sub>C</sub>. Assuming costs were negotiated on a PoP of 60 months, nine months of “standing army” along with the associated indirect costs need to be reserved to cover schedule increases beyond the 51 months. Every day over the 51-month aggressively-planned delivery date (to which the budget at completion [BAC] is tied) results in added costs for level-of-effort personnel and associated indirect costs that were negotiated in the contract budget base. This discrete cost can be calculated and accounted for during the IBR as a separate cost management reserve for level of effort (MR<sub>LOE</sub>). MR<sub>LOE</sub> can and should be discretely understood, as each element of the “standing army” was discretely bid and negotiated, along with forward rate pricing agreements in place to capture indirect cost implications. Figure 13 depicts this relationship and the potential IBR results for the adapted EVMS with a 60-month PoP effort.



**Figure 13. Adapted EVMS with Schedule Management Reserve (MR<sub>S</sub>) and Level of Effort Cost Management Reserve (MR<sub>LOE</sub>)**

As the project moves forward, inevitably management reserve will be applied to account for uncertainties and aggressive planning. Figure 14 demonstrates a fictitious scenario where the program at Month 37 depicts two months of MR<sub>S</sub> used, along with MR<sub>LOE</sub> needed to cover “standing army” expenses. During the 37-month duration, other uncertainties have also eaten into the standard MR<sub>C</sub>.



**Figure 14. Adapted EVMS Progressed to Month 37**

An adapted EVMS holds great promise for encouraging contractors to pursue more aggressive scheduling and provides a single, transparent opportunity for managing that behavior. Nevertheless, adopting this new EVMS comes with some potential pitfalls. First, trust must be established that functional leaders and control account managers will not be persecuted for missing the new aggressive schedules. The resultant mistrust will lead back



to conservative scheduling. Simply stated, in today's culture, one tends to be held accountable to a particular date, whether that date was derived conservatively or aggressively. For example, if one were to agree to a seven-day aggressive schedule and the individual task took eight days, they would likely come under fire. However, if that same individual could convince you that it was a 10-day effort, which includes the task's uncertainty built in, and the effort took nine days, they'd be applauded. Consequently, it's not hard to see why schedules are built conservatively using individual task uncertainty. Unfortunately, Parkinson's Law and the Student Syndrome then resume their prominent roles, negating the opportunity for war-winning capabilities being delivered faster.

Another potential pitfall is the government misinterpreting the schedule performance index (SPI). If the SPI is sub-1.0, the government may interpret the contract being in a "behind-schedule" condition, whereas the contractor may only be behind their aggressive schedule. Conversely, if the contractor has used 90% of their MR<sub>S</sub>, but has only completed 50% of the work, but is still indicating an SPI of 1.0 as the contractor revives the PMB with MR<sub>S</sub>, the government PM team needs to understand that the program delivering on-time (PoP) is likely in trouble. Unbounded use of MR<sub>S</sub> is not recommended. Similar to the EVMS rules that govern the use of MR<sub>C</sub>, MR<sub>S</sub> should be bounded within the confines of their individual task buffers. To maintain EVMS integrity as an early warning signal, just like today's MR<sub>C</sub> is not to be used to hide cover overruns, MR<sub>S</sub> should not be used to cover schedule overruns beyond those attributed to the schedule's aggressive stance. If an individual task was bid to take 10 days and then was aggressively scheduled for seven days, a maximum of three days of MR<sub>S</sub> should be reallocated to the baseline. Days 11 and beyond should reflect as a schedule variance.

The bottom line is that the government PM team needs to fully understand the IMS and how the MR<sub>S</sub> is being used, similar to their current need to understand MR<sub>C</sub> use. Just as the contractor has the contractual responsibility to report MR<sub>C</sub> with their monthly IPMR Format 5, so too would the contractor be required to report any MR<sub>S</sub> and MR<sub>LOE</sub> allocation in the preceding month. Any degradation of MR<sub>S</sub> should also create a degradation in MR<sub>LOE</sub>. The government team must use that information to accurately assess the schedule and cost health of the program. One key metric would be the usage of and remaining available schedule in the different buffers, particularly the project reserve.

Finally, the government in preparing for the IBR should anticipate and not become alarmed by a higher-than-typical, combined cost MR, as the cost MR should discretely contain both the MR<sub>C</sub> for uncertainties and additional management reserve for the level of effort personnel (MR<sub>LOE</sub>) tied to schedule usage.

