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An analysis of Army rapid acquisition

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JOINT APPLIED PROJECT

AN ANALYSIS OF ARMY RAPID ACQUISITION

September 2015

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AN ANALYSIS OF ARMY RAPID ACQUISITION

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Submitted in partial fulfillment of the requirements for the degree of

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from the

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AN ANALYSIS OF ARMY RAPID ACQUISITION

ABSTRACT

The purpose of this research is to determine if current regulations support a repeatable and manageable rapid acquisition process. The methodology used to analyze the research is the knowledge value-added theory and data extrapolated from selected acquisition reports. The results of our analysis demonstrate a need for an institutionalized rather than ad hoc rapid acquisition process. The recommendation is to cull pieces from the various rapid acquisition options currently available to develop a process that is repeatable and manageable.

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LIST OF ACRONYMS AND ABBREVIATIONS

ADM   acquisition decision memorandum
AIAS   acquisition information assurance strategy
ANPP   Apple new product process
AOA   analysis of alternatives
APB   acquisition program baseline
APC   acquisition program candidate
APO   Army Project Office
APUC   average procurement unit cost
AS   acquisition strategy
ASOM   acquisition system operating model

BBP   better buying power

CALL   Center for Army Acquisition Lessons Learned
CAPE   Cost Assessment & Program Evaluation
CCA   Clinger-Cohen Act
CCE   component cost estimate
CCMD   combatant command
CCP   component cost position
CDD   capability development document
CDR   critical design review
CDRT   capabilities development for rapid transition
CIO   chief information officer
CM   cruise missile
CMDS   cruise missile defense system
COL   colonel
COTS   commercial off the shelf
CPCP   corrosion prevention control plan
CPD   capability production document

DAPP   defense acquisition pilot program
DARPA   Defense Advanced Research Projects Agency
DAS   Defense Acquisition System
DE&S   defense equipment and support
DFARS   defense federal acquisition regulation supplement
DOD   Department of Defense
DODI   *Department of Defense instruction*
DT   developmental test
DR   directed requirement

EMD	engineering and manufacturing development
EUL	economic useful life
EUT	early user test
FAR	Federal Acquisition Regulation
FOC	full operational capability
FReM	*Government Financial Reporting Manual*
FY	fiscal year
GAO	Government Accountability Office
GDP	gross domestic product
GO	general officer
GOCO	government-owned, contractor-operated
GOTS	government off the shelf
HASC	House Armed Services Committee
HQDA	Headquarters Department of the Army
ICD	initial capabilities document
IDIQ	indefinite delivery indefinite quantity
IED	improvised explosive device
IOC	initial operational capability
IOT&E	initial operational test & evaluation
IT	information technology
IPT	integrated process team
IUID	item unique identification
IWN	immediate warfighter need
JCAAMP	joint IED defeat capability approval and acquisition management process
JCIDS	joint capabilities integration development system
JDAM	joint direct attack munition
JDAM-ER	JDAM extended range
JEON	joint emergent operational needs
JIDA	Joint Improvised-Threat Defeat Agency
JIEDDO	joint improvised explosive device defeat organization
JLENS	joint land attack cruise missile defense elevated netted sensor system
JRAC	Joint Rapid Acquisition Cell
JUON	joint urgent operational needs
KVA	knowledge value-added
LCSSP	life cycle signature support plan
LRIP	low rate initial production

LTC	lieutenant colonel
MAIS	major automated information system
M-ATV	MRAP all-terrain vehicle
MDD	materiel development decision
MDA	milestone decision authority
MDAP	major defense acquisition program
MOD	Ministry of Defense
MRAP	mine resistant ambush protected
MRV	MRAP recovery vehicle
MSA	materiel solution analysis
MS A	milestone A
MS B	milestone B
MS C	milestone C
NDIA	National Defense Industrial Association
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OIL	observations, insights, and lessons
ONS	operational needs statement
OSS&E	operational safety, suitability & effectiveness
PAUC	program acquisition unit cost
PDR	preliminary design review
PEO	program executive officer
PEO CS&CSS	Program Executive Office Combat Support & Combat Service Support
PEO MS	Program Executive Office Missiles and Space
PdM	product manager
PM	program manager
PM SMS	Program Manager Soldier Maneuver Sensors
POR	program of record
PPP	program protection plan
PSM	product support manager
RAA	rapid acquisition authority
RAM	rockets, mortars, and artillery
REF	rapid equipping force
RFI	rapid fielding initiative
ROI	return on investment
SAR	selected acquisition report
SASC	Senate Armed Services Committee
SDSR	Strategic Defense Security Review

SEP	soldier enhancement program
SEP	systems engineering plan
SIG	senior integration group
SME	subject matter expert
SMT	surface moving target
SOCOM	special operations command
SSRO	single source regulations office
TBM	tactical ballistic missile
TDS	technology development strategy
TES	test & evaluation strategy
TRA	technology readiness assessment
TRL	technology readiness level
TTP	tactics, techniques, and procedures
UAS	unmanned aerial system
UON	urgent operational need
USC	United States code
USD (AT&L)	Under Secretary of Defense for Acquisition, Technology, and Logistics
WBS	work breakdown structure

EXECUTIVE SUMMARY

This research determined if current regulations support a repeatable and manageable rapid acquisition process within the scope of the Army.

We reviewed a Government Accountability Office (GAO) study[1] and a Senate investigation on acquisition reform,[2] the newly revised DOD 5000.02,[3] the Under Secretary of Defense for Acquisition, Technology and Logistics (USD AT&L) congressional testimony,[4] a collection of articles on acquisition reform, and examples of rapid and deliberate acquisition.

We used the knowledge value-added (KVA) theory as our methodology to analyze potential value centers and data extrapolated from selected acquisition reports (SAR). Since its development in the early 1990s, many businesses and government agencies have used the KVA theory, developed by Thomas J. Housel and Valery Kanevsky,[5] to improve processes through re-engineering.

We used the work done by Thomas Housel and Arthur Bell[6] on how to measure and manage knowledge as our primary methodology. We used eight value centers that focus on important areas to utilize in conducting rapid acquisition. To determine what makes rapid acquisition work, we considered the following areas that we addressed in our

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[1] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies* (GAO-15-192) (Washington, DC: U.S. Government Accountability Office, 2015).

[2] Carl Levin and John McCain, *Defense Acquisition Reform: Where Do We Go From Here? A Compendium of Views by Leading Experts* (Washington, DC: Senate Permanent Subcommittee on Investigations, 2014).

[3] Department of Defense, *Operation of the Defense Acquisition System*. DOD Instruction 5000.02. Washington, DC: Department of Defense, January 7, 2015.

[4] *Reform of the Defense Acquisition System: Testimony Before the Senate Committee on Armed Services*, Senate (2014) (Witness Statement of HON Frank Kendall, USD AT&L).

[5] Thomas J. Housel and Valery Kanevsky, *Measuring the Value Added of Management: A Knowledge Value Added Approach* (NPS-AM-06-056) (Monterey, CA: Naval Postgraduate School, 2006).

[6] Thomas Housel and Arthur Bell, *Measuring and Managing Knowledge* (Boston, MA: McGraw Hill Irwin, 2001).

analysis: speed, agility, elevated and streamlined bureaucracy, focus, and alignment with acquisition strategy, life cycle costs, lessons learned, and the evolving nature of war.[7]

The results of our analysis demonstrated the need for an institutionalized, rather than ad hoc, process. We recommended culling pieces from the various rapid acquisition options currently available and focusing on these value centers to develop a process that is repeatable and manageable.

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[7] Michael W. Middleton, "Assessing the Value of the Joint Rapid Acquisition Cell" (master's thesis, Naval Postgraduate School, 2006).

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I.   INTRODUCTION

Historically, the United States has been unprepared for war. Consider the attack by the Imperial Japanese Navy on the United States naval base at Pearl Harbor on December 7, 1941. According to the National World War II Museum's website, the Japanese Navy surprised the United States, and thousands of Americans died as a result. The United States declared war on Japan the following day and entered into World War II shortly thereafter, but the nation was unprepared to fight that war. As stated in the National World War II Museum's website, "The United States faced a mammoth job in December 1941. Ill equipped and wounded, the nation was at war with three formidable adversaries. It had to prepare to fight on two distant and very different fronts, Europe and the Pacific. Americans needed to quickly raise, train, and outfit a vast military force."[1]

Writer Dave Marmion explains that, on June 25, 1950, the Korean War began when the North Korean Army sent 75,000 soldiers across the 38th parallel.[2] The United States military entered the war on South Korea's behalf in July. A task force of 400 infantry moved into Osan on July 5, 1950, but the weaponry required for battle was not available to them.[3] As stated by Peter Lane in his thesis for the Command and General Staff College, "The rush to dispose of vast stocks of military equipment and supplies and rapid conversion of its productive capacity, and the failure to retain the capability to quickly remobilize this capacity sowed the seeds of the nations' unpreparedness for its next war."[4]

Since the terrorist attack on American soil on September 11, 2001, the U.S. military has been engaged in war. During this time, it has prioritized getting the product

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[1] "December 7, 1941: A Day that Will Live in Infamy," National World War II Museum, accessed August 6, 2015, para. 4, http://www.nationalww2museum.org/learn/education/for-students/ww2-history/america-goes-to-war.html.

[2] Dave S. Marmion, "Korean War Outbreak: A Study in Unpreparedness," *Military History Online*, August 22, 2010.

[3] Ibid.

[4] Peter Lane, "Steele for Bodies: Ammunition Readiness during the Korean War" (Thesis, Command and General Staff College, 2003), 15.

to the soldier as quickly as possible to save soldiers' lives with modernized equipment, and to ensure that the soldier has the best equipment on the battlefield.

Because of the unpreparedness of the U.S. industrial base to support wartime production levels at the outset of these three wars, the U.S. military resorted to a reactive versus a proactive position. We created new ad hoc processes in order to satisfy our needs because we did not have a rapid acquisition process in place.

A.   PROBLEM STATEMENT

Now that the combat missions have ended in Afghanistan and Iraq, the urgent need for rapid acquisition and fielding of equipment is declining. The current fiscal environment requires that we assess program management and determine a better way to satisfy our capability gaps. In this thesis, we will ask, "Do the current regulations and policies facilitate our ability to conduct rapid acquisition in a repeatable and manageable way?"

B.   SCOPE

The scope of this research will address the acquisition process but will not include research into the joint capabilities integration development system (JCIDS).

C.   METHODOLOGY

To address the research question, we will review the Army rapid acquisition processes and/or organizations and the regulations to determine support for rapid acquisition; analyze rapid acquisition successes and failures; and determine if the current regulations support a repeatable RA process.

We will use the KVA theory to assess the utility of the rapid acquisition process. Since its development in the early 1990s, many businesses and government agencies have used the KVA theory, developed by Thomas J. Housel and Valery Kanevsky,[5] to improve processes through re-engineering.

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[5] Housel and Kanevsky, *Measuring the Value Added of Management: A Knowledge Value Added Approach.*

We will use the work done by Thomas Housel and Arthur Bell on how to measure and manage knowledge[6] as our primary methodology for this research. Many Naval Postgraduate School (NPS) theses utilize the theory of Housel, an NPS professor. A few of those theses used KVA analysis to measure the effectiveness and efficiency of U.S. Navy information technology (IT) systems[7]; determine a return on investment (ROI) on programs and processes in IT acquisitions[8]; and assess the value of the JRAC.[9] We will use the latter as a baseline for our evaluation of the utility of the rapid acquisition process. We will use eight value centers focusing on important areas of conducting rapid acquisition. When thinking about the efficacy of rapid acquisition, we considered the following eight value centers, vital for a rapid acquisition process, effective in both war and peacetime:

- Speed[10]

- Agility

- Elevated and streamlined bureaucracy[11]

- Focus[12]

- Alignment with acquisition strategy[13]

- Life cycle costs[14]

- Lessons learned

- Evolving nature of war[15]

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[6] Housel and Bell, *Measuring and Managing Knowledge*.

[7] Cesar G. Rios, Jr., "Return on Investment Analysis of Information Warfare Systems" (master's thesis, Naval Postgraduate School, 2005).

[8] Christine L. Komoroski et al., *A Methodology for Improving the Shipyard Planning Process: Using KVA Analysis, Risk Simulation and Strategic Real Options* (NPS-AM-06-038) (Monterey, CA: Naval Postgraduate School, 2006).

[9] Middleton, "Assessing the Value of the Joint Rapid Acquisition Cell."

[10] Ibid., 46.

[11] Ibid., 47.

[12] Ibid., 48.

[13] Ibid., 49.

[14] Ibid., 50.

Housel states that, "Tracking the conversion of knowledge into value while measuring its bottom-line impacts enables managers to increase the productivity of these critical assets."[16] If we determine that the current rapid acquisition process requires reform, the value analysis will ensure the creation of a process condensed into its most productive and efficient form. Since the DOD is a "not for profit" organization, the value analysis component of Housel and Bell's work[17] will measure the value of rapid acquisition and determine the value of our ROI in a non-monetary sense.

In the book, *Measuring and Managing Knowledge*, written by Housel and Bell, they discuss the term "paradigm shift." They state that, "A paradigm shift occurs when a fundamentally new understanding of a given phenomenon offers a more adequate or appealing explanation than the existing paradigm."[18] The idea of conducting rapid acquisition in a repeatable way represents a paradigm shift for the DOD. The processes available to conduct rapid acquisition contain only a specification of urgency for that requirement. We can enhance our ability to respond to an ever-evolving threat by removing that distinction and conducting rapid acquisition when necessary. Our analysis of this issue will answer our thesis question.

D.   THESIS

To explore the Army's rapid acquisition process with the purpose of determining if the current regulations support a repeatable rapid acquisition process.

E.   SUMMARY

This chapter will provide an understanding of the purpose of this research project and the methodology used to conduct this research.

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15 Middleton, "Assessing the Value of the Joint Rapid Acquisition Cell," 51.

16 Housel and Bell, *Measuring and Managing Knowledge*, 91.

17 Ibid.

18 Ibid., 29.

II.   BACKGROUND

This chapter will review currently available rapid acquisition processes and organizations to understand what the regulatory environment supports.

A.   RAPID ACQUISITION OPTIONS

The creation of these processes and organizations came in response to the most horrific and deadliest terrorist attack conducted within the United States. Shortly after the attack on American soil on September 11, 2001, the United States initiated Operation Enduring Freedom (OEF) and later Operation Iraqi Freedom (OIF). Since then, the acquisition community used rapid acquisition processes in an ad hoc manner to satisfy urgent needs from the field.

A list and description of rapid acquisition processes and organizations follows.

1.   Operational Needs Statement

The Army regulation 71–9 states that commanders use this process to "document the urgent need for a nonstandard and or unprogrammed capability to correct a deficiency or improve a capability that enhances mission accomplishment."[19] The operational needs statement (ONS) is not nearly as lengthy as a JCIDS requirement. The ONS is a request to fulfill a need and the resources required to do so. Utilizing the ONS can bypass the JCIDS process because the requirements development process can take years. The user-initiated ONS process has funding available to support needs quickly, and attempts to respond to an ONS within 14 days. Response time varies depending on the complexity of the request.[20]

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[19] Department of the Army, *Force Development: Warfighting Capabilities Determination*, Army Regulation 71–9, Washington, DC: Headquarters Department of the Army, 2009, 25.

[20] Ibid., 25–26.

2. Directed Requirement

The Headquarters Department of the Army (HQDA) regulation requires the G3/5/7 office to initiate a directed requirement (DR) (a process), as opposed to an ONS, that the user initiates. Both have similar response timelines. DRs resolve urgent needs that, if unaddressed, could result in serious danger to personnel or the continued success of the effort. The Vice Chief of Staff of the Army (VCSA) and/or G3/5/7 approves a DR in writing.[21]

3. Capabilities Development for Rapid Transition

The current rapid acquisition process lacks a sustainment plan for fielded systems. Therefore, even if a small and easily replaceable part breaks rendering the system useless, it will result in the loss of the entire system. According to the Whaley and Stewart journal article, the capabilities development for rapid transition (CDRT) process transitions rapid acquisition programs into fully supported acquisition programs. The VCSA considers programs for transition into "one of three categories: sustain, terminate, or acquisition program candidate (APC) enduring transition."[22] Table 1 defines the three categories.

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[21] Department of the Army, *Force Development: Warfighting Capabilities Determination*, 25–26.

[22] Eileen P. Whaley and Dana Stewart, "Path from Urgent Operational Need to Program of Record," *Defense Acquisition Research Journal* 21, no. 2 (April 2014): 541.

Table 1.   CDRT Categories

Acquisition Program Candidate or Enduring Nonmaterial Capability	Sustain Capabilities	Terminate Systems
• Fills current operational need, theater-proven, is applicable to entire Army and to Future Force • Enters JCIDS process at MS B or C, or merges into existing program • Intended to compete in Program Objective Memorandum • Sustain with bridge resourcing strategy through OCO funding	• Fills a current theater operational need, but no broad application to entire Army or useful to Future Force • Not recommended as acquisition enduring capability at this time-theater use only • Sustain in theater with OCO funding • Consider HQDA-directed nonstandard equipment disposition	• Does not fulfill intended function adequately or performs unacceptably • Is obsolete, a better alternative is available, or it is being replaced now by an approved system • Further development and support not warranted • Not sustained by HQDA funding, but may be retained by unit and supported with unit funding

After Eileen P. Whaley and Dana Stewart, "Path from Urgent Operational Need to Program of Record," *Defense Acquisition Research Journal* 21, no. 2 (April 2014): 542.

4.   Rapid Equipping Force

The Rapid Equipping Force (REF), an organization, established in 2002, harnesses "current and emerging technologies to provide immediate solutions to the urgent challenges of U.S. Army forces deployed globally."[23] The REF website states that they support a variety of urgent requirements over a wide range of specialties, and have their own flexible funding line to support the fielding of rapid requirements. The REF timeline seeks to get the capability to the soldiers within 180 days.[24] The REF generates requirements through a "REF 10-liner" document that includes the following quoted topics:

- Problem

- Justification

- System characteristics

- Operational concept

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[23] "Rapid Equipping Force," U.S. Army, last modified August 3, 2015, About Us, para. 1, http://www.ref.army.mil/aboutus.html.

[24] Ibid.

- Organizational concept

- Procurement objective

- Support requirements

- Availability

- Recommendation

- Coordination and accomplishment[25]

This document "allows REF to procure [commercial off the shelf] COTS, and [government off the shelf] GOTS solutions"[26] that meet the capability gaps.

5.   Rapid Fielding Initiative

The Rapid Fielding Initiative (RFI) program began due to supply shortages experienced by units in Afghanistan. Program Executive Office (PEO) Soldier learned that soldiers were buying equipment not fielded to them, and the 2008 Army Posture Statement website affirms that this resulted in the VCSA directing PEO Soldier to initiate the RFI program.[27] Each fiscal year (FY), the RFI equipment list undergoes revisions, with items being added or removed depending upon their utility and popularity with the soldiers. The need for the RFI program has diminished since the war drawdown. See Appendix C for the 2012 RFI equipment list.

6.   Soldier Enhancement Program

In the *Army Sustainment* journal, Thomas House and Raymond Strunk reveal that, in 1989, Congress established the Soldier Enhancement Program (SEP).[28] The program's purpose was, "to purchase items that improve lethality, survivability, command and

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[25] Whaley and Stewart, "Path from Urgent Operational Need to Program of Record," 529.

[26] "Rapid Equipping Force," U.S. Army, About Us, para. 9.

[27] "Rapid Fielding Initiative," Army, last modified 2008, http://www.army.mil/aps/08/information_papers/prepare/Rapid_Fielding_Initiative.html.

[28] Thomas B. House II and Raymond E. Strunk, "Army Soldier Enhancement Program," *Army Sustainment* 43 (January-February 2011), para. 3.

control, mobility, and sustainability for all soldiers."[29] The SEP timeline provides capabilities to the soldier in less than three years.[30] The journal article adds that the SEP focuses on the evaluation of commercially available technologies, and procures those systems after successful testing.[31] The SEP receives yearly funding to support the testing and evaluation of COTS solutions. PEO Soldier has had great success with this program. Many systems that started out as SEP initiatives have become enduring, sustained programs like "the M110 semi-automatic sniper system, the clip-on sniper night sight, aviation laser pointer, [and the] fuel handler's coveralls and gloves."[32] Figure 1 demonstrates an SEP evaluation process from Program Manager (PM) Soldier Maneuver Sensors (SMS). The basic process involves many stakeholders and has five steps: identify, assess, recommend, validate, and approve. This process takes place over a six-month period.[33]

Figure 1.   SEP Evaluation Process
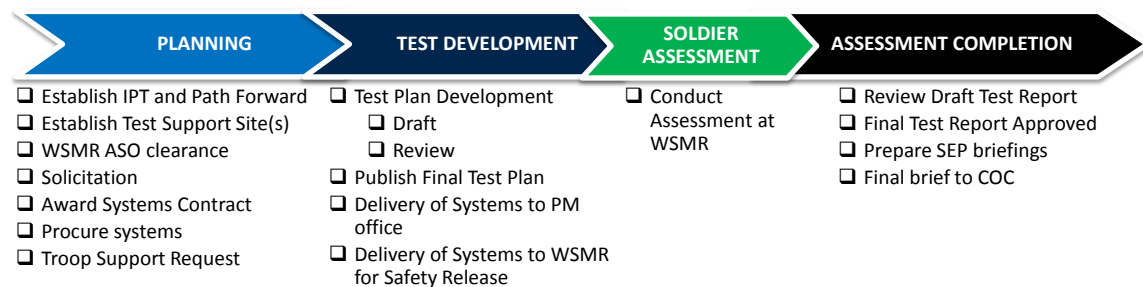
From Roy Trimble, e-mail message to author, June 2013.

7.   Joint Improvised-Threat Defeat Agency

The Joint Improvised-Threat Defeat Agency (JIDA), formerly known as Joint Improvised Explosive Device Defeat Organization (JIEDDO), was established in

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[29] House and Strunk, "Army Soldier Enhancement Program," para. 3.

[30] Ibid., para. 3.

[31] Ibid., para. 4.

[32] Ibid., para. 2.

[33] Ibid., para. 13.

February 2006.[34] Their mission is to combat "the escalating use of [improvised explosive device] IEDs in Iraq."[35] JIDA's official website states they seek to "focus (lead, advocate, coordinate) all Department of Defense actions in support of the Combatant Commander's and their respective Joint Task Forces' efforts to defeat Improvised Explosive Devices as weapons of strategic influence."[36] JIDA focuses on defeating IEDs, attacking the network, and training the force.[37] The acquisition process JIDA uses is the joint IED defeat capability approval and acquisition management process (JCAAMP).[38] Once a combatant commander receives a validated requirement, this process allows JIDA to "develop a solution and have it making a positive effect on the battlefield in as little as 3–4 months."[39]

8. Joint Rapid Acquisition Cell

The Joint Rapid Acquisition Cell (JRAC) (an organization), established in September 2004,[40] ensures the seamless and rapid approval of any future combatant commander needs, to include joint urgent operational needs (JUON) and immediate warfighter needs (IWN).[41] These joint IWN do not compete with ongoing rapid acquisition processes within each of the services. The IWN has greater urgency than the JUON, and resolution must occur within 120 days.[42]

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[34] "The Official website of JIDA," accessed July 31, 2015, About JIDA, para. 1, https://www.jieddo.mil/index.aspx.

[35] "Joint Improvised Explosive Device Defeat Organization (JIEDDO)," Global Security, last modified February 4, 2012, para. 3, http://www.globalsecurity.org/military/agency/dod/jieddo.htm.

[36] "The Official website of the JIDA," About JIDA, para. 2.

[37] Ibid., About JIDA, para. 3.

[38] "Joint Improvised Explosive Device Defeat Organization (JIEDDO)."

[39] "Joint Improvised Explosive Device Defeat Organization (JIEDDO)," para. 2.

[40] Deputy Secretary of Defense, "Meeting Immediate Warfighter Needs" Memorandum,Washington, DC: Deputy Secretary of Defense, 2004.

[41] Under Secretary of Defense, *Fulfillment of Urgent Operational Needs* (Washington, DC: Defense Science Board, 2009), 10–11.

[42] Ibid.

9. Warfighter Senior Integration Group

The DOD Directive 5000.71 established the Warfighter Senior Integration Group (SIG) to do the following:

> Lead and facilitate agile and rapid responses to combatant commander urgent operational needs (UONs), and to recognize, respond to, and mitigate the risk of operational surprise associated with ongoing or anticipated near-term contingency operations. These UONs include joint urgent operational needs (JUONs), and joint emergent operational needs (JEONs) identified by combatant command (CCMDs).[43]

According to the DOD Directive, the Warfighter SIG manages the process to ensure the execution of a validated requirement by identifying a valid solution, and rapidly executing that solution. To define "validity" the Directive states, "the solution must be capable of being fielded within 2 years of the validation of the urgent need, in a manner that resolves or substantially mitigates the underlying need."[44]

B. SUMMARY

There are multiple processes/organizations available, but they prove ill-suited for use in both war and peacetime. Former staffer on the Senate Armed Services Committee (SASC), Bill Greenwalt said it best when he said, "One of the truths of the last 50 years of acquisition practice is that whenever the military really needed something it bypasses the traditional acquisition process and uses a more streamlined approach. Recognizing this reality is the first step in building an acquisition system that works."[45] Acknowledging this truth, we must consider establishing a repeatable and manageable "bypass" to the current acquisition process.

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[43] Department of Defense, *Rapid Fulfillment of Combatant Commander Urgent Operational Needs*, DOD Directive 5000.71, Washington, DC: Department of Defense, 2012, 1.

[44] Ibid., 2.

[45] Bill Greenwalt, "Build Fast, Effective Acquisition: Avoid the System We've Got," *Breaking Defense*, April 25, 2014, para. 1.

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III. LITERATURE REVIEW

This chapter will take into consideration the literature available on the acquisition process, using that as a baseline for analysis and determination if the current regulations and policies facilitate rapid acquisition in a repeatable and manageable manner.

A. INTRODUCTION

In order to understand if the current regulations and policies facilitate a repeatable and manageable rapid acquisition process, we will assess literature on the subject. We will consider a GAO study[46] and a Senate investigation on acquisition reform,[47] the newly revised DOD 5000.02,[48] the USD AT&L's congressional testimony,[49] and a collection of articles on acquisition reform.

B. KEY TENETS

After reviewing this literature, a few topics continue to rise to the top of the discussion.

1. Acquisition Reform Is Necessary

As evidenced by various regulations, studies, articles, and congressional testimony, the DOD has demonstrated a long-standing consideration of the need for reform.

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[46] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*.

[47] Levin and McCain, *Defense Acquisition Reform: Where Do We Go From Here? A Compendium of Views by Leading Experts*.

[48] Department of Defense, *Operation of the Defense Acquisition System*.

[49] *Reform of the Defense Acquisition System: Testimony Before the Senate Committee on Armed Services*.

In his testimony before the Senate, the USD AT&L suggests that the realization of current reform can be credited to the directive for better buying power (BBP).[50] The GAO study emphasizes that reform requires an overhaul of the system.[51]

House Armed Services Committee (HASC) chair, Representative Mac Thornberry, filed a bill in March 2015 that he said falls into the following "four main categories: people, acquisition strategy, simplified decision-making and thinning out regulations."[52]

An article from *Inside Government Contracts* reveals that Senator John McCain, chair of the SASC, has sustained focus on reforming the cost-plus contract structure. Senator McCain expressed this opinion in a debate with President Barack Obama during the 2008 presidential campaign, "particularly in defense spending, which is the largest part of our appropriations—we have to do away with cost-plus contracts. We now have defense systems in which the costs are completely out of control. Therefore, we need to have fixed-cost contracts."[53]

A report published by the Senate permanent subcommittee on investigations presents opinions on the DOD acquisition process from thirty experts with a broad range of backgrounds. Many experts focused on the following:

- Reducing "requirements creep"

- Incentivizing the workforce

- Dealing with shrinking budgets

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[50] *Reform of the Defense Acquisition System: Testimony Before the Senate Committee on Armed Services*, 2.

[51] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*.

[52] Megan Eckstein, "Thornberry Announces Acquisition Reform Legislation," *USNI News*, March 23, 2015, para. 5.

[53] Scott Glabe, Jennifer Plitsch, and Kathy Brown, "Senator McCain Renews Focus on Ending Cost-Plus Contracts," *Inside Government Contracts*, January 9, 2015, para. 2.

- Reducing regulatory burden[54]

In the report, Bill Greenwalt provided his opinion. He mentions six criteria used to evaluate success in acquisition that include the following quoted topics:

1. Efficiency

2. Effectiveness

3. Innovation

4. Competitiveness

5. Fairness

6. Accountability[55]

Greenwalt's position in the *Breaking Defense* article strongly supports the focus of this thesis. "Rapid acquisition authorities that were enacted after 9/11 led to the creation of a number of rapid acquisition entities and processes. Many of these emulated the acquisition buying practices of Special Operations Command (SOCOM), which has had its own long-standing special acquisition authority. Now that hostilities are coming to an end, these ad hoc organizations and processes are in danger of winding down. Immediate steps should be taken to ensure that these organizations and processes are not dismantled and become absorbed into the traditional acquisition system. As a way of maintaining these capabilities, current rapid acquisition authorities should be expanded to apply beyond wartime requirements and be targeted at supporting combatant commanders' needs that can be deployed in less than two years."[56] He also makes another valid point by stating, "When it is necessary to go around a system to make it work, there probably isn't much of that system that needs saving."[57] He echoes both the purpose of this thesis, and its findings and recommendations.

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[54] Carl Levin and John McCain, U.S. Senate Permanent Subcommittee on Investigations, *Defense Acquisition Reform: Where Do We Go From Here? A Compendium of Views by Leading Experts*, 1–4, 20, 70, 72.

[55] Levin and McCain, *Defense Acquisition Reform: Where Do We Go From Here? A Compendium of Views by Leading Experts*, 90.

[56] Greenwalt, "Build Fast, Effective Acquisition: Avoid the System We've Got," para. 11.

[57] Ibid., para. 12.

2.   Current and Future Fiscal Constraints Will Ensure Necessary Reform

The term "sequestration" became common in 2013, when automatic spending cuts resulted in the requirement that approximately 800,000 government civilians take multiple days without pay.[58] Sequestration will continue until 2021,[59] and because of that bleak financial forecast, we need to make smart decisions on how we spend the taxpayers' money. In Figure 2, we can see budgets rising to unprecedented amounts because of the terrorist attacks on September 11, 2001.

Figure 2.   Defense Budget Accounts: Historical and PB15 (FY1962-FY2019)
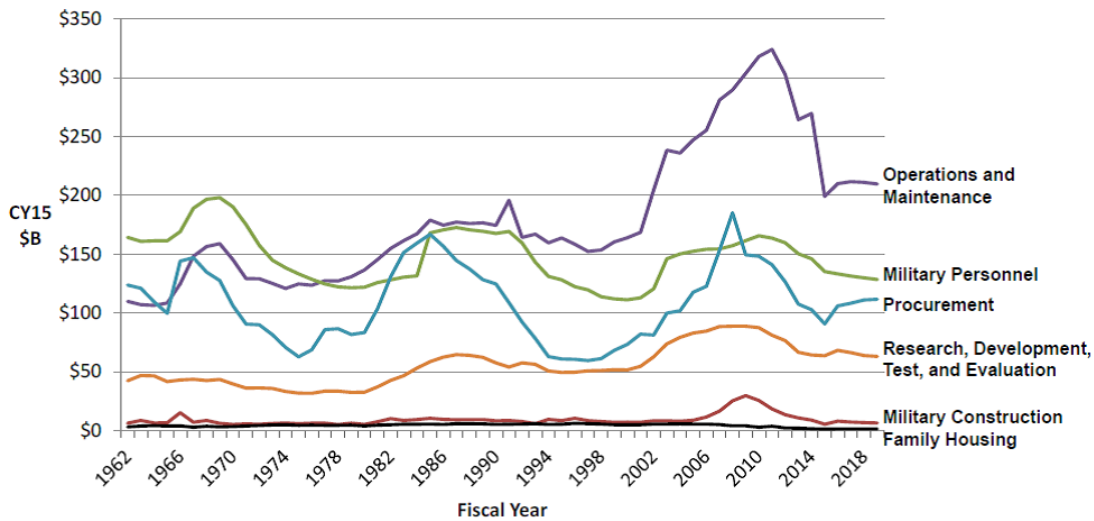
NOTE: OCO is included in fiscal year budgets before FY2014 but not in the current fiscal year (2014) or in the FY2015 President's Budget figures (FY 2015–2019). Budget amounts are adjusted for inflation and reported in billions of calendar year 2015 dollars (CY15$B).

From USD AT&L, *Performance of the Defense Acquisition System* (2014 Annual Report) (Washington, DC: USD AT&L, 2014), 2.

In this congressional testimony, the USD AT&L discusses tackling this problem through the BBP initiatives that include the following quoted topics:

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[58] Barbara Starr and Mike Mount, "Pentagon: Furloughs for Civilian Workers if Forced Cuts Go Into Effect," *CNN*, February 21, 2013.

[59] Kevin Mahnken, "To Understand the Budget Debate, You Need to Understand the Sequester. Here's a Quick Primer," *New Republic*, September 29, 2013.

- Achieving affordable programs

- Controlling cost throughout the acquisition life cycle

- Incentive productivity & innovation in government and industry

- Eliminate unproductive processes and bureaucracy

- Promote effective competition

- Improving tradecraft in acquisition of services

- Improve the professionalism of the total acquisition workforce[60]

This idea feeds into the next key tenet, Evolutionary vs. Absolute Reform.

3. Evolutionary vs. Absolute Reform

Opinions differ on how to reform the acquisition process. The USD AT&L supports a more evolutionary reform, utilizing the BBP directives.[61] The DOD 5000.02 supports evolutionary more than absolute reform.[62] Greenwalt[63] and the GAO[64] support a comprehensive acquisition reform to allow for a repeatable and manageable rapid process.

4. Areas of Acquisition Contributing to Delays

The GAO study targeted areas of the deliberate acquisition process that hinder its efficiency and effectiveness. Reform or removal of those areas could result in a repeatable and manageable rapid acquisition process.

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[60] *Reform of the Defense Acquisition System: Testimony Before the Senate Committee on Armed Services*, 3–12.

[61] Ibid., 2.

[62] Department of Defense, *Operation of the Defense Acquisition System*, 5000.02, (Washington, DC, 2015), 143–151.

[63] Greenwalt, "Build Fast, Effective Acquisition: Avoid the System We've Got."

[64] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*.

a.   *Documentation*

The GAO study found that preparing documentation for a milestone review takes an average of two years.[65] A consensus finds most of its statutory and regulatory requirements have low value.[66] The acquisition strategy has more value than the corrosion prevention control plan, required for all acquisition programs regardless of its applicability.

Both the quantity of documents and the time required to get those documents approved is excessive. The GAO study discusses receiving conflicting comments during the documentation review and approval process.[67] Depending on the acquisition category (ACAT) level, the PEO either approves a document or continues the review/approval process at HQDA—in both cases with multiple levels of review. In some cases, an individual at the PdM or PM level provides a comment based upon his or her own personal writing style. The document containing the incorporated comment proceeds up to the PEO or HQDA level. At that level, another person may make a comment that contradicts the initial comment, requiring the PM to revise the document back to its original form. This sort of trivial issue means that a review and approval process may continue for weeks, months, or possibly years.

b.   *Briefings*

In order to obtain a milestone decision from the MDA, the MDA requires a briefing from the PM. Depending on the MDA's personal preferences; some ACAT III programs can have a paper milestone decision and forego the briefing.

Since the GAO study focused mostly on ACAT I programs, there was discussion about the time required to brief multiple levels to obtain a milestone decision from the MDA.[68] Experience from our team reveals that most stakeholders want a briefing on the

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[65] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*, 6.

[66] Ibid., 8.

[67] Ibid., 16.

[68] Ibid., 12–13.

decision or document in staffing, so that they can provide comments, ask questions, and ensure that the PM knows about any issues that may affect the decision when it arrives at the MDA's office.

At PEO Soldier, obtaining a milestone decision from the MDA (typically ACAT III=PEO) involves pre-briefing the PdM (LTC), PM (COL) and their staff, the PEO staff and finally, briefing the PEO (BG). These nonconcurrent briefs require more time because the PM wants to ensure the resolution of problems at each level before they move to the next-highest level. The GAO study echoes this experience, "Program offices can spend a great deal of time and effort briefing the different officials and senior leaders in advance of the milestone decision. Data provided by nine of the programs we surveyed that recently had a milestone B decision showed that programs provided an average of 55 briefings over a period of just over a year and a half leading up to the milestone."[69]

c. Stakeholders

The number of people involved in the review and approval process of documentation depends on the ACAT level of the program, but even with the lowest ACAT level (III), the review and approval process includes the PdM staff and LTC, the PM staff and COL, the PEO staff and GO.

By definition, a stakeholder has an interest in the documentation, review, and approval process. Typically, the people that review the documentation work in a subject matter area that contributes to that document. For example, for a life cycle sustainment plan (LCSP) in staffing, the logistician and product support manager (PSM) at every level want to review it. The level of stakeholders involved relates directly to the time it takes to get a document approved. GAO found that even with a varied number of stakeholders providing their input, the reviews "added only moderate or less value to most documents."[70]

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[69] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*, 10.

[70] Ibid., 12.