## Conclusions and Recommendations

As former Secretary of Defense Mattis (2017) cited the need to "develop a culture of rapid and meaningful innovation, streamline requirements and acquisition processes, and promote responsible risk-taking and personal initiative" (par. 6), and as Congress has given the DoD the authority to bypass DAS and JCIDS in favor of increasing priority on speed, it is incumbent upon DoD organizations to find ways to incentivize industry and for DoD leadership to shape the culture towards more prioritization and risk-taking to go faster. Recognizing the perceptions of the defense acquisition workforce, as demonstrated by their response to the survey contained herein, and the historical prioritization of performance and cost, DoD leadership must be resilient in their encouragement of, incentivizing of, and persistent pursuit of speed. Developing a "go fast" culture and using some of the techniques and opportunities illustrated herein will require a leadership-centered tactic. Leaders desiring



a culture that gives equal precedence to schedule as to cost and performance face a formidable challenge. They should understand the effort that it requires.

Current acquisition tools, of which EVMS is but one example, should be challenged to ensure that they do not impede the timely incorporation of innovative technology or use of proven commercial technology. Leadership must generate rewards and recognition consistent with going faster versus bias toward cost control to aid the transition to a more balanced schedule–cost–performance program management perspective; that is, you reap what you reward. It will take a leadership-driven, determined emphasis to transform to a culture that prioritizes “speed first” in a peacetime environment.

More comprehensive quantitative research and longitudinal studies are advocated to appreciate if the defense acquisition workforce develops an equitable consideration of schedule versus cost and performance as an indicator of cultural transferal success. Further research is recommended studying early MTA programs as they produce results in order to track their methodology’s impact on not only development cost and performance, but also on other acquisition imperatives, such as production cost, sustainment considerations, and warfighter integration.

## References

- Brust, A. (2018). *DoD’s acquisition and sustainment chief shares path forward for new office*. Federal News Radio. Retrieved from <https://federalnewsradio.com/defense-main/2018/05/dods-acquisition-and-sustainment-chief-shares-path-forward-for-new-office/>
- Cozby, P. C., & Bates, S. C. (2012). *Methods in behavioral research* (11th Ed). New York, NY: McGraw-Hill.
- Department of Defense Acquisition Reform Efforts: Hearing before the Committee on Armed Services United States Senate* (2017). Retrieved from [https://www.armed-services.senate.gov/imo/media/doc/17-92\\_12-07-17.pdf](https://www.armed-services.senate.gov/imo/media/doc/17-92_12-07-17.pdf)
- DoD. (2015). *Better Buying Power 3.0 fact sheet* [Fact Sheet]. Washington, DC: DoD. Retrieved from <https://defenseinnovationmarketplace.dtic.mil/wp-content/uploads/2018/02/BBP3.0FactSheetFINAL.pdf>
- DoD. (2018). *Summary of 2018 national defense strategy*. Retrieved from <https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>
- Duke, J., & Edet, G. H. (2012). Organizational culture as a determinant of non-governmental organization performance: Primer evidence from Nigeria. *International Business and Management*, 1, 66.
- Fairbanks, W. P. (2006). Implementing the transformation vision. *Joint Forces Quarterly*, 42(3), 36–42.
- Fiol, C. M., & Lyles, M. A. (1985). Organizational learning. *Academy of Management. The Academy of Management Review*, 10(4), 803–813. Retrieved from <http://search.proquest.com/docview/210944840?accountid=40390>
- Franck, R., Hildebrandt, G., & Udis, B. (2016). Toward realistic acquisition schedule estimates. *Proceedings of the Thirteenth Annual Acquisition Research Symposium: Wednesday Sessions*, 1, 95–116. Retrieved from <http://acqnotes.com/wp-content/uploads/2017/08/Toward-Realistic-Acquisition-Schedule-Estimates.pdf>
- GAO. (2015). *Schedule assessment guide: Best practices for project schedules* (GAO-16-89G). Washington, DC: Author.