Although the senior leaders express the desire to decrease the level of information provided in each document, their staff require additional information. This results in documents getting longer as the staffing process progresses.

d.   *Streamlined Acquisition*

The GAO study points to tailoring required acquisition documentation. However, based upon the data GAO retrieved by surveying PMs, the tailoring process does not reduce the staffing time.[71] Sometimes, rather than request a waiver for a document, PMs just write it themselves because they know that obtaining the waiver could take just as long. Based upon the GAO's study of the DOD's initial acquisition policy published in 1971, the guidance included the following quoted topics:

1.   Minimal layers of authority above the program office;

2.   Few demands on programs for formal reporting;

3.   Minimal demands for non-recurring information and for responding to these requests informally; and

4.   The development of a single, key document to support program management and milestone decision making.[72]

We can easily see how the acquisition process has ballooned into this bureaucratic process. From the PEO staff level perspective, every few months HQDA or DOD publishes a new policy memorandum. This adds to the already lengthy requirements and documents referenced during the development of a milestone package. The organizations that develop these policies can resolve this problem by looking at all the current requirements and reviewing them to determine their relevance in the current environment.

Appendix D contains a more thorough review of the GAO study.

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[71] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*, 20.

[72] Ibid., 21.

5. Regulations and Policies Tied to Urgent Needs

A recent update to the DOD 5000.02 includes an enclosure on the rapid fielding of capabilities. Although it represents a big step in the right direction for the DOD 5000.02 to address a rapid acquisition process, the use of that process still requires an urgent need.[73] We need to reconsider the appropriateness of rapid acquisition only to support an urgent need. The ability for the DOD to get things done quickly has become an ongoing joke because the bureaucracy seems to hinder everything we do. Rapid acquisition gives us a reason to reform our bureaucratic processes and become leaner in the meantime.

6. Workforce Motivation Tied to Completion of Tasks versus Quality Decision Making

The theme of incentivizing the acquisition workforce appears throughout the Senate report on acquisition reform. Progression of a program through its life cycle incentivizes the careers of the military personnel managing our programs. The PM's career relies upon the achievement of the milestone decision.[74] Christine Fox, the Pentagon's former Director of Cost Assessment and Program Evaluation, states, "The Department is putting a lot of emphasis on pushing our PMs to change from an attitude of deference to private industry to a frame-of-mind more appropriate for a government customer accountable to the U.S. taxpayer. The challenge here is that PMs are evaluated on how quickly they can move their program to the next milestone before rotation to a new assignment. With this metric of achievement, these managers have a strong incentive to move the program forward, even if it should be slowed or reconsidered completely. At this time there are not career incentives for acquisition managers to say that their program is not progressing well, it is not worth the money, and should be slowed or cancelled."[75] Because the military incentivization process focuses on promotion within a certain

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[73] Department of Defense, *Operation of the Defense Acquisition System*, 144.

[74] Levin and McCain, *Defense Acquisition Reform: Where Do We Go From Here? A Compendium of Views by Leading Experts*, 1.

[75] Ibid., 51.

amount of time, we should discuss revising the military incentives or having a larger quantity of the civilian workforce as PMs.

C.   CONCLUSION

The literature reviewed in this chapter provides a variety of perspectives from GAO's independent review standpoint,[76] to the USD AT&L's support of evolutionary reform through BBP,[77] and from Bill Greenwalt's absolute reform[78] to the DOD 5000.02 addressing rapid acquisition specifically for urgent requirements.[79] The strengths of this literature are:

- Independent and comprehensive reviews of the acquisition process

- Opinions on acquisition reform from thirty experts in the DOD with years of experience

- The GAO is known as "The Congressional Watchdog"[80] for its ability to uncover inefficiency in the government

- The DOD 5000.02 is considered the "go to" regulation for acquisition professionals and it is addressing rapid acquisition within the updated regulation

- Varied levels of support for acquisition reform from multiple sources

- The congressional testimony on acquisition reform signals Congress's receptivity to, and interest in the subject

- Support for extensive acquisition reform from a former staffer on the SASC with articles published on a major defense website

The weaknesses of this literature are:

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[76] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*.

[77] *Reform of the Defense Acquisition System: Testimony Before the Senate Committee on Armed Services*, 3–12.

[78] Greenwalt, "Build Fast, Effective Acquisition: Avoid the System We've Got."

[79] Department of Defense, *Operation of the Defense Acquisition System*, 144.

[80] John Heilemann, "Congress's Watch Dog: The General Accounting Office," *Washington Monthly*, November 1989.

- It took years to publish a revised DOD 5000.02. and despite the critical nature of acquisition reform, it may take years to get formalized

- Many differing perspectives on how to realize acquisition reform may result in evolutionary versus absolute reform

- As opposed to the GAO study, DOD 5000.02, and USD AT&L's testimony, the articles published by Bill Greenwalt represent solely his opinion

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IV. CASE REVIEW

In this chapter, we will review both military and industry examples to understand if the current policies and regulations support a repeatable and manageable rapid acquisition process.

Both the joint direct attack munition (JDAM) and mine-resistant ambush protected vehicle (MRAP) programs have utilized current rapid acquisition processes to fulfill an urgent need. The joint land attack cruise missile defense elevated netted sensor system (JLENS) program used the deliberate acquisition process.

Data supporting the case reviews originates from both website references, articles, and the office of the USD AT&L Acquisition Resources and Analysis Directorate, specifically from the SARs.[81] The SARs demonstrate the current capability, successes and/or shortfalls of the acquisition process, and the individual program's latest estimates of cost, schedule, and performance.

We include these in our research to demonstrate the lack of repeatability in the current acquisition process. These programs applied an ad hoc process to satisfy a requirement. For example, the success of the rapid procurement and fielding of the MRAP vehicle required former Defense Secretary Robert Gates to spearhead the program. His leadership and support ensured that the MRAP program had top priority in the acquisition community at the time.[82] The MRAP program makes clear the key role of leadership sponsorship for a successful program.

Following the military case reviews, we will discuss Apple Inc.'s acquisition process. The profitability of Apple Inc. depends upon quick response to customer needs. Therefore, understanding their process can support the development of a well-rounded rapid acquisition process.

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[81] "Selected Acquisition Report Summary Tables," USD AT&L, accessed June 12, 2015, http://www.acq.osd.mil/ara/am/sar/.

[82] Alex Rogers, "The MRAP: Brilliant Buy, or Billions Wasted," *Time Magazine*, October 2, 2012.

A.   JOINT DIRECT ATTACK MUNITION

According to the U.S. Air Force website, "the Joint Direct Attack Munition is a guidance tail kit that converts existing unguided free-fall bombs into accurate, adverse weather smart munitions."[83] The conversion kit contains a global positioning system (GPS) for accurate updates and targeting data.[84] Figure 3 is a picture of the JDAM.

Figure 3.   Picture of JDAM
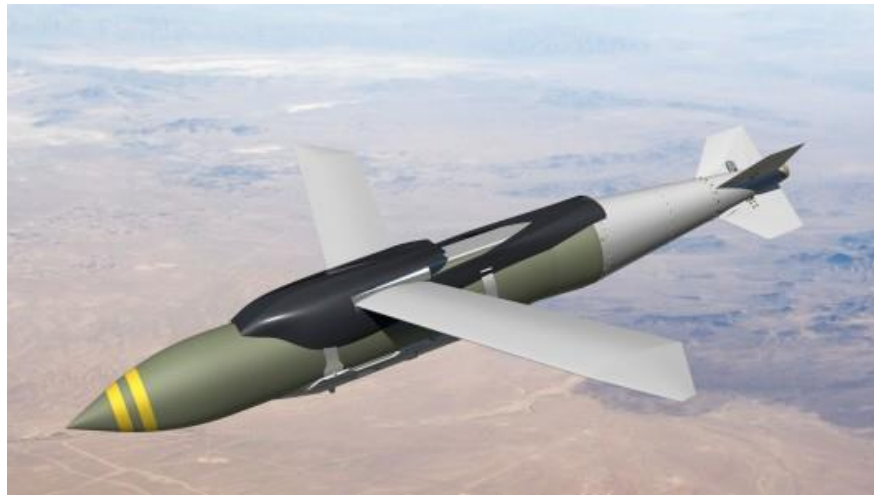
From David Szondy, "Boeing and RAAF Triple Bomb Range with New JDAM-ER Kit," *GizMag*, February 26, 2015.

The U.S. Air Force website indicates that Operation Desert Storm after-action reports revealed that the targeting precision was not very accurate. Bombs outfitted with laser guidance systems performed well in good weather conditions but when the environment included dust, cloud, smoke or fog, accuracy considerably dropped.[85]

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[83] "Joint Direct Attack Munition GBU-31/32/38," U.S. Air Force, last modified June 18, 2003, para. 1, http://www.af.mil/AboutUs/FactSheets/Display/tabid/224/article/104572/joint-direct-attack-munition-gbu-313238.aspx.

[84] Ibid.

[85] Ibid.

To overcome this performance shortfall, research and development of an "adverse weather precision guided munition" began in 1992. In 1997, the vendor delivered the first JDAMs and operational testing followed in 1998 and 1999.[86]

1. Program Office Description

According to the Global Security article, the Air Force is the lead acquisition service for the JDAM joint Air Force/Navy program.[87] The program team consists of a multi-disciplinary group (government and contractor personnel), responsible for life cycle management of the precision strike weapons. They manage this through a well laid out acquisition program with technical services and logistics support as critical elements, ensuring continued operational safety, suitability and effectiveness (OSS&E) of the weapon system.

Outfitted with the new JDAM, the bombs were loaded onto B-2 Bombers, and made their combat debut. The success of JDAM has revolutionized air warfare. The program plans on future enhancements "such as improved GPS accuracy, a precision seeker for terminal guidance extended range, in-flight target updating and additional warheads."[88]

2. Program Status

The "guided" laser upgrade to the JDAM currently operates on United States Air Force F-15E and F-16 and United States Navy F/A-18 and A/V-8B platforms, as well as in six other countries. Boeing's JDAM overview states that they "completed the Laser JDAM development and testing cycle in less than 17 months, and delivered the first

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[86] "Joint Direct Attack Munition GBU-31/32/38."

[87] "Joint Direct Attack Munition (JDAM)," Global Security, last modified July 7, 2011, http://www.globalsecurity.org/military/systems/munitions/jdam.htm.

[88] "Joint Direct Attack Munition," Military, accessed July 10, 2015, para. 7, www.military.com/equipment/joint-direct-attack-munition-jdam.

production Laser JDAMs to the U.S. Air Force in May 2008."[89] Boeing began full-rate production of laser JDAMs for the Navy in September 2012.[90]

In announcement of the JDAM contract award, the Boeing Company received the contract for the production of the JDAM tail-kit, including firm fixed price indefinite delivery indefinite quantity (IDIQ) for lots 18–22. Boeing will complete the delivery order by October 2016.[91]

3. Newest Program Block Improvements

Boeing's media room article observes that, in August 2012, Boeing completed initial testing and announced that the JDAM will feature a winged version, tripling the weapon's glide range. The U.S. Army and the Australian Army partnered in the upgrade. This new version of the JDAM "features a modular add-on wing kit that will unfold in flight."[92]

4. Cost Summary

According to the latest SAR summary, the JDAM "program costs increased $939.0 million (+13.0 %) from $7,229.8 million to $8,168.8 million, due primarily to a quantity increase of 31,509 tail kits from 271,844 to 303,353 (+$899.7 million) and associated schedule, and estimating allocations (+$23.5 million). These increases were partially offset by a reduction in the estimate for procurement as a result of the quantity increase (-$82.2 million)."[93]

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[89] "Laser Joint Direct Attack Munition," Boeing, last modified March 2013, http://www.boeing.com/assets/pdf/defense-space/missiles/jdam/docs/laser_jdam_overview.pdf.

[90] Ibid.

[91] "Joint Direct Attack Munition (JDAM) Contract Award," dgMarket Tenders Worldwide, published November 5, 2014, http://www.dgmarket.com/tenders/np-notice.do?noticeId=11877711.

[92] "Boeing Winged Joint Direct Attack Munition Completes 1st Round of Tests," Boeing, published August 30, 2012, para. 2, http://boeing.mediaroom.com/2012-08-30-Boeing-Winged-Joint-Direct-Attack-Munition-Completes-1st-Round-of-Tests.

[93] "Selected Acquisition Report Summary Tables," USD AT&L, last modified December 31, 2014, 5, http://www.acq.osd.mil/ara/sar/SST-2014-12.pdf.

5.   Summary

Since JDAM production started in 1998, the Boeing Company's "facility in St. Charles produces more than 40 JDAM kits every day, on time, and on budget,"[94] as noted in the Boeing media room article. JDAMs have been extensively combat-proven by the United States Air Force, Navy, Marine Corps, and numerous international allied forces. So far, no significant software-related issues have occurred. The program has produced an affordable, timely solution to the warfighter's need.[95]

The book, *Cheaper, Faster, Better? Commercial Approaches to Weapons Acquisition*, confirms that the DOD nominated JDAM as a defense acquisition pilot program (DAPP) in December 1994.[96] As a result, the JDAM program employed the latest commercial practices to ensure rapid acquisition, for example, obtaining waivers for regulatory/statutory requirements, and utilizing contractual incentives to their fullest advantage. The JDAM program received 25 Federal Acquisition Regulation (FAR) and 25 defense federal acquisition regulation supplement (DFARS) waivers.[97] As a DAPP, JDAM achieved the following benefits:

- Cost reductions

- Broad requirements

- Open systems architecture

- Contractor control of configuration and technical solutions

- Utilization of COTS solutions[98]

Cost changes to the program have mainly derived from changes requested by the government, such as increases in planned quantities, the application of lower escalation

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[94] "Boeing Reaches 250,000-Kit Milestone for JDAM Weapon Program," Boeing, published August 20, 2013, http://boeing.mediaroom.com/Boeing-Reaches-250-000-Kit-Milestone-for-JDAM-Weapon-Program.

[95] Ibid.

[96] Mark A. Lorell, Julia F. Lowell, Michael Kennedy, and Hugh P. Levaux, *Cheaper, Faster, Better? Commercial Approaches to Weapons Acquisition* (Santa Monica, CA: Rand Corporation, 2000), 140.

[97] Ibid., 144.

[98] Ibid., 150.

rates, and/or reductions in associated support requirements. Other factors that affected program cost changes included offsetting costs by stretching out development and procurement schedules, and engineering changes to hardware/software.[99] Additionally, new upgrades such as wing redesign and laser and sensor improvements will drive costs in the program's future.

Although the JDAM program completed the development and testing cycle of the JDAM laser-guided munition in less than 17 months,[100] the success of the program relied on the DOD allowing the PM to deviate from the prescribed acquisition processes through regulatory/statutory relief, such as the granting of FAR and DFARS waivers.[101]

The program succeeded in both cost and schedule areas, and rapidly delivered a needed capability to the field. However, the process gained these efficiencies via manipulation, and regulatory and statutory requirements deemed it not repeatable or easily manageable within those requirements.

B.   MINE RESISTANT AMBUSH PROTECTED VEHICLE

According to the Program Executive Office for Combat Support and Combat Service Support (PEO CS&CSS) website, the MRAPs, "are armored vehicles with a blast-resistant, v-bottomed underbody designed to protect the crew from mine blasts, fragmentary and direct-fire weapons."[102] There are four types of MRAP pulled from the PEO CS&CSS website and quoted below:

1.   Category I for urban combat missions;

2.   Category II for convoy escort, troop transport, explosive ordnance disposal and ambulance missions;

3.   Category III for clearing mines and other explosive devices; and

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99 "Selected Acquisition Report Summary Tables," USD AT&L, last modified December 31, 2014.

100 "Laser Joint Direct Attack Munition."

101 Lorell, Lowell, Kennedy, and Levaux, *Cheaper, Faster, Better? Commercial Approaches to Weapons Acquisition*, 144.

102 "Army Project Office Mine Resistant Ambush Protected Vehicles," Program Executive Office Combat Support & Combat Service Support, last modified July 8, 2014, Focus, para.1, http://www.peocscss.army.mil/PMMRAP.html.

4.   The MRAP all-terrain vehicle (M-ATV), a smaller, lighter-weight platform.[103]

The DOD designated the MRAP as a high priority program in 2007.[104] Figure 4 is a picture of the MRAP vehicle.

Figure 4.   Picture of MRAP Vehicle

From "RG33 MRAP," Army Technology, accessed July 4, 2015, http://www.army-technology.com/projects/rg33-mrap/rg33-mrap1.html.

The Army Project Office (APO) MRAP website contends that the original plan was to procure a few thousand vehicles; however, since the vehicle exhibited higher survivability, the fleet is now 27,000 vehicles. The Army uses MRAPs in various missions and are the "wheeled vehicle of choice."[105] The MRAP supports all five services and provides a needed capability to the soldier.[106]

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[103] "Army Project Office Mine Resistant Ambush Protected Vehicles," Focus, para.1.

[104] Ibid.

[105] Ibid., Focus, para. 2.

[106] Ibid.

1. Program Office Description

The Program Executive Office for Combat Support and Combat Service Support (PEO CS&CSS) website states that they direct the Army Project Office (APO) MRAP. The joint service (Army/Navy) program relies on a strong partnership between government and industry to deliver effective capabilities to the warfighter.[107]

Prime and support contractors include:

- Navistar Defense LLC: Responsible for design and production of the MaxxPro MRAP vehicle line to include a number of upgrades, conversions, and the MaxxPro MRAP vehicle reset program.[108]

- Oshkosh Corporation: Development and fielding of the underbody improvement kit, along with selected vehicle components, and technical manual development services.[109]

- Oshkosh Defense LLC: MRAP all-terrain vehicle reset program[110]

- ManTech Telecommunications & Information Systems Corporation: Contractor logistics sustainment and support services for the MRAP vehicle family, and route clearance equipment[111]

- Science Applications International Corporation: Logistics support services for the MRAP Vehicle Family[112]

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[107] "Army Project Office Mine Resistant Ambush Protected Vehicles."

[108] Defense Industry Daily staff, "Navistar's MaxxPro: 1st Place in MRAP Orders," *Defense Industry Daily*, October 7, 2014.

[109] "Oshkosh Defense, U.S. Military Complete 3,500 M-ATV Underbody Kit Installations In-Theater in Seven Months," Oshkosh Defense, February 22, 2012, http://oshkoshdefense.com/news/oshkosh-defense-us-military-complete-3500-m-atv-underbody-kit-installations-in-theater-in-seven-months/.

[110] "U.S. Army Contracts Oshkosh Defense to Reset M-ATVs to Achieve Capability and Readiness Requirements," Oshkosh Defense, February 5, 2015, http://oshkoshdefense.com/news/u-s-army-contracts-oshkosh-defense-reset-m-atvs-achieve-capability-readiness-requirements/.

[111] William Beaver, "Mantech Awarded $61M for Contractor Logistics Sustainment Support Services," *Danger Zone Jobs* (blog), December 11, 2013, http://dangerzonejobs.com/blog/overseas-contracts/mantech-overseas-contracts-2005-2013/.

[112] Science Applications International Corporation, "Fiscal Year 2008 Annual Report," 2008, http://media.corporate-ir.net/media_files/IROL/19/193857/ar/Annual-Report2008.pdf.

2. Program Status

In May 2007, after an initial JUONS for 1,185 vehicles, Defense Secretary Robert Gates made MRAP the number one DOD acquisition priority.[113] In the first year, the MRAP joint-service test and evaluation team responded by ordering 11,904 vehicles and fielding 1,500 vehicles.[114]

From December 2008 through June 2009, the acquisition process for the M-ATV occurred rapidly, with the request for proposals going out in December 2008, and the contract award occurring only 147 days later with fielding of the first three MRVs.[115] Production and upgrades continued through 2012. On October 1, 2012, DOD leadership to include the Vice President hosted a ceremony "marking the end of production of the mine-resistant, ambush-protected vehicle."[116]

Throughout 2013, and until October 1, 2014, the department of the Navy headed up the program until the Navy joint PEO MRAP formally stood down with each service managing their own fleet of MRAPs going forward.[117]

3. Cost Summary

According to the December 2009 SAR report, the PM set the initial baseline at $22,416.0 million.[118]

> Program costs increased $13,876.6 million (+61.9%) from $22,415.0 million to $36,291.6 million, due primarily to a quantity increase of 7,508 vehicles from 15,374 to 22,882 vehicles (+$7,415.1 million), and increases in other support costs (+$5,821.0 million) and initial spares

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[113] James Finley, "2008 David Packard Excellence in Acquisition," (presented at the awards ceremony, Fort Belvoir, VA, November 5, 2008).

[114] Ibid.

[115] Carden Hedelt, "MRAP Joint Program Office Takes Home Inaugural Vehicle Award," *Acquisition & Logistics Excellence* (2012): 1.

[116] David Stegon, "DOD Bids Adieu to MRAP Production," *FedScoop*, October 1, 2012, para. 1.

[117] Kris Osborn, "Services Mark MRAP Milestone, Celebrate Historic Accomplishment," *Army News Service*, October 5, 2012.

[118] "Selected Acquisition Report Summary Tables," USD AT&L, last modified December 31, 2009, 6, http://www.acq.osd.mil/ara/sar/SST-2009-12-31.pdf.

(+$1,346.6 million) associated with the quantity increase. In addition, costs increased due to a revised estimate for developmental and operational testing through FY 2016 (+$230.5 million). These increases were partially offset by the deletion of previously reported acquisition-related Operations and Maintenance costs that are no longer considered part of the acquisition program (-$964.0 million).[119]

4. Summary

In 2007, Defense Secretary Robert Gates issued the acquisition directive challenging the MRAP program to meet a strict delivery schedule. MRAP succeeded because of the support from the highest levels of leadership, along with strong financial support from Congress. With the intent to "bypass" the acquisition bureaucracy, Gates established a special team to ensure success, and then funded that project appropriately under the blanket of "highest priority." Many DOD acquisition programs do not achieve this level of support and therefore, are not as successful.

Some of the "lessons learned" include the following quoted material from the publication, "Does MRAP Provide a Model for Acquisition Reform?"

- Simple requirements. The MRAP PM ensured the requirements were straightforward allowing for speed and agility

- Utilization of COTS items when available. "MRAP benefited from ready availability of mature vehicles that could be quickly produced and fielded."[120]

- Stable and Available Funding. MRAP "was able to avoid negative cost and schedule impacts that are common with defense programs due to continual, often arbitrary funding cuts and/or delays."[121]

- Leadership Support: When Defense Secretary Robert Gates issued the acquisition directive, he made MRAP's status as the highest priority very

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[119] "Selected Acquisition Report Summary Tables," USD AT&L, last modified December 31, 2009, 6.

[120] Thomas H. Miller, "Does MRAP Provide a Model for Acquisition Reform?" *Defense AT&L* (July-August 2010), 18, http://www.dau.mil/pubscats/ATL%20Docs/Jul-Aug10/Miller_jul-aug10.pdf.

[121] Miller, "Does MRAP Provide a Model for Acquisition Reform," 19.

clear. The PM enjoyed the highest top cover and support. Most programs do not enjoy this level of support from the Secretary of Defense.[122]

The MRAP program succeeded primarily because it operated outside the established acquisition processes, and operated outside the norm of the DOD acquisition bureaucracy. Replicating and standardizing the program's success into existing acquisition regulations and processes would require creating a stand-alone process.

C.   JOINT LAND ATTACK CRUISE MISSILE DEFENSE ELEVATED NETTED SENSOR SYSTEM

The Program Executive Office Missiles and Space (PEO MS) manages all Army missile programs, and selected Army space programs,[123] as noted in their official website. Figure 5 is a picture of the JLENS.

Figure 5.   Picture of JLENS

From "Taking the Keys: U.S. Army Takes Control of JLENS Airships during Final "Test Drive" in Utah Desert," Raytheon, last modified March 2, 2015, http://www.raytheon.com/news /feature/jlenseut.html.

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[122] *Rapid Acquisition of MRAP Vehicles: Testimony Before the House Armed Services Committee, House of Representatives*, (2009) (Testimony of Michael Sullivan, Director, Acquisition and Sourcing Management), 1, 4, 9.

[123] "PEO Missiles and Space," U.S. Army, last modified August 2015, http://www.msl.army.mil/.

1. Program Office Description

According to the PEO Missiles and Space website, the cruise missile defense systems (CMDS) PM manages the Army's short/medium range systems.[124] The CMDS Project Office "is equipping the current and future force with an integrated air and missile defense capability. CMDS programs include joint land attack cruise missile defense elevated netted sensor system (JLENS), improved sentinel radar, STINGER based systems, and integrated fire protection capability increment 2–intercept."[125]

2. Program Status

The Global Security website article on JLENS claims that, in January 1996, the Army established the JLENS joint project office.[126] In June 1997, the Army released "a request for proposal for one JLENS sensor demonstration system."[127] In January 1998, the Army awarded Raytheon Company the JLENS contract.[128] In March 1999, the MDA designated the program as an ACAT II.[129]

The JLENS program provides a capability that allows surveillance from a distance and data that supports the soldiers' ability to engage enemies from a safe range,[130] recognized by the PEO Missiles and Space website.

The Defense Industry Daily article observes that, between 2013 and 2015, Raytheon completed of preparation of one of the Army's two JLENS systems for storage in the strategic reserve. Engineering and manufacturing development formally ended in

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[124] "PEO Missiles and Space," Cruise Missile Defense Systems.

[125] Ibid., para. 1.

[126] "Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS)," Global Security, last modified January 26, 2012, http://www.globalsecurity.org/space/systems/jlens-program.htm.

[127] "Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS)," para. 2.

[128] Ibid., para. 2.

[129] Ibid., para. 7.

[130] "PEO Missiles and Space," Cruise Missile Defense Systems, JLENS.

2013. The second system is part of an operational evaluation at Aberdeen Proving Ground, Maryland, starting in the fall of 2015.[131]

3. Newest Program Block Improvements

In FY12, budget restrictions required the JLENS PM cut procurement quantities. This decision resulted in a "critical Nunn-McCurdy cost breach."[132] Following leadership direction, the PM reduced the JLENS test program.[133] "USD AT&L did not authorize the program to complete the previously planned system development program or to proceed to a Milestone C or production decision."[134] The Army revised the test strategy to accommodate leadership's position on the program.[135]

4. Cost Summary

According to the 2010 SAR:

> PAUC increased 17.9% and the APUC increased 13.3% to the current APB, because the development program was extended six months due to delays in testing resulting from engineering challenges. The increases in unit costs are also attributable to the addition of preplanned product improvements for reliability, safety, affordability, or producibility of the JLENS systems.[136]

The Defense Industry Daily article contends that, in FY 2013, although the president's budget eliminated 14 orbits, two orbits proceeded through engineering and manufacturing development (EMD) to completion and delivery. This allows the Army to keep their options open with regard to the future of the JLENS program.[137]

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[131] Defense Industry Daily staff, "JLENS: Coordinating Cruise Missile Defense," *Defense Industry Daily*, October 14, 2014.

[132] Director Operational Test & Evaluation, "Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) FY2013 Annual Report," 107, http://www.dote.osd.mil/pub/reports/FY2013/pdf/army/2013jlens.pdf.

[133] Ibid., 107.

[134] Ibid., 108.

[135] Ibid., 108.

[136] "Selected Acquisition Report Summary Tables," USD AT&L, last modified December 31, 2010, 4, http://www.acq.osd.mil/ara/sar/SST-2010-12.pdf.

[137] Defense Industry Daily staff, "JLENS: Coordinating Cruise Missile Defense."

5. Summary

The JLENS program, hardly a "streamlined" rapid acquisition program, serves as an example of the status quo in acquisition, and suffers from no real support from senior DOD leaders. Additionally, the program has experienced multiple acquisition program baseline (APB) deviations because of lack of funding, and requirements changes.

Because of an escalation in combat operations, the program changed its priorities, currently focusing on equipping the current and future force with an integrated air and missile defense capability.[138] In 2013, the budget required ending JLENS production at four aerostats.[139]

D.   APPLE INC.

One must understand the importance of both military and industry processes in order to conduct a thorough review of rapid acquisition. If current regulations do not support conducting rapid acquisition in a repeatable and manageable way, this information will help structure a new process. We know the DOD has a very specific way of doing things, but how does industry respond to the need to develop and "field" a product quickly? We will examine this question in our review of the Apple Inc. process.

1.   Product Development Process

We know few aspects of Apple's product development processes because of their secretive nature. In a paper titled, *Apple Rethinks Core Process: Improves Cycle Time*, the Knowledge Roundtable Group reviews how Apple improves their development process, detailing their process and focusing on the differences between Apple and other companies.

A cross-functional team developed the Apple new product process (ANPP) endeavoring,

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[138] "Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS)."

[139] David Axe, "Military Airships: Hot Air of Soaring Promise," *Breaking Defense*, May 1, 2012.

To create a single, company-wide process that would inject rigor into the system and reduce cycle time without stifling creativity or adding needles bureaucracy. The goal was not a detailed, step-by-step explanation of how to develop new products; the aim was to produce a clear process map of common elements of new product development that should be completed across the company.[140]

Apple pulled together a 20-person team, including members from all areas of the staff. First, they utilized industry best practices within the new process. They reviewed Apple's internal processes to determine necessary improvements. They created a "prototype" of the process by establishing six phases.[141]

1.   Concept. Determine the feasibility of the project, and upper level management support. Provide a document to leadership describing the product, why Apple should move ahead, and how to accomplish the project.

2.   Investigation. Once upper level management supports the project, the team defines its product and scope. The product proposal defines the "product features and boundary conditions: schedule, development and product costs, and first year financials."[142]

3.   Development. A designated PM leads the team purposed with delivering the final product. Other activities in this phase include "planning for marketing, packaging, user documentation, patent review, localization (how to adapt the product for international markets), forecasting, and product service and support."[143]

4.   Validation. Test to confirm that the product meets the design specifications. Produce and translate user manuals for international markets.

5.   Production. Produce and deliver the product to the customer. Apple ensures the acquisition of market feedback to assure product improvement, if needed. The team convenes to review the process and any issues to discuss.

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[140] The Management Roundtable, *Apple Rethinks Core Process: Improves Cycle Time*, (Waltham, MA: Knowledge Roundtable, 2004), 2.

[141] Ibid., 2.

[142] The Management Roundtable, *Apple Rethinks Core Process: Improves Cycle Time*, 3.

[143] Ibid., 3–4.

6.   End of Production. Focus on product support strategy.[144]

Test the ANPP on new product development and if problems arise, continue improving through lessons learned. This new process resulted in a decrease from 24 months to a nine month cycle time.[145]

2.   Prototyping Process

Prototyping serves to develop a product in both laboratory and real-world environments to determine its future success with consumers. Apple Inc. points to three helpful questions for the most difficult first steps of the prototyping process quoted below:

- What needs to be real? In other words, what is the one part of the experience we want to create and get more feedback on?

- What can we fake? We don't want to re-create the wheel, so using screenshots for [user interface] elements we are not changing is a time saver.

- Where will they use it? Determine whether users will use the product while walking down a busy sidewalk or maybe on their couch in front of the TV.[146]

After development of the prototype, testers should get involved in the process, and answer the following quoted questions:

- Do you know how to _____? Insert the end goal of the experience you have been prototyping.

- Is it easy to _____? They may have figured it out, but you also want to find out if they had an experience in mind that would have made more sense to them.

- How can we make this better? Testers may have answered this above, or they may give you some feedback on something as easy for you to change as unclear wording.[147]

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[144] The Management Roundtable, *Apple Rethinks Core Process: Improves Cycle Time*, 2–4.

[145] Ibid., 5.

[146] Ryann Pierce, "Apple's Prototyping Process, Presented at WWSC 2014," (presented at WWDC 2014, San Francisco, California, June 12, 2014), Before making a prototype, para. 1–3.

After the involvement of testers, compare the anticipated response to what the tester experienced. Apple prototypers ask themselves these quoted questions:

- What's working? Are there parts of your goal that came through smoothly?

- What's not working? This could be everything, but you will want to give yourself bullets of some key issues your testers had; otherwise, you are back at square one.

- What other ideas does this give us? Did the testers keep trying something that seemed like the obvious answer to them?[148]

3.   Test Labs

Jefferson Graham acknowledges that Apple Inc. takes its commitment to customers seriously, with engineers spending many hours testing products before launch and after release. In Graham's article, Steve Jobs said, "Apple has spent $100 million in creating test labs to put products into isolated chambers, away from interference, to show how a device and its antenna will function at every possible rotation."[149]

The test labs include both prototypes and returned models to determine the presence of issues at the time of return. Isolating the product in ensures that Apple can resolve any bugs prior to putting it into a real world scenario.[150]

In early designs, testing utilizes expensive mannequin-like models. After lab testing, the devices go out to specially designed vans that mimic real life situations, to demonstrate how the prototype will fare with the consumer.[151]

E.   SUMMARY

Analysis of the three military case reviews reveals the necessity of the following key factors to ensure a repeatable and manageable rapid acquisition process:

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[147] Pierce, "Apple's Prototyping Process, Presented at WWSC 2014," User testing, para. 1–3.

[148] Ibid., Rethink and try again, para. 1–3.

[149] Jefferson Graham, "Behind the Scenes at Apple's Test Labs," *USA Today*, July 16, 2010, para. 8.

[150] Ibid.

[151] Graham, "Behind the Scenes at Apple's Test Labs."

- Serious deviations from the current acquisition process;[152]

- A stable fiscal streamline; and

- Heavy support from top acquisition levels[153]

A number of noticeable benefits and business practices contribute to the success of rapid acquisition, including:

- Cost reductions

- Broad requirements

- Open systems architecture

- Contractor control of configuration and technical solutions

- Utilization of COTS solutions[154]

- Support from the highest levels of leadership

- Strong financial support from Congress[155]

- The identification and implementation of lessons learned[156]

- Use of COTS systems and reutilization and repurposing of existing systems[157]

- A stable and simple requirement[158]

- The establishment of the warfighter SIG[159]

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[152] Lorell, Lowell, Kennedy, and Levaux, *Cheaper, Faster, Better? Commercial Approaches to Weapons Acquisition*, 144.

[153] *Rapid Acquisition of MRAP Vehicles: Testimony Before the House Armed Services Committee*, 1, 9.

[154] Lorell, Lowell, Kennedy, and Levaux, *Cheaper, Faster, Better? Commercial Approaches to Weapons Acquisition*, 150.

[155] *Rapid Acquisition of MRAP Vehicles: Testimony Before the House Armed Services Committee*, 1, 9.

[156] The Management Roundtable, *Apple Rethinks Core Process: Improves Cycle Time*, 4.

[157] *Rapid Acquisition of MRAP Vehicles: Testimony Before the House Armed Services Committee*, 1.

[158] *Rapid Acquisition of MRAP Vehicles: Testimony Before the House Armed Services Committee*, 1.

[159] Osborn, "Services Mark MRAP Milestone, Celebrate Historic Accomplishment."

Acquisition processes currently in place support a consistent method of fielding needed programs to the DOD within estimated costs, schedule, and performance metrics. However, given the data found in the case analysis, the current Defense Acquisition System (DAS) cannot support rapid acquisition without significant regulatory deviation and environmental pressures such as combat or endless funding, to justify and support deviating from established processes.

If we determine that the efficacy of rapid acquisition requires an update in both war and peacetime, we should consider the model used in the MRAP case for potential incorporation into the revised acquisition guidance in order to replicate and standardize those programs' successes. That will allow leadership to focus resources on rapid fielding of equipment, while still supporting a more stringent and managed process during non-critical acquisition periods.

After understanding the currently available rapid acquisition processes/organizations and the DOD program case reviews, an obvious trend of timelines for rapid acquisition presents itself. Extremely urgent requests get filled in less than six months, and requests that are just as important but not as urgent get filled in fewer than two years. This research project defines that the word "rapid" means a process that takes under two years. We chose this timeframe to ensure the repeatability and manageability of a new process. Choosing a shorter timeline would require a reduction in the testing to ensure the safety and efficacy of the system, and would result in a less repeatable process.

After reviewing Apple's rapid product development and "fielding" process, some important takeaways demonstrate the key to Apple Inc.'s success.

- Less bureaucracy, shortened reporting structure
- Empowerment of leaders and employees to do their jobs[160]
- Focus on one or two products at a time
- Involvement of system users in prototype development[161]

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[160] The Management Roundtable, *Apple Rethinks Core Process: Improves Cycle Time*, 3–5.

- Extensive testing[162]

- Importance of sustainment or product support for life cycle management[163]

The DOD has already incorporated some of these takeaways into the deliberate acquisition process including the importance of details, the involvement of the user in development, extensive testing, and the acknowledgement of the key role of sustainment in the life cycle. Less bureaucracy and focusing on one thing at a time also prove crucial for rapid acquisition. In addition, we must remember that extensive testing and focusing on every detail will negate our ability to achieve rapid acquisition. A review of Apple's process reveals that the DOD and industry share important elements for achieving rapid acquisition.

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[161] Pierce, "Apple's Prototyping Process, Presented at WWSC 2014."

[162] Graham, "Behind the Scenes at Apple's Test Labs."

[163] The Management Roundtable, *Apple Rethinks Core Process: Improves Cycle Time*, 4.

V.   ANALYSIS

In the data analysis section of this chapter, we will use data from the SARs[164] (see [Appendix F](#)) to determine program performance over time. The data will support our determination of the value of current rapid acquisition policy.

In the value analysis section of this chapter, we will perform a value analysis in accordance with the KVA theory introduced by Thomas Housel and Arthur Bell in 2001.[165] The value analysis will help us focus on the areas of rapid acquisition that customer's value and this will support our determination of how to improve the rapid acquisition process.

A.   DATA ANALYSIS

One key tenet of program management says that "time is money." When the schedule slips, costs rise and, if this happens consistently within DOD program management, the issues of speed and agility rise to the forefront, and the need for rapid acquisition in all areas of program management becomes more relevant.