- Ghaffari, M., & Emsley, W. (2015). Current status and future potential of the research on critical chain project management. *Surveys in Operations Research and Management Science*, 20, 43–54.
- Goldratt, E. M. (1997). *Critical chain*. Great Barrington, MA: North River Press Publishing.
- Hatch, M., & Cunliffe, A. L. (2013). *Organization theory: Modern, symbolic, and postmodern perspectives*. Oxford, England: Oxford University Press.
- Hofler, D. (n.d.). Mechanistic organizations. In *Reference for Business, Encyclopedia of Management* (2nd ed.). Retrieved from <http://www.referenceforbusiness.com/management/Mar-No/Mechanistic-Organizations.html>
- IndustryWeek: Leadership in Manufacturing (2005, May 4). *Bonus Q&A from the IndustryWeek webcast: Lean manufacturing visionary James Womack on frontiers of lean thinking*. Lean. Retrieved from <https://www.lean.org/Downloads/IW.pdf>
- Jain, P. (2013). Confessions of an Enron executive. *Emergence: Complexity & Organization*, 15(2), 104–109.
- Jette, B. (2018). *Memorandum to the ASA (ALT) team* [Memorandum]. Washington, DC: U.S. Department of the Army.
- Kendall, F. (2015, April 9). *Implementation directive for Better Buying Power 3.0—Achieving dominant capabilities through technical excellence and innovation* [Memorandum]. Retrieved from [https://www.acq.osd.mil/fo/docs/betterBuyingPower3.0\(9Apr15\).pdf](https://www.acq.osd.mil/fo/docs/betterBuyingPower3.0(9Apr15).pdf)
- Kofman, F., & Senge, P. M. (1993). Communities of commitment: The heart of learning organizations. *Organizational Dynamics*, 22(2), 4–23.
- Liker, J. (2004). *The Toyota way: 14 management principles from the world's greatest manufacturer*. New York, NY: McGraw-Hill.
- Locke, E. A., & Latham, G. P. (2009). Has goal setting gone wild, or have its attackers abandoned good scholarship? *Academy of Management Perspectives*, 23(1), 17–23.
- Mattis, J. (2017, October 5). *Guidance from Secretary Jim Mattis* [Memorandum]. Washington, DC: DoD. Retrieved from <https://dod.defense.gov/Portals/1/Documents/pubs/GUIDANCE-FROM-SECRETARY-JIM-MATTIS.pdf>
- Michailova, S. (2000). Contrasts in culture: Russian and Western perspectives on organizational change. *Academy of Management Executive*, 14(4), 99–112.
- Modigliani, P. (2016). Speed and agility: How defense acquisition can enable innovation. *Proceedings of the Thirteenth Annual Acquisition Research Symposium: Thursday Sessions*, 2, 135–149. Retrieved from <https://apps.dtic.mil/dtic/tr/fulltext/u2/1016772.pdf>
- Mohan, S. (2008). Schedule acceleration: What, why, and how? *AACE International Transactions*, PS 13-1–13-5.
- Morgan, G. (2006). *Images of organization*. Thousand Oaks, CA: Sage Publications.
- Ojo, O. (2010). Organisational culture and corporate performance: Empirical evidence from Nigeria. *Journal of Business Systems, Governance & Ethics*, 5(2), 1–12.
- Parkinson, C. N. (1960). *Parkinson's law: Or the pursuit of progress*. London, England: John Murray.
- Parks, S. (2018, June 6). *Middle tier acquisition interview* [Video]. DAU. Retrieved from [https://media.dau.mil/media/PanelDiscussion onMiddleTierofAcquisition/1\\_me3rb1m2](https://media.dau.mil/media/PanelDiscussion onMiddleTierofAcquisition/1_me3rb1m2)
- Riel, D. (2012, July–August). Lean implementation: A three-pronged attack. *Defense AT&L Magazine*, 34–36.