1.   Nunn-McCurdy Unit Cost Breaches

An ACAT I program must report any cost breaches that exceed 15 percent (significant) and 25 percent (critical) with respect to its APB.[166] The following graphs, Figures 6 through 10, display information over the last five years on critical, significant, other significant cost changes, and programs with no issues reported in their SARs. Extrapolating this data shows how many programs each year overrun their cost projections, and any trends associated with these breaches.

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[164] "Selected Acquisition Report Summary Tables," USD AT&L, accessed June 12, 2015.

[165] Housel and Bell, *Measuring and Managing Knowledge*.

[166] Defense Acquisition University, "Chapter 10-Decisions, Assessments, and Periodic Reporting," In *Defense Acquisition Guidebook* (Fort Belvoir, VA: DAU Press, 2013).

Figure 6.   2010 Nunn-McCurdy Unit Cost Breaches
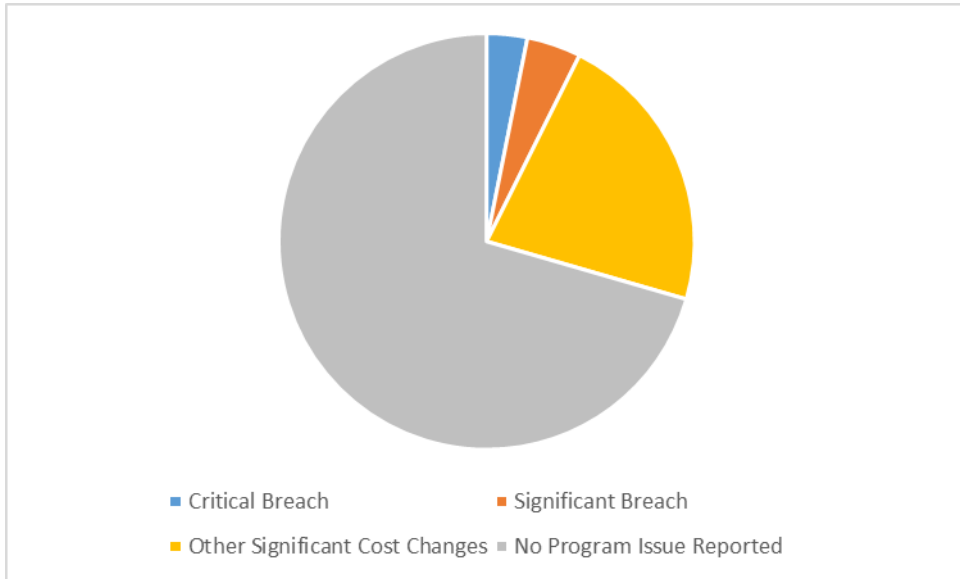
After "Selected Acquisition Report Summary Tables," USD AT&L, last modified December 31, 2010.

Figure 7.   2011 Nunn-McCurdy Unit Cost Breaches
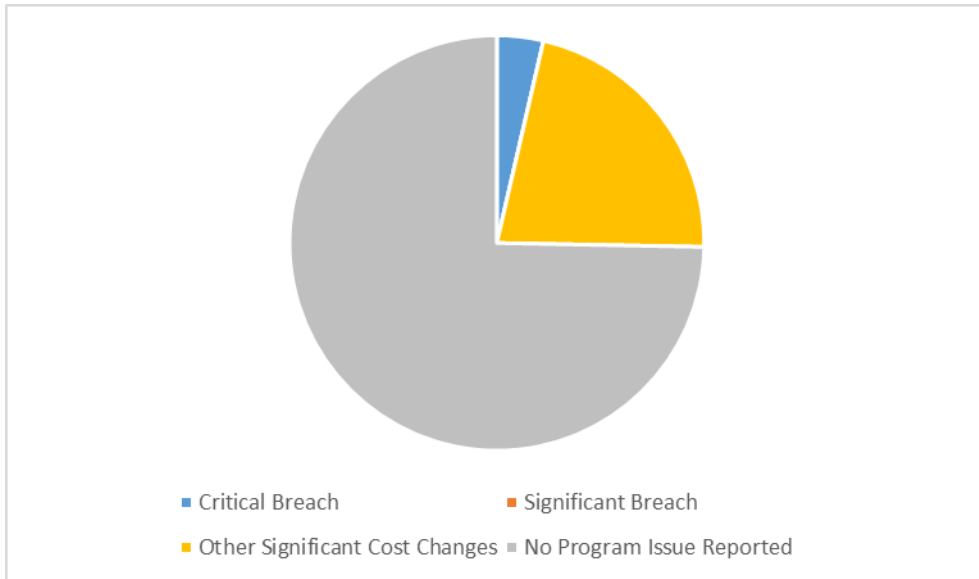
After "Selected Acquisition Report Summary Tables," USD AT&L, last modified December 31, 2011, http://www.acq.osd.mil/ara/sar/SST-2011-12.pdf.

Figure 8.   2012 Nunn-McCurdy Unit Cost Breaches
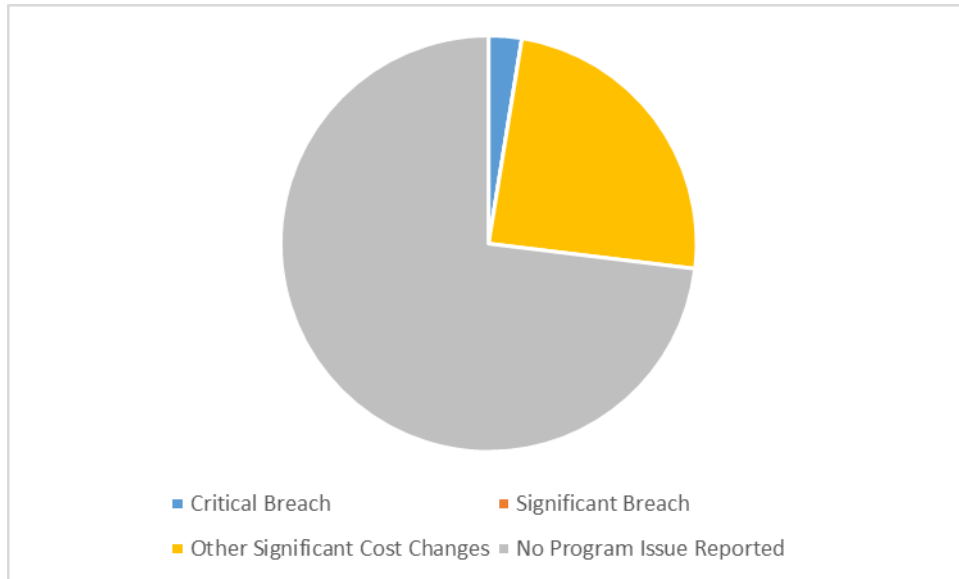
After "Selected Acquisition Report Summary Tables," USD AT&L, last modified December 31, 2012, http://www.acq.osd.mil/ara/sar/SST-2012-12.pdf.

Figure 9.   2013 Nunn-McCurdy Unit Cost Breaches
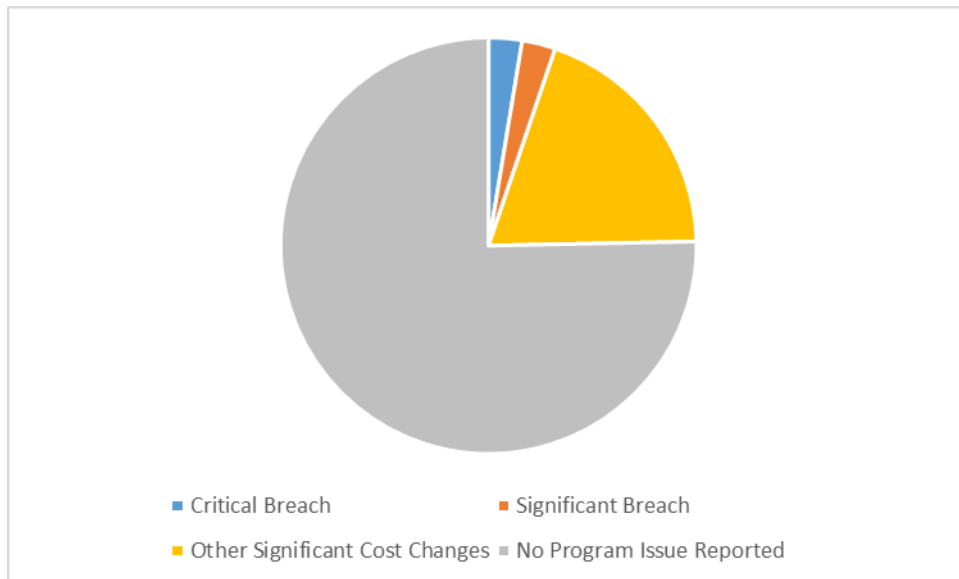
After "Selected Acquisition Report Summary Tables," USD AT&L, last modified December 31, 2013, http://www.acq.osd.mil/ara/sar/SST-2013-12.pdf.

Figure 10.   2014 Nunn-McCurdy Unit Cost Breaches
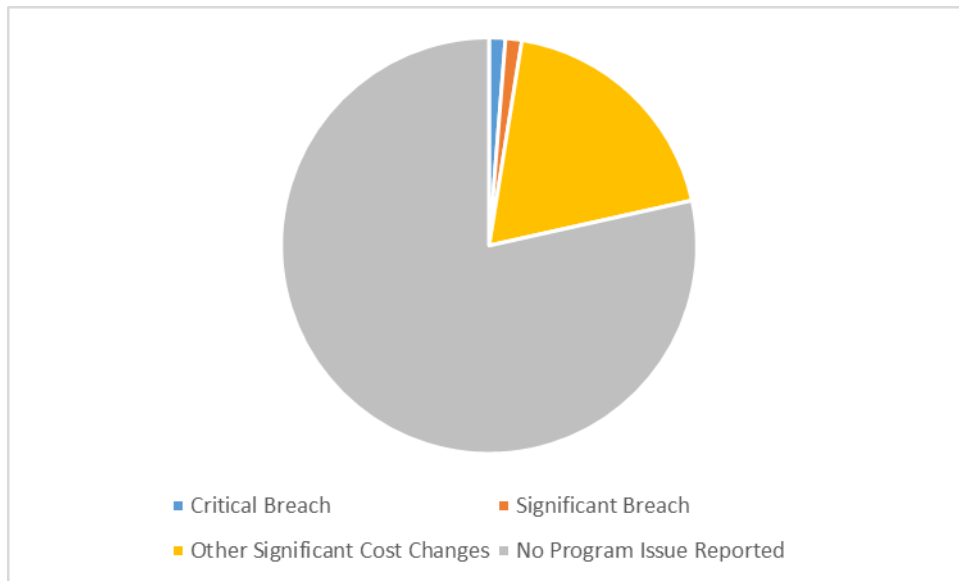
After "Selected Acquisition Report Summary Tables," USD AT&L, last modified December 31, 2014.

SARs data from 2010 to 2014[167] shows that the quantity of Nunn-McCurdy unit cost breaches has decreased each year. We may first assume that the PM controls cost, schedule, and performance. However, we can attribute this decrease to a reduction in support requirements. This budgeting technique involves shifting a requirement to the following reporting period, making it appear as if the program office has saved money.

For example, in 2014, although the quantity of critical and significant unit cost breaches decreased, and net cost decreased (-$9,118.9M) over all the programs, the cost decrease results from to a lower escalation rate (percentage of annual change in the price levels of goods/services occurs[168]), and reductions in support requirements. Increases in the following areas neutralize the decreases in cost:

- Quantities planned for procurement

- Development and procurement schedules

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167 "Selected Acquisition Report Summary Tables," USD AT&L, accessed June 12, 2015.

168 *Business Dictionary Online*, s.v. "Escalation Rate," accessed August 7, 2015, http://www.businessdictionary.com/definition/escalation-rate.html.

- Engineering changes to hardware/software

- Program cost estimates

- Other costs due to prior year impacts[169]

This trend does not reflect the speed of acquisition or the effectiveness of the product.

With the understanding that costs continue to rise within the deliberate acquisition process, and that sequestration will continue until 2021,[170] we must focus on acquisition process reform in order to maintain some level of modernization in the coming years. The graphs above and SARs data tie back into the Literature Review, which discusses current and future fiscal constraints guaranteeing the need for acquisition reform. The next paragraph provides more details with respect to cost overruns.

2.   Program Performance

To get a well-rounded picture of acquisition program performance, we assembled three graphs, Figures 11 to 13, from data provided in the SARs on cost, schedule, and performance.

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[169] "Selected Acquisition Report Summary Tables," USD AT&L, last modified December 31, 2014.

[170] Mahnken, "To Understand the Budget Debate, You Need to Understand the Sequester. Here's a Quick Primer."

Figure 11.   Program Cost Estimates ($M)
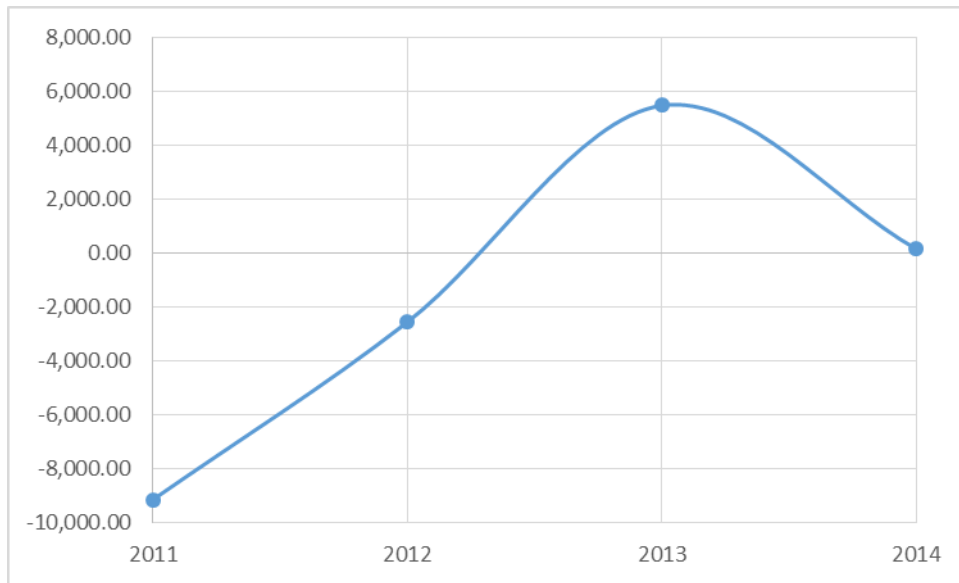
After "Selected Acquisition Report Summary Tables," USD AT&L, 2010–2014, accessed June 12, 2015.

Figure 11 demonstrates the inability of the PM to project stable cost estimates. In 2011 and 2012, program cost estimates decreased, but since then, costs have increased or stayed above the neutral or negative line on the graph.

Figure 12.   Cost Increase Due to Schedule Slip ($M)
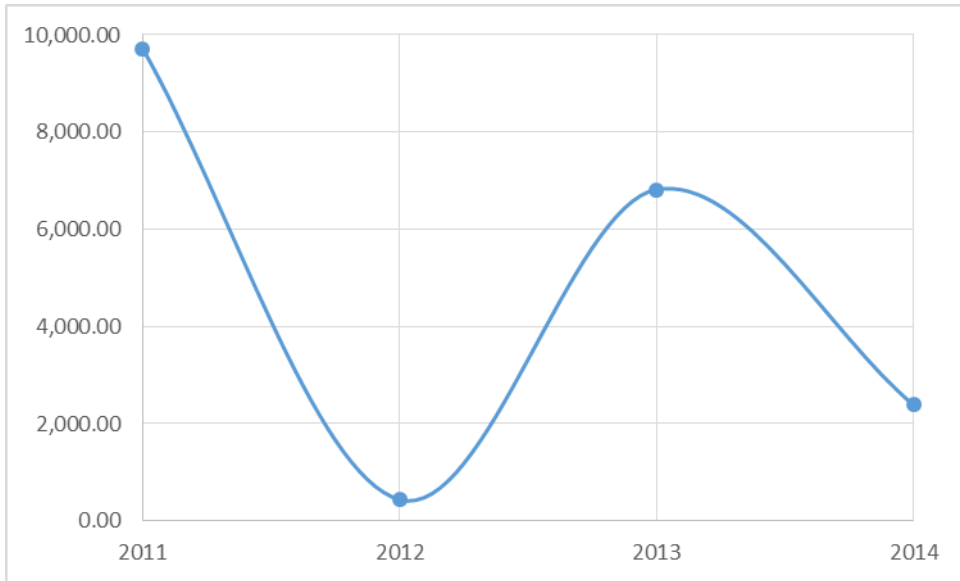
After "Selected Acquisition Report Summary Tables," USD AT&L, 2010–2014, accessed June 12, 2015.

Figure 12 shows no decreases in cost associated with schedule. The schedules for these programs continue to move to the right, resulting in cost increases.

Figure 13.   Engineering Changes to Hardware/Software ($M)
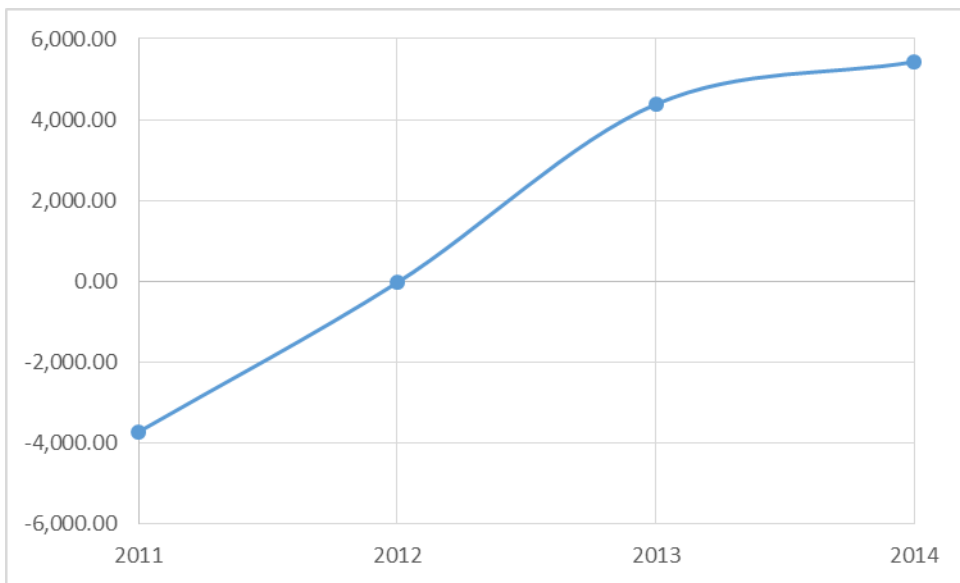
After "Selected Acquisition Report Summary Tables," USD AT&L, 2010–2014, accessed June 12, 2015.

Figure 13 demonstrated how "requirements creep" affects programs because of continuing engineering changes to either the hardware or the software of the systems.

This data analysis review shows the PM's charter of management and control of cost, schedule, and performance. Although over the last five years, DOD acquisition programs have experienced fewer critical and/or significant breaches, the management of cost, schedule, and performance has not resulted in decreased costs. The DOD has a process that supports the deliberate acquisition of a system, and multiple processes/organizations that support the rapid acquisition of systems. However, those rapid acquisition processes support wartime momentum. During peacetime, without deployed soldiers in need of equipment, we require an agile rapid acquisition process.

B. VALUE ANALYSIS

This analysis will identify value-added versus non-value added parts of the process. It will also evaluate the utility of rapid acquisition during peacetime, without an urgent need. This analysis will focus on the identification of what the customer values.

This situation involves two customers, the user and the taxpayer. The soldier will utilize equipment in the field, and in extremely dangerous and unpredictable conditions. The taxpayer's dollar funds this effort, and the DOD should bear that in mind when making decisions regarding costs.

After reviewing a thesis written by Michael W. Middleton in December 2006, on *Assessing the Value of the JRAC*, we realized that the value centers[171] used in his thesis conformed to the areas that we should evaluate within ours.

1. Value Center One: Speed

When considering rapid acquisition, we must consider speed as the most important factor. How quickly can a soldier receive the system without compromising quality? Our research indicates that many rapid processes follow a timeframe of two

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[171] Middleton, "Assessing the Value of the Joint Rapid Acquisition Cell," 45–52.

years. That timeframe proves to be both effective and efficient and makes this area valuable to rapid acquisition and required for a reformed process.

2. Value Center Two: Agility

Agility broadly describes not just quick decision making without involving high levels of bureaucracy, but also agility with respect to the funding of the effort, and types of funding associated with the effort. In conducting rapid acquisition, agility has tremendous value.

3. Value Center Three: Elevated and Streamlined Bureaucracy

Conducting rapid acquisition in an efficient and effective manner requires keeping the levels of bureaucracy at a minimum. Typically, military organizations have multiple levels of bureaucracy and skipping a level means insubordination. In some of our NPS classes, we studied organizations that conduct business very quickly, including the Defense Advanced Research Projects Agency (DARPA). In a case study written and provided to us personally by our professor, Nicholas Dew, it is apparent that their organizational structure supports the ability to get new projects realized, "Internally, the DARPA organization is flat, with just one management layer (the office of directors, of which there are usually six to eight) between the director and approximately 140 individual program managers that pursue research projects."[172] Formulating a rapid acquisition process requires this type of structure.

4. Value Center Four: Focus

In the current acquisition process, lack of focus contributes to cost, schedule, and performance issues. Consider, for example, the requirements process. The DOD refers to the term "requirements creep" when a program reflects poorly on the PM. "Requirements creep" means adding new requirements or capabilities to an ongoing program. A vaguely

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[172] This informally published document by Nicholas Dew, who based his research on an original document by Michael Thompson, Michael Hawkins, and Cindi Thomas, is not accessible to the general public. Titled "The 'As' in DARPA: Advanced or Applied," it was written by Dew in April 2007 and provided to the authors in class through the Naval Postgraduate School's Sakai collaboration website.

defined requirement still open to interpretation, will often create "requirements creep." Nevertheless, the issue can occur even in situations with a well-defined requirement. Usually, the user community, always wanting the next gadget or "bigger and better" idea, causes the problem rather than the PM. When conducting rapid acquisition, less time means less chance that requirements get out of control. To avoid requirements creep, we should consider these approaches:

- Understand the leadership's vision, and the desires of the user from the beginning of the program

- Always have program priorities in order

- Define what you are supposed to deliver

- Use a work breakdown structure (WBS)

- Develop a detailed schedule

- Determine a critical path

- Be prepared for requirements creep and how to deal with it[173]

If executed properly, this area will add value, so we need to ensure that any instituted rapid acquisition process addresses these concerns.

5. Value Center Five: Alignment with Acquisition Strategy

In both rapid acquisition and the deliberate acquisition process, the acquisition strategy represents the baseline for any program. After reviewing various rapid acquisition processes/organizations, one document – the acquisition strategy – has not lost its utility. Therefore, when considering a reformed rapid acquisition process, ensure continued alignment with the acquisition strategy to assure the program's success.

6. Value Center Six: Life Cycle Costs

The taxpayer funds our efforts; therefore, we must ensure that life cycle costs in acquisition remain reasonable. Cost always remains important, but during wartime, the

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[173] Shelley Doll, "Seven Steps for Avoiding Scope Creep," *TechRepublic*, March 13, 2001, http://www.techrepublic.com/article/seven-steps-for-avoiding-scope-creep/.

urgency of rapid acquisition makes speed the priority. When institutionalizing rapid acquisition during peacetime, speed and cost have equal importance.

7.   Value Center Seven: Lessons Learned

Feedback allows a necessary and diverse range of input from many different programs using the acquisition process. For instance, we can compare PEO Soldier's portfolio and PEO Ground Combat Systems' (GCS) portfolio. PEO Soldier's portfolio largely contains ACAT III programs, whereas, PEO GCS's portfolio largely contains ACAT I programs. Each PEO office will have a different perspective on the acquisition process and lessons learned from their experience.

The Center for Army Lessons Learned (CALL) "collects, analyzes, disseminates, integrates, and archives observations, insights, and lessons (OIL); tactics, techniques, and procedures (TTP); and operational records to facilitate rapid adaptation initiatives and conduct focused knowledge sharing."[174] Quarterly update meetings held with the AAE require a brief on lessons learned. While this demonstrates movement in the right directions, the message often does not reach the lower levels where the real work happens. Without context from the PM who experienced it, understating the nuances of a lesson learned can present a challenge.

8.   Value Center Eight: Evolving Nature of War

This area refers back to value center two in terms of the fact that we must maintain our agility in response to the evolving nature of war. This evolution can take place with the type of enemy, the location of the conflict, and the response to it (with Army ground troops, Air Force pilots, Navy seamen, marines, etc.). In order to achieve rapid acquisition, we must change with the enemy. When the next conflict begins, the DOD must stand prepared to fight the enemy with the best technology available on the market. In order to do that, we must evolve and innovate during peace, as well as wartime.

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[174] "Establishing a Lessons Learned Program," Global Security, accessed August 29, 2015, para. 1, http://www.globalsecurity.org/military/library/report/call/call_11-33-appd.htm.

Managing these eight value centers can prove detrimental or advantageous to the rapid acquisition process. However, if we understand how to manage these value centers properly, they are valuable as a baseline for an institutionalized rapid acquisition process.

VI. FINDINGS AND RECOMMENDATIONS

The goal of this research was to investigate whether the current regulations and policies facilitate our ability to conduct rapid acquisition in a repeatable and manageable way. The methodology used to analyze the data was a combination of SARs data and the KVA theory, evaluating eight value centers. The research displayed multiple rapid acquisition options available when faced with an urgent need. The literature review exposed the need for change by citing numerous studies, articles, a Senate investigation and even congressional testimony. This research supported the need for more speed and agility in the acquisition process. The case reviews assessed military and industry rapid acquisition programs/processes to provide the reader with an understanding of and comparison to the current ad hoc military rapid acquisition process. Our analysis of SARs helped us to understand how both rapid and deliberate acquisition programs are performing, supporting our research question on whether the current regulations enable rapid acquisition. The analysis of the value centers determined that they are instrumental to a repeatable and manageable rapid acquisition process. Within this chapter, we will discuss the conclusions because of our research.

A. FINDINGS

In order for the DOD to continue having a modern "cutting edge" force, capable of defending the homeland and deterring aggression from abroad, we need to continue the modernization of our forces at a rate faster than our allies and enemies worldwide. The current fiscal and threat environments require that we do more with less, and respond quickly to capability gaps in an ever-changing and unpredictable threat environment. Our research demonstrates that current acquisition regulations and policies do not facilitate conducting rapid acquisition in a repeatable and manageable manner. The current rapid acquisition processes focus only on urgent needs. These processes are ad hoc and do not support repetition. The Background, Literature Review and Case Review chapters support this conclusion. Table 2 breaks down the sources and findings of our research and analysis.

Table 2.   Research and Analysis Findings

Source	Findings
GAO Study on acquisition reform[175]	• Acquisition reform is required through an overhaul of the system • Supports a reduction in bureaucracy, documentation requirements and briefings, stakeholders
Senate staff report on defense acquisition reform with panel of 30 experts[176]	• Supports acquisition reform by incentivizing the workforce and reducing regulatory burdens
USD AT&L congressional testimony[177]	• Acquisition reform is necessary and achievable through BBP initiatives • Supports evolutionary acquisition reform • Supports reduction in bureaucracy, incentivizing the workforce, controlling life cycle costs
Article on HASC chair announcing acquisition reform legislation	• Proposed legislation that supports "simplified decision-making and thinning out of regulations"[178]
Article on SASC chair's focus on ending cost-plus contracts[179]	• Supports acquisition reform by utilizing fixed price contracts vs. cost-plus

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[175] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*.

[176] Levin and McCain, *Defense Acquisition Reform: Where Do We Go From Here? A Compendium of Views by Leading Experts*.

[177] *Reform of the Defense Acquisition System: Testimony Before the Senate Committee on Armed Services*.

[178] Eckstein, "Thornberry Announces Acquisition Reform Legislation," para. 5.

[179] Glabe, Plitsch, and Brown, "Senator McCain Renews Focus on Ending Cost-Plus Contracts."

Source	Findings
Article on building fast, effective acquisition by Bill Greenwalt[180]	- Supports rapid acquisition during both war and peacetime - Supports absolute acquisition reform
DOD 5000.02 enclosure 13[181]	- Supports evolutionary acquisition reform - Focused on urgent need, does not address a peacetime need
SARs[182]	- Appears that the PM saved money but in reality the additional support requirements shifted to the next FY - Management of cost, schedule and performance negatively affected by cost estimate instability, schedule delays and "requirements creep"
Value centers	Areas that are critical to a rapid acquisition process that is efficient and effective

After reviewing the Selected Acquisition Reports in both the Case Review and Data Analysis chapters, we see the quantity of Nunn-McCurdy unit cost breaches decreasing each year.[183] This seems to reflect not only PMs paying more attention to the reportable requirements, but the efficacy of our processes. Without further research, we may infer that we "do more with less." However, our analysis indicates that other factors played into lowering costs, such as lower escalation rates (percentage of annual change in the price levels of goods/services occurs), and reductions in support requirements. This budgeting technique simply shifts the requirement outside the reporting period, lowering

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[180] Greenwalt, "Build Fast, Effective Acquisition: Avoid the System We've Got."

[181] Department of Defense, *Operation of the Defense Acquisition System*, 144.

[182] "Selected Acquisition Report Summary Tables," USD AT&L, accessed June 12, 2015.

[183] Ibid.

program costs, but without the requirement really going away. Our analysis leads to the conclusion that the reporting requirements and current regulations do not support speed and agility; if they did, it would lead to a reduction in program costs.

Our analysis further indicates that the current regulations do not support a repeatable and manageable rapid acquisition process because of the consistent need for PMs to "bypass" the process. The Literature and Case Review chapters uphold this conclusion. Referring back to the MRAP case, this program was successful because it was the DOD's number one priority,[184] and therefore, was able to "bypass" any requirements that did not support program goals.

The GAO study highlighted the deliberate acquisition process' deficiencies and supported an institutionalized rapid acquisition process. The recommendations section of the study stated, "As a longer-term effort, select several current or new major defense acquisition programs to pilot, on a broader scale, different approaches for streamlining the entire milestone decision process, with the results evaluated and reported for potential wider use."[185] The study focuses on a reduction in required documentation and briefings, as well as the number of stakeholders involved, in order to streamline the process. A panel of thirty experts from fields throughout the DOD expressed their opinions on the inefficiencies of the current regulatory environment in supporting a manageable rapid acquisition process.[186] Our experience and analysis indicates that programs spend an inordinate amount of time preparing for a milestone decision. The preparation involves drafting 49 documents required to obtain approval for the next milestone phase.[187] Our analysis illustrates that focusing on a few critical documents enables a successful program. Therefore, we must strive to reduce the quantity of documents required for a

[184] *Rapid Acquisition of MRAP Vehicles: Testimony Before the House Armed Services Committee*.

[185] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*, 31.

[186] Levin and McCain, *Defense Acquisition Reform: Where Do We Go From Here? A Compendium of Views by Leading Experts*.

[187] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*, 6.

milestone decision, the number of stakeholders involved, and the number of briefings presented to achieve a milestone decision.

Our analysis of the value centers highlights eight areas critical to rapid acquisition: speed, agility, elevated and streamlined bureaucracy, focus, alignment with acquisition strategy, life cycle costs, lessons learned, and the evolving nature of war.

Our research and analysis concludes that current regulations do not support rapid acquisition, and points to the necessity of a reformed process that can meet user needs during both war and peacetime. Referring back to Bill Greenwalt's quote in the Background chapter, "One of the truths of the last 50 years of acquisition practice is that whenever the military really needed something it bypasses the traditional acquisition process and uses a more streamlined approach. Recognizing this reality is the first step in building an acquisition system that works."[188] Reforming the process enables the U.S. military to prepare itself for emerging threats. The Case Review chapter supported this assertion by demonstrating the success of a rapid acquisition program when the process is "bypassed." The Literature Review chapter's discussion on sequestration clarifies the immediate need for reform. Understanding that budgets continue to shrink, a process that reduces schedules; allows for immediate decision-making and financial flexibility; reduces time spent on documentation, and briefings; removes stakeholders from the process (allowing them to focus on other efforts); and incentivizes the workforce for the right outcome satisfies the future needs of the acquisition community.

B.   RECOMMENDATIONS

We recommend institutionalization of a reformed rapid acquisition process to allow for ease of use. This reformed process will address reporting structure, fiscal flexibility, a rapid acquisition "horse blanket," reduction in documentation requirements, rapid acquisition requirement development, incentivizing and empowering the workforce and a reduction in the economic useful life (EUL) of systems. In order to ensure a repeatable and manageable process, we recommend incorporation of the value centers

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[188] Greenwalt, "Build Fast, Effective Acquisition: Avoid the System We've Got," para. 1.

and lessons learned from both DOD and industry case reviews into the baseline for a revised rapid acquisition process. We recommend the following areas for reform, and to use as a baseline for a revised rapid acquisition process.

1.   Reporting Structure

The reporting structure for the acquisition process must be decentralized, and less bureaucratic. The reporting structure affects every step taken during the drive toward milestone approval. For example, the document review, the briefings to upper level staff and decision makers, and the quantity of people involved in the process will all show positive effects if we reduce reporting requirements.

Figure 14 displays an example of a suggested reporting structure. It represents the reporting structure of the Army, but that structure dilutes with the addition of each level's respective staff. Staff participation in milestone approval slows the process down. We recommend conducting one meeting at each level, with all staff present after reviewing documentation related to their area of expertise. This meeting would provide the staff an opportunity to voice their concerns and to have issues resolved on the spot rather than in back and forth comments via email.

This recommendation emerged from the Literature Review chapter's review of the GAO study. The study suggested that areas contributing to delays in the acquisition process result from bureaucratic staffing, review, and approval processes.[189]

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[189] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*.

Figure 14.   Rapid Acquisition Reporting Structure
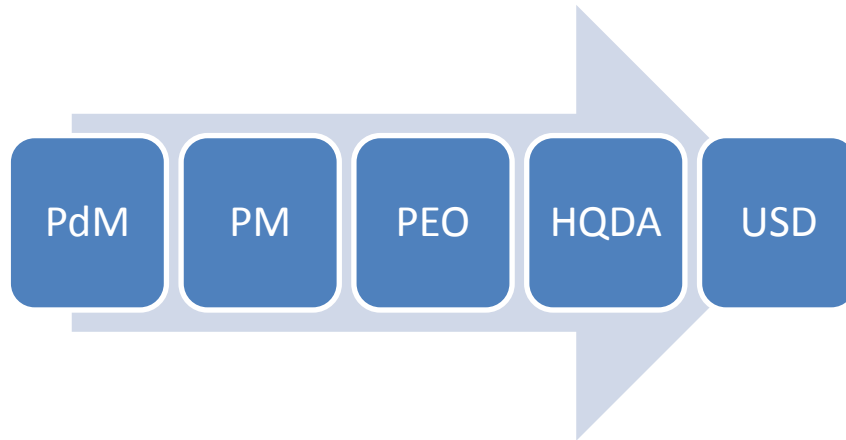
2.   Fiscal Flexibility

In order to support a repeatable and manageable rapid acquisition process, the fiscal environment must conform to that need. In our review of the MRAP program, we learned that successful rapid acquisition requires available and stable funding.[190] The stability of that funding connects directly to leadership involvement and support for that program. Referring back to the Background chapter, where we discuss rapid acquisition options, the success of achieving rapid acquisition directly relates to the availability of a funding source when a need arises.

3.   Rapid Acquisition Horse Blanket

We recommend displaying the revised rapid acquisition process in a timeline with requirements for each development phase. We currently have the "horse blanket" for the deliberate acquisition process, but the rapid acquisition process needs the same level of detail to ensure users understand the "ins and outs" of the process.

4.   Reduction in Documentation Requirements

Currently there are 49 documents required at each milestone review.[191] We recommend reducing the quantity of documents required to obtain a milestone decision to

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[190] *Rapid Acquisition of MRAP Vehicles: Testimony Before the House Armed Services Committee.*

[191] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*, 6.

allow for a more efficient process. Referring back to the GAO study discussed in the Literature Review chapter, PMs ranked documents from less than moderate value, to moderate value, to high value.[192] The areas listed below fall into the high value list of documents, and can encompass the information needed for leadership to make a "go or no go" decision. These primary areas encompass a total view of critical parts of the acquisition process. In comparing the value of the acquisition strategy to the corrosion prevention control plan, we note that the acquisition strategy serves as the strategy for the program, and the baseline for other critical documents. The corrosion prevention control plan prevents and controls corrosion from affecting the availability, cost, and safety of the program. Both documents are required for milestones, but only one is critical.

- Requirement documentation. We recommend a revised version of the JCIDS requirement (see #5 below). The JCIDS requirement not only details the needed capability but also its key performance characteristics.

- Acquisition documentation. We recommend requiring the acquisition strategy, acquisition program baseline, test and evaluation management plan, systems engineering plan and life cycle sustainment plan. We described the acquisition strategy above. The acquisition program baseline is a contract between the PM and the PEO to maintain cost, schedule and performance. The test and evaluation management plan documents the structure and goals of the test plan. The systems engineering plan captures the systems engineering strategy. The life cycle sustainment plan implements the sustainment strategy.

- Budgeting documentation. We recommend requiring the component cost estimate. The component cost estimate encompasses an estimate of the life cycle cost for the system.

5. Rapid Acquisition Requirement Development

Taking advantage of a revised rapid acquisition process depends upon the ability to develop a requirement quickly. Referring to the Background chapter and the REF requirement development process, we recommend utilizing a form of the REF 10-liner as a baseline for development of rapid acquisition requirements.

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[192] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*, 6.