- Roper, W. (2018a, August 10). *DoDI 5000.02 and rapid acquisition – Yes, rapid!* [Memorandum]. Washington, DC: Assistant Secretary of the Air Force for Acquisition. Retrieved from <https://aida.mitre.org/wp-content/uploads/2018/08/DoDI-5000.02-and-Rapid-Acquisition-Dr-Roper.pdf>
- Roper, W. (2018b, 10 April). *Seven steps for incorporating rapid prototyping into acquisition* [Memorandum]. Washington, DC: Assistant Secretary of the Air Force for Acquisition. Retrieved from <http://acqnotes.com/wp-content/uploads/2018/05/Air-Force-Incorporating-Rapid-Prototyping-into-Acquisition.pdf>
- Sample size calculator. (n.d.). Survey Monkey. Retrieved from <https://www.surveymonkey.com/mp/sample-size-calculator/>
- Sherman, J. D., & Rhoades, R. (2010). Cycle time reduction in defense acquisition. *Research-Technology Management*, 53(5), 46–54. Retrieved from <https://doi.org/10.1080/08956308.2010.11657650>
- Srinivasan, M. M., & Best, W. D. (2006, March). Back on the runway: The United States Air Force meets critical chain project management. *APICS Magazine*, 20–24. Retrieved from <http://www.tocca.com.au/newsletters/V2N4/WRALC%20Story.pdf>
- Srinivasan, M. M., Jones, D., & Miller, A. (2004). Applying theory of constraints principles and lean thinking at the Marine Corps Maintenance Center. *Defense Acquisition Review Journal*, 135–143.
- Under Secretary of Defense (Acquisition, Technology, and Logistics). (2016). *Performance of the defense acquisition system, 2016 annual report*. Retrieved from <https://www.acq.osd.mil/fo/docs/Performance-of-Defense-Acquisition-System-2016.pdf>.
- Under Secretary of Defense (Acquisition, Technology, and Logistics). (2017). *Operation of the defense acquisition system (DoDI 5000.2)*. Washington, DC: DoD.
- United States Army Acquisition Support Center. (2018, January 25). Ostrowski outlines Army plan to streamline acquisition. USAASC. Retrieved from <https://asc.army.mil/web/news-ostrowski-outlines-armys-plan-to-streamline-acquisition/>
- United States Congress. (2016). FY2016 National Defense Authorization Act.
- Whittinghill, C. (2011). *An evaluation of the perceived organizational culture and innovative climate of a department of defense community of organizations* [Dissertation, University of Alabama in Huntsville]. Proquest Dissertations Publishing. Retrieved from <http://search.proquest.com/docview/875885915?accountid=40390>



## Appendix

9/20/2018

Survey

### PM Priorities

#### Program Management Priorities

Thank you for participating in this short survey on your experience in program management's priorities across the "iron triangle" of cost, schedule and performance. While we understand that every program may demand the prioritization of one over the others, your candid response based on your experience will help us understand the generalized DoD's cultural emphasis better. Simply select the response that best applies to you. Please note that this survey is anonymous and voluntarily. Thank you!

1. Conventional weapon system acquisition programs take too long to complete  
☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree
2. Conventional weapon system acquisition programs cost too much money to complete  
☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree
3. Conventional weapon system acquisition programs provide too little performance increases when completed  
☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree
4. I am encouraged by my leadership to take risks to increase schedule speed  
☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree
5. I am encouraged by my leadership to take risks to reduce costs  
☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree
6. I am encouraged by my leadership to take risks to increase weapon system performance  
☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree
7. My organization incentivizes our defense industry partner to increase acquisition speed  
☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree
8. My organization incentivizes our defense industry partner to reduce acquisition costs  
☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree
9. My organization incentivizes our defense industry partner to increase weapon system performance

<https://survey.dau.mil/opinio/s?s=8752>

1/2





9/20/2018

Survey

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

10. It is more important to provide weapon systems faster with less capabilities than slower with greater capabilities

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

Demographics

11. Branch of Service

☐ Army ☐ Navy ☐ Marine Corps ☐ Air Force ☐ Other DoD (i.e., DCMA, DLA)

12. My primary acquisition career field is:

☐ Contracting/Financial Mgt ☐ Engineering/PQM ☐ Program Management ☐ Logistics/Supply ☐ Other

13. Years working in acquisition career field

☐ 0-2 yrs ☐ 2-5 yrs ☐ 5-10 yrs ☐ 10+ yrs

14. I currently work:

☐ In program office ☐ On staff ☐ In a research laboratory ☐ In contractor facility/regional office ☐ Other

Save

Finish

Powered by  
[Opinio Survey Software](#)

<https://survey.dau.mil/opinio/s?s=8752>

2/2







ACQUISITION RESEARCH PROGRAM  
GRADUATE SCHOOL OF DEFENSE MANAGEMENT  
NAVAL POSTGRADUATE SCHOOL  
555 DYER ROAD, INGERSOLL HALL  
MONTEREY, CA 93943

[WWW.ACQUISITIONRESEARCH.NET](http://WWW.ACQUISITIONRESEARCH.NET)