- Problem and justification. The problem describes the capability gap and the justification describes why we need to fill this capability gap, and why it requires utilization of the rapid acquisition process

- System characteristics. The system characteristics describe what the solution must achieve. For example, dimensions, type of power supply, performance characteristics, etc.

- Operational concept. The operational concept describes how the material solution solves the capability gap and how to employ the system. For example, geographical location or employment, mounted/dismounted, duration of operation, etc.

- Procurement objective. The procurement objective describes the number of systems required and the basis of issue

- Support requirements. The support requirements describes how we will support the system through maintenance, spares, consumables, and sustainment[193]

After documenting the requirement to avoid "requirements creep" by ensuring the support of leadership, we must stick to the program schedule, communicate with the user and document everything.

6.   Incentivizing and Empowering the Workforce

We recommend empowering leaders to make decisions. This recommendation goes back to the reporting structure as well as the Apple Inc. case review in the Case Review chapter, which encouraged empowerment rather than bureaucracy as a way to achieve rapid acquisition.

We recommend a reduction in the quantity of military PMs and an increase in the quantity of civilian PMs. While working in the DOD, we have all heard the statement "government civilians are the continuity." With military personnel changing jobs every two to three years, and their careers progressing because of program milestones and not program viability, we need to consider that civilians have the experience to make sound program decisions.

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[193] Whaley and Stewart, "Path from Urgent Operational Need to Program of Record," 529.

We also recommend establishing incentives for the workforce to make sound business decisions based on program management versus achieving milestone decisions.

Referring back to the Senate staff report on defense acquisition reform discussed in the Literature Review chapter, leading experts supported the assertion that we incentivize the wrong outcome.[194] We do not want our PMs to move their programs along without regard for their viability. The recommendation to increase the civilian PMs throughout the DOD also supports this conclusion.

7. Reduction in the Economic Useful Life of Systems

We recommend a reduction of the EUL of systems to support rapid acquisition. The current EUL for some programs can range from eight years (electronics equipment) to fifty years (weapons).[195] We can cut costs in the sustainment phases of the program because of less time spent there due to rapid modernization. Cost savings can then transfer to another rapid acquisition effort. Referring back to the Literature Review chapter, the USD AT&L supports the idea of cost savings using Should Cost and Affordability BBP initiatives.[196] These initiatives allow cost savings to return to the PM for use on other programs. We can apply the same strategy in this situation. By shortening the time a system is in sustainment, we ensure that through a repeatable and manageable rapid acquisition process we can respond to the ever-evolving threat environment.

C. CONCLUSION

Our experience in the acquisition community led to the desire to pursue this thesis topic. PEO Soldier utilized the RFI process, rapid acquisition processes and the deliberate acquisition process. The RFI process enabled PEO Soldier to field equipment to

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[194] Levin and McCain, *Defense Acquisition Reform: Where Do We Go From Here? A Compendium of Views by Leading Experts*.

[195] ASA (AL&T), "Implementation of Economic Useful Life," Memorandum, Washington, DC: ASA (AL&T), 2012.

[196] *Reform of the Defense Acquisition System: Testimony Before the Senate Committee on Armed Services*.

deploying soldiers quickly. Deployed soldiers submitted ONS to obtain PEO Soldier equipment in an efficient manner. The deliberate acquisition process never fully met the needs of the ACAT III heavy PEO. PMs within PEO Soldier utilized the waiver process to shorten the preparation time for milestone decisions. However, as discussed in the Literature Review chapter, the process to get an approved waiver is lengthy; resulting in PMs writing the document and getting it approved faster than if they obtained a waiver.

This research project reviewed current rapid acquisition options, a rapid acquisition program, a deliberate acquisition program, and an industry acquisition process. We reviewed literature from a variety of trusted sources. We analyzed data from SARs and the results pointed to an inability to manage cost, schedule, and performance. We analyzed eight value centers that contributed to our recommendations on how to institutionalize rapid acquisition.

Our research and analysis determined that in order to address modernization in the current and future fiscal environment, with an ever-evolving threat, the acquisition community needs an institutionalized rapid acquisition process.

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APPENDIX A. CURRENT ACQUISITION PROCESS

In order to understand our goal (rapid acquisition processes), we need to understand our point of origin (current acquisition process).

Every PM follows the integrated defense acquisition, technology, and logistics life cycle management system. An acquisition program provides a new capability in response to an approved requirement. A program becomes a program of record (POR) when it reaches a successful milestone B (MS B). On the following pages, Figure 15 displays the entire acquisition process, and Figure 16 displays a less detailed view of the acquisition process. Figure 15 shows the level of detail and stakeholders involved in the acquisition process, and demonstrates why the process takes five to seven years from beginning to end.

According to the Defense Acquisition Portal, preparing and obtaining approval for the materiel development decision (MDD) marks a program's entrance into the acquisition process. At that time, the milestone decision authority (MDA) determines the acquisition phase the program enters, identifies the initial milestone, designates the lead service, and issues an acquisition decision memorandum (ADM). In order to achieve a successful MDD, the PM must have an initial capabilities document (ICD), and analysis of alternatives (AOA) study guidance approved by the Director of the Cost Assessment & Program Evaluation (CAPE).[197]

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[197] "Defense Acquisition Portal," Milestone Document Identification, accessed June 12, 2015, https://dap.dau.mil/Pages/Default.aspx.

Figure 15.   Integrated Defense Acquisition Framework
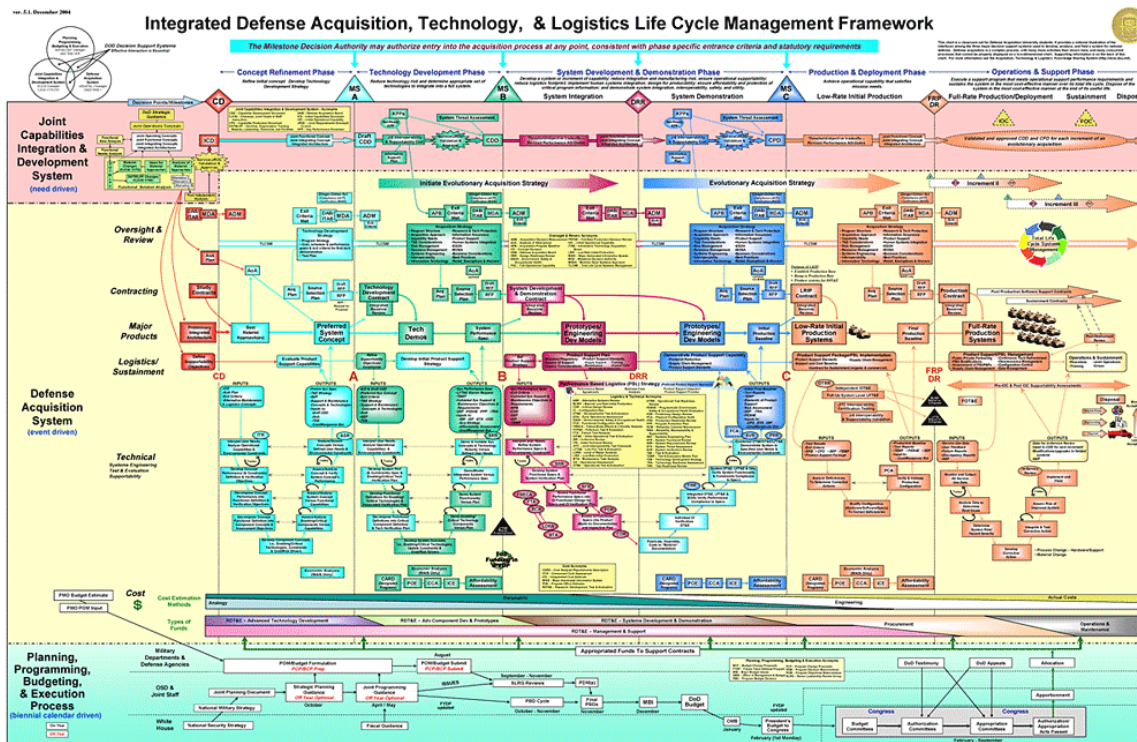
From "Integrated Defense Acquisition, Technology, & Logistics Life Cycle Management Framework," The Official Navy website, accessed August 21, 2015, http://www.public.navy.mil/spawar/PEOC4I/ASPG/Documents/APSG_Manuals/files/Integrated_Def_Acq_Management_Frmwk.pdf Defense Acquisition Framework.

Figure 16.   Defense Acquisition Framework
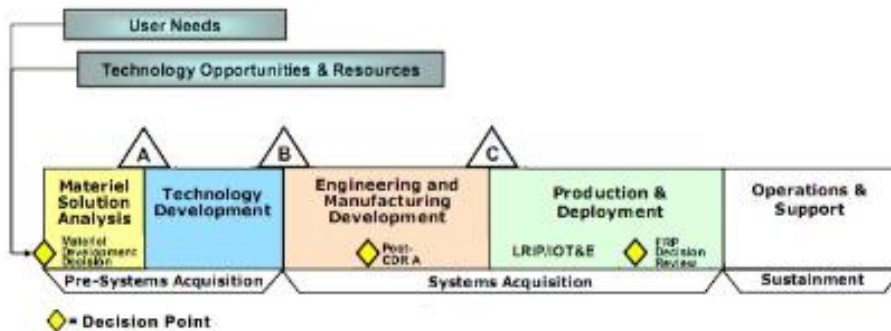
From "Defense Acquisition Portal."

Defense Acquisition Portal affirms that once the PM has obtained an approved MDD, the program can move into milestone A, B, or C depending on its technology readiness level (TRL). However, since we want to understand the entire acquisition process, we will start at the beginning with the materiel solution analysis (MSA) phase. In order to enter this phase of the acquisition process, the PM must have an approved ICD and study guidance for conducting an AOA. During this phase, the PM completes the AOA, the technology development strategy (TDS) moves forward and the draft of the capability development document (CDD) begins. When the program exits this phase, the MDA will select the materiel solution and approve the TDS.[198]

At this point in the acquisition process, the MDA makes the milestone A (MS A) decision. The MDA approves the materiel solution, the TDS, the exit criteria for the next phase, the MS A Certification (10 USA 2366a), and signs an ADM.[199] See Table 3 for the statutory and regulatory documentation required for MS A.

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[198] "Defense Acquisition Portal," Milestone Document Identification and Integrated Defense Acquisition Framework.

[199] Ibid.

Table 3.   MS A Statutory & Regulatory Requirements

- *ADM*
- *AOA*
- *Acquisition information assurance strategy (AIAS)*
- *CCA compliance*
- *Chief information officer (CIO) confirmation of CCA compliance (MDAP/MAIS)*
- *Consideration of technology issues*
- *Component cost estimate (CCE) (MDAP/MAIS)*
- *Component cost position (CCP) (MDAP/MAIS)*
- *Economic analysis (MAIS)*
- *Exit criteria*
- *ICD*
- *Item unique identification (IUID) implementation plan*
- *Life cycle signature support plan (LCSSP)*
- *Market research*
- *MDA program certification (MDAP)*
- *Program protection plan (PPP)*
- *SEP*
- *TDS*
- *Test & evaluation strategy (TES)*

After "Defense Acquisition Portal," Milestone Document Identification.

Key activities during the Technology Development phase include:

- Utilize competitive prototyping and demonstrate the technology in a relevant environment

- Conduct risk reduction on all components

- Plan for life cycle sustainment

- Conduct technology readiness assessments (TRA)

- Perform the system-level preliminary design review (PDR) for the current design[200]

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[200] "Defense Acquisition Portal," Milestone Document Identification and Integrated Defense Acquisition Framework.

The Defense Acquisition Portal emphasizes that the MS B decision requires an approved CDD. If the program enters the process at this phase, the PM also needs to have an approved ICD. The MDA approves program initiation, passage into the EMD phase, the AS, the APB, the low rate initial production (LRIP) quantities, the exit criteria for the next phase, and signs an ADM. Table 4 lists statutory and regulatory requirements.[201]

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[201] "Defense Acquisition Portal," Milestone Document Identification and Integrated Defense Acquisition Framework.

Table 4.   MS B Statutory & Regulatory Requirements

- *ADM*
- *Affordability analysis*
- *APB*
- *AS*
- *Bandwidth requirements review (MAIS)*
- *Cost analysis requirements description (CARD)*
- *CCA compliance*
- *Core logistics determination*
- *Component cost estimate (CCE) (MDAP/MAIS)*
- *Component cost position (CCP) (MDAP/MAIS)*
- *Cybersecurity strategy (MAIS)*
- *Exit criteria*
- *Full funding certification memorandum*
- *Frequency allocation application (DD 1494) (MAIS)*
- *Independent cost estimate (ICE)*
- *Independent logistics assessment (ILA)*
- *Item unique identification implementation plan*
- *Life cycle mission data plan*
- *Life cycle sustainment plan (LCSP)*
- *LRIP quantity*
- *Manpower estimate*
- *PESHE and NEPA/EO 12144 compliance*
- *PPP*
- *Replaced system sustainment plan*
- *Should cost target*
- *Spectrum supportability risk assessment (SSRA) (MAIS)*
- *SEP*
- *TRA*
- *Test and evaluation master plan (TEMP)*
- *Waveform assessment application (MAIS)*

After "Defense Acquisition Portal," Milestone Document Identification.

The integrated system design begins when entering EMD, prior to pre-critical design review (CDR) assessment, as defined in the Defense Acquisition Portal. During that time, the PM defines system functionality and interfaces, completes design, conducts system-level PDR/CDR, and establishes the product baseline. During this phase, the PM conducts the developmental test (DT), operational test (OT), and live fire test and

evaluation (LFT&E) to assess progress toward the CDD requirements. In order to transition from EMD into a MS C decision, the PM demonstrates the system in the intended environment, as well as the manufacturing processes. The program must also meet the exit criteria and MS C entrance requirements.[202]

The MS C decision commits the program to production and requires an approved capability production document (CPD). The MDA approves the updated AS and APB, the LRIP quantity or the ability to go directly into full rate production (FRP), the exit criteria for LRIP (if necessary), and signs an ADM.[203]

During the LRIP phase of MS C, the PM conducts initial operational test and evaluation (IOT&E), LFT&E and interoperability testing of production representative articles. At this point initial operational capability (IOC) may occur. Key activities during this phase include intensive testing, preparing the request for proposal (RFP) for FRP, and preparation by the PM for FRP decision review (FRPDR).[204]

Approval for the FRP decision requires an operationally effective system, suitability and readiness for full-rate production, and submission of testing reports to Congress. The MDA approves FRP, the updated AS, the updated APB, exit criteria, evaluates post-deployment performance, and signs the ADM. During the FRP, the vendor produces the systems at full rate to support fielding. The PM will realize the initial operational capability (IOC) and full operational capability (FOC) during this phase as well. Table 5 lists the statutory and regulatory MS C requirements.[205]

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[202] "Defense Acquisition Portal," Milestone Document Identification and Integrated Defense Acquisition Framework.

[203] Ibid.

[204] Ibid.

[205] Ibid.

Table 5.   MS C Statutory & Regulatory Requirements

- *ADM*
- *Affordability analysis*
- *APB*
- *AS*
- *Bandwidth requirements review (MAIS)*
- *CDD*
- *CPD*
- *CCA compliance*
- *Concept of operations/operational mode summary/mission profile (CONOPS/OMS/MP)*
- *Core logistics determination*
- *Component cost estimate (CCE) (MDAP/MAIS)*
- *Component cost position (CCP) (MDAP/MAIS)*
- *Cost analysis requirements description (CARD)*
- *Cybersecurity strategy (MAIS)*
- *Exit criteria*
- *Full funding certification memorandum*
- *Frequency allocation application (DD 1494) (MAIS)*
- *Independent cost estimate (ICE)*
- *Independent logistics assessment (ILA)*
- *Item unique identification implementation plan*
- *Life cycle mission data plan*
- *Life cycle sustainment plan (LCSP)*
- *Manpower estimate*
- *PESHE and NEPA/EO 12144 compliance*
- *Preservation and storage of unique tooling plan*
- *PPP*
- *Should cost target*
- *Small business innovation research (SBIR)/small business technology transfer (STTR) program technologies*
- *Spectrum supportability risk assessment (SSRA) (MAIS)*
- *SEP*
- *TRA*
- *Test and evaluation master plan (TEMP)*
- *Waveform assessment application (MAIS)*

After "Defense Acquisition Portal," Milestone Document Identification.

The Operations and Support (O&S) phase begins immediately upon fielding or deployment. During this phase, the PM maintains operational readiness of deployed

systems, executes support plans, conducts upgrades to hardware and software, and monitors user confidence in the system.[206]

Once the system reaches its EUL, it is demilitarized and disposed of, with utmost importance placed on environmental considerations and explosives safety.[207]

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[206] "Defense Acquisition Portal," Milestone Document Identification and Integrated Defense Acquisition Framework.

[207] Ibid.

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# APPENDIX B. BETTER DEFENSE ACQUISITION: IMPROVING HOW WE PROCURE AND SUPPORT DEFENSE EQUIPMENT

The United Kingdom (UK) has the fourth largest defense budget in the world, and like the US, has an interest in improving their procurement process.[208] This review of the UK Ministry of Defense (MOD) study shows the similarities between the UK and U.S. acquisition processes, as well as the constant desire to improve upon them. The study discusses two major areas of reform, "the creation of a new body to replace the existing defense equipment and support organization, and the strengthening of the arrangements governing the procurement of equipment where MOD is unable to source its requirement through open competition."[209] Figure 17 illustrates the process that the UK MOD uses for procurements, similar to the United States DOD integrated defense acquisition, technology, and logistics life cycle management system, otherwise known as the "horse blanket." The head office, defense equipment & support, information systems and services, and the commands are directly involved in the acquisition process.[210]

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[208] Henry Porter, "What Budget for Defense? First Let's Work Our Britain's Place in the World," *The Guardian*, February 2, 2013.

[209] Ministry of Defense, *Better Defense Acquisition: Improving How We Procure and Support Defense Equipment* (CM 8626) (London, UK: Ministry of Defense, 2013), 6.

[210] Ministry of Defense, *Acquisition System Operating Model*, Version 3.0, (London, UK: Ministry of Defense, 2015).

Figure 17.   Acquisition System Within Context of Defense Operating Model
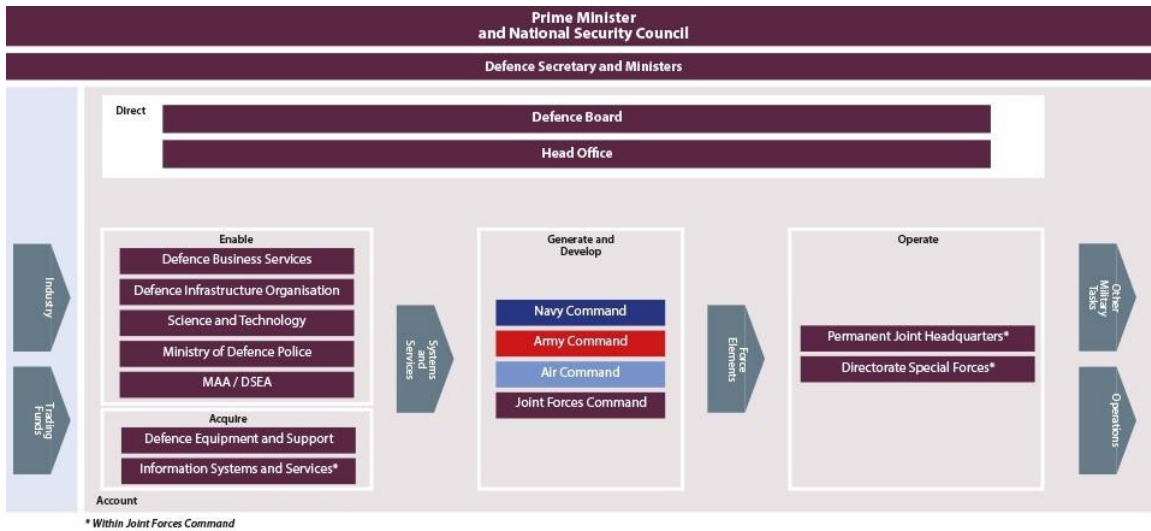
From Ministry of Defense, *Acquisition System Operating Model*,
Version 3.0, (London, UK: Ministry of Defense, 2015), 10.

The MOD has identified three root causes of recurring issues that relate to
reforming the defense equipment and support (DE&S) organization:

1.   Overspending on programs. This issue goes back to requirements creep,
      when people continue to add new requirements to systems with the
      impression that the capability of the systems increases, but without
      considering the planned costs, and how much they balloon due to changes.
      The overspending on one program results in a need to cut spending on
      another program.

2.   Lack of communication between the parts of the MOD that request the
      equipment/services, and the organization that delivers them. In an effort to
      ensure that the servicemen/women have what they need to do their jobs,
      the defense department tends to approve changes for added capability, as
      requirements change late in the program's development. Typically, these
      changes do not take into account the impact to the budget. Additionally,
      military or civilians may demonstrate the inability to maintain an
      independent position due to pressure from people higher up in their chain
      of command.

3.   Lack of processes, tools, and skills as well as management freedom to
      make decisions and follow through on those decisions. The varied and
      highly technical nature of the skills required to work within the DE&S

poses a problem when the civilian pay scale does not meet the same standards as the personnel needed to do the work.[211]

According to the study by the UK MOD, they addressed the budget and worked to balance spending. However, all three issues continue to affect the success of programs. The UK MOD is considering a government-owned, contractor-operated (GOCO) model where the MOD would establish a contract with a private company, acting on behalf of the MOD. The services that the DE&S currently provides would transition to the private company. In this instance, the private company works for profit, increasing the potential for sustained improvement. Within this model, the MOD continued its role as the approving authority, with the requirement that the GOCO abides by the *Government Financial Reporting Manual* (FReM). Since transitioning the scope of work from the DE&S to the private company would represent a significant undertaking, the plan to transition would occur over a nine-year timeframe/contract.[212] Figure 18 shows how the transition would take place.

Figure 18.   Implementation of GOCO Operating Model
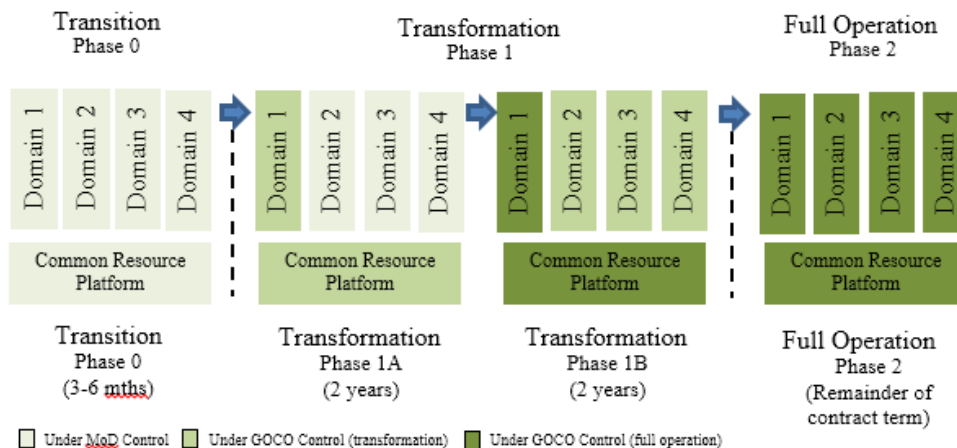
From Ministry of Defense, *Better Defense Acquisition: Improving How We Procure and Support Defense Equipment*, 18.

[211] Ministry of Defense, *Better Defense Acquisition: Improving How We Procure and Support Defense Equipment*, 12–14.

[212] Ibid., 17–20.

The MOD has also focused on reforming single-source procurement. The feasibility of the militarization of commercial items, in those circumstances, makes it easy to find multiple suppliers. However, in some specialties, only one supplier can produce a combat ready product. The MOD study declares that they spend six billion British pounds (approximately $9.3 billion) every year on single-source procurements. With a lack of competition, vendors can price their equipment based upon how much profit they desire or require, and the government ends up overpaying as a result. The vendors also know that the military needs the equipment, and that despite high prices and low performance, the military will continue to procure from that single vendor because they have no other options.[213]

According to the study, the MOD, in consultation with industry, has developed a new framework for single source procurement. The MOD will allow industry a fair profit in exchange greater transparency, allowing them to examine the suppliers' processes for efficiency. A standardized report provided to the MOD will allow them to identify areas for cost reduction. The MOD will hold the supplier accountable for their cost projections to ensure the MOD receives fair and reasonable pricing. Instituting this new framework on a statutory basis, rather than by contract, will establish this requirement consistently throughout single-source supply chains. The establishment of a single-source regulations office (SSRO) will ensure compliance, monitor application of and conformity with regulations, and provide conclusive determinations if a dispute between the MOD and a single source supplier arise.[214]

The reformation of single-source procurement should address better price negotiation and stronger efficiency incentives. Due to the lack of competition to drive down prices, the MOD and the new framework must have the ability to ensure competitive prices without the competition. Utilization of a reference framework that describes how to calculate prices ensures aggressive pricing. A framework in place that

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[213] Ministry of Defense, *Better Defense Acquisition: Improving How We Procure and Support Defense Equipment*, 23.

[214] Ministry of Defense, *Better Defense Acquisition: Improving How We Procure and Support Defense Equipment*, 24.

enables and requires the vendors to seek improvement and efficiencies could address stronger efficiency incentives, just as with price negotiation. The MOD determined that profit should reward efficiencies. In some circumstances, the prime contractor has subcontractors and for each level of contractor, profit adds to the price, leading to a "profit on profit" situation. Currently, the complexity of allocating overhead and the process involved with doing so results in high potential for over-recovery or under-recovery. A report provided to the MOD from the contractor will detail the overhead recovered with the overhead spent to ensure the costs are justifiable. Currently the UK MOD has the responsibility to determine the validity, efficiency, or extravagance of costs. The UK MOD as an organization does not actually incur the costs, further complicating the situation. Under the new framework, this obligation will fall to the contractor.[215] Table 6 summarizes the suggested changes with respect to single-source procurement.

Table 6.   Summary of New Single-Source Contract Regulations

Area	Element	Purpose
Transparency	Open book	To provide a general back-stop to help assume value for money in single-source procurement and to check that the new framework works
	Audit rights and referral rights to an independent expert	To put a duty on suppliers to use reasonable and appropriate pricing assumptions
Pricing	Standard profit	To provide industry with an independently assessed fair return, equal to the average of UK industry
	Incentivizing efficiency	To allow additional profit when earned by performance
	Variation of Profit with risk	To allow additional profit where it is earned by

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215 Ministry of Defense, *Better Defense Acquisition: Improving How We Procure and Support Defense Equipment*, 24.

	(+/- 2.5 percent)	performance
	Protection from excessive profits and losses	To provide the MOD with protection in the event of excessive supplier profit, and suppliers protection against excessive losses
	No profit on profit	To ensure suppliers get a fair profit, and not an unwarranted profit achieved simply by clever deal structuring
	Standard list of allowable costs	To ensure both parties negotiate fair prices within a clear and coherent approach and on a level playing field
	Onus of proof	To put a duty on suppliers to demonstrate the overhead costs they claim are reasonable and appropriate for MOD to pay
Standard contract reports	Benchmark reports at start/end/amendments	To improve price negotiation (and capability planning) by building up a database of defense benchmarks from comparable projects
	Quarterly contract reports	To get timely checks on project health that can be used to support a stronger financial and performance management regime; and so that the MOD can negotiate follow-on prices with a good understanding of historic costs
	Annual contract reports	To maintain an audit trail of the cost baseline comparable to the original price
Standard overhead and supplier-level reports	Annual overhead benchmark reports	To improve overhead negotiation by building up a database of overhead benchmarks
	Overhead comparison report	To check the effectiveness of the range of overhead recovery methods we have available
	Long term overhead report	To optimize the industrial capacity we pay for with our long-term military requirements
	SME report	To support SMEs down the supply chain
Compliance Regime	Publically naming the supplier	To increase the timeliness and likelihood of adherence to the new regulations

Financial penalty	

From Ministry of Defense, Better Defense Acquisition: Improving How
We Procure and Support Defense Equipment, 32–33.

The MOD experienced other issues related to budget deficits, "absence of clear
understanding of requirements, and cost drivers; poor cost projections; and inadequate
project management."[216] Currently the MOD plans to do business with 28 percent fewer
people, a reduction required by the 2010 Strategic Defense Security Review (SDSR).[217]

By reviewing the procurement issues taking place with the UK MOD, we attempt
to understand what kind of problems one of our closest allies has within military defense
and procurement. This will help us understand the differences and similarities we both
experience within our defense departments. However, we must keep in mind that the UK
defense budget represents only 10 percent of the U.S. defense budget. In comparing the
defense budget as a percentage of gross domestic product (GDP), the United States
spends 3.5 percent of its GDP on defense and the UK spends 2.1 percent of its GDP on
defense.[218] Figures 19 and 20 show a comparison against other top military spenders
worldwide.

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[216] *Better Defense Acquisition: Improving How We Procure and Support Defense Equipment*, 9.

[217] Ibid., 9.

[218] "Military Spending Data," The World Bank, accessed June 16, 2015,
http://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS.

Figure 19.   Military Spending Top Ten Countries ($B)

Military Spending ($B)

After "Military Spending Data," The World Bank, accessed June 16, 2015, http://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS.
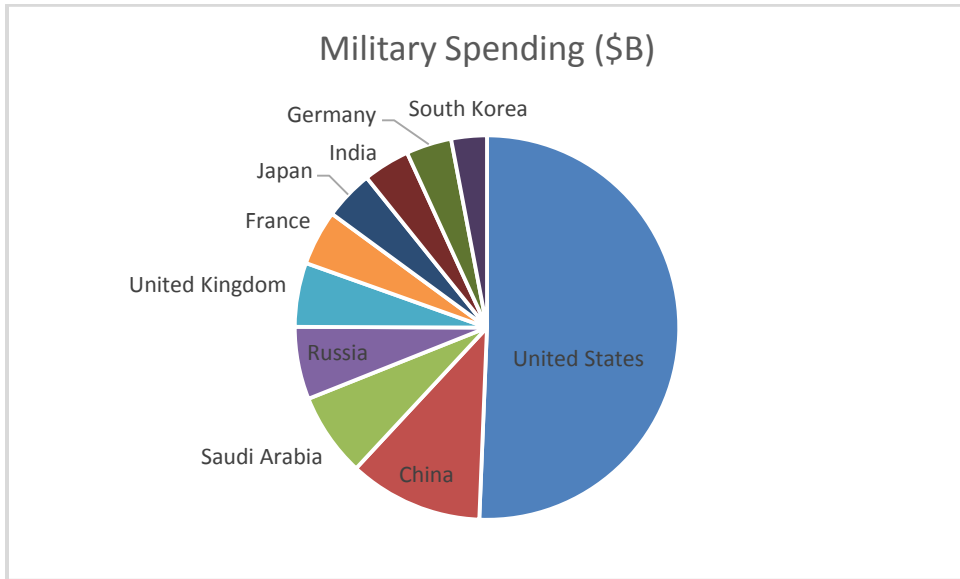
Figure 20.   Military Spending by Percentage of GDP

Military Spending by Percentage of GDP

After "Military Spending Data," The World Bank, accessed June 16, 2015, http://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS.
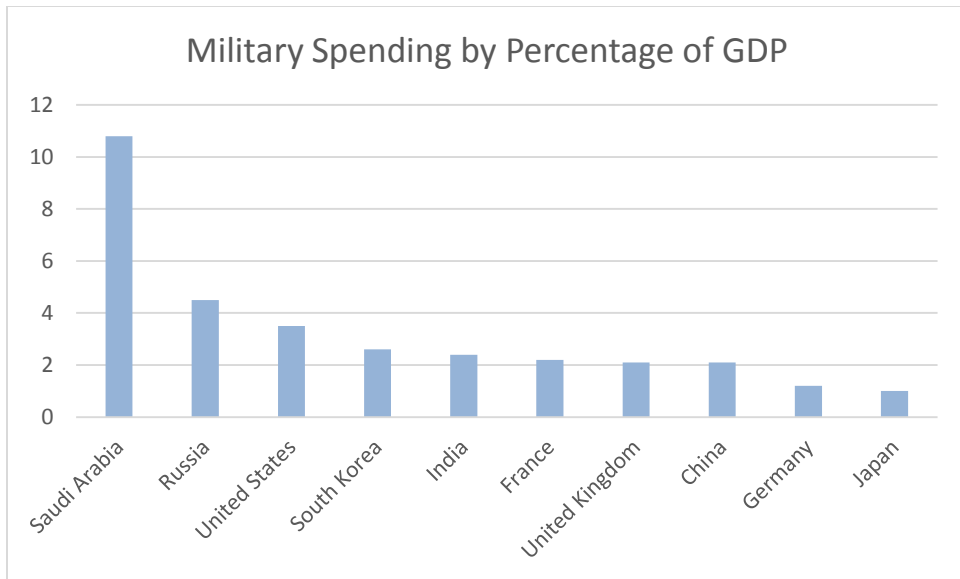
APPENDIX C. FY 2012 RFI EQUIPMENT LIST

FY12 Rapid Fielding Initiative (RFI) Equipment List

Soldier Equipment
Advanced Combat Helmet (ACH)
ACH Accessories
- Helmet Cover, Universal Camouflage Pattern (UCP)
- Eyewear Retention Strap
- Night Vision Optical Device (NOD)

Front Mounting Device
Army Combat Shirt (ACS)
Army Combat Pant (ACP)
Ballistic Spectacles Kit (*)
Mountain Combat Boots
Knee and Elbow Pads (Improved UCP) (*)
CVC/Aviation Boots, Fire Resistant (Hot Weather)
CVC/Aviation Fire Resistant Environmental Ensemble (FREE)
Extended Cold Weather Clothing System
(ECWCS) III (*)
Fuel Handler Coveralls
Glove, Flyer's
Combat Glove (*)
Winter Glove (*)
Goggles Kit (*)
Lightweight Performance Hood, FR (*)
Improved First Aid Kit (IFAK) (*)
MOLLE Hydration Bladder Kit
MOLLE Hydration Cleaning Kit
Modular Sleep System
Multi-purpose Tool
Moisture Wicking Sports Bra
Strap Cutter
Neck Armor Protective Enhancement Pad (NAPE)
Tactical Assault Panel (TAP)
MOLLE Medium Ruck
Visual/Language Translator Card (OEF)
Visual/Language Translator Card (OND)
Improved First Aid Contents Kit
Combat Gauze

Unit Equipment
M68 Close Combat Optic
M24 Small Binoculars
CQB Improved Gun Cleaning Kit
M4/M16 Improved Magazine
Initial Spares
- ACH Chin Strap
- ACH Hardware
- ACH Pads

Army Combat Uniform-Fire Resistant/IF Repair Kit
Combat Earplugs
Disposable Handcuffs
Improved Spotting Scope w/Tripod
Infrared Strobe, Small w/IR-14 Strobe 9V Battery
Infrared (IR) Strobe, Large
Laser Target Locator Module
Modular Holster (M9)
MOLLE Grenadier Accessories
MOLLE Medic Accessories
MOLLE Pistol Man Accessories
MOLLE Saw Gunner Accessories
Mono-Lock (PVS-14)
M150 Rifle Combat Optic (RCO)
Survival Axe (SPAX)
Weapon Light
Medical Visual/Language Translator Card
Military Police Visual/Language Translator Card
Tactical Communications and Protective System (TCAPS)
Improved Ghillie Suit with Accessories Kit (IGSAK)

NOTE: OCIE items (*) – (Ballistic Spec Kit, ECWCS III, Combat Gloves, Winter Gloves, Goggle Kit, Improved First Aid Kit, Knee/Elbow Pads (Improved UCP), and Lightweight Performance Hood, FR): The PM SPIE SPIERS fielding database system allows the Soldier to decline being issued items that they were issued from a prior RFI fielding event. This is part of the RFI "Lean Fielding" concept. The declination will not appear or be transferred to ISM-CIF record. This method only applies for UCP RFI items, not OCP since this uniform and its associated OCiE are in initial issue. The non-issue of RFI items will result in cost savings to the Army.

From "PEO Soldier website," FY12 Rapid Fielding Initiative (RFI) Equipment List, accessed June 16, 2015, http://www.peosoldier.army.mil/docs/fy12-rfi-list-1aug11.pdf.

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APPENDIX D. GOVERNMENT ACCOUNTABILITY OFFICE STUDY ON ACQUISITION REFORM: DOD SHOULD STREAMLINE ITS DECISION-MAKING PROCESS FOR WEAPON SYSTEMS TO REDUCE INEFFICIENCIES

After reviewing this GAO study, we found that the documentation process, the briefing of the program to obtain milestone approval, and even lower-level briefings required by staff, inundate the PM with requirements that do not support the management of the program.[219] Future budget constraints require the DOD to determine how to proceed with a more streamlined acquisition process. The GAO study stated it best, "It is not the need or value of an acquisition strategy or a technology readiness assessment that is at question. Rather, when analysis reveals the significant amount of process that has evolved around essential activities like acquisition strategies and technology readiness assessments, the question becomes whether the additional process and review is achieving the desired program results in terms of better cost and schedule outcomes."[220]

1.   Documentation

The GAO "surveyed 24 program managers that held a MS B or C decision since 2010"[221] and determined that it took them "on average over two years completing the steps necessary to document up to forty-nine information requirements for their most recent acquisition milestone."[222] The GAO determined that from the list of statutory and regulatory requirements, some documents took from six to 24 months to complete.[223] This timeline includes not only the time spent drafting the document, but the time spent in the review and approval process. The PMs surveyed also ranked the documentation that they considered high value, moderate value, and less than moderate value. Breaking

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[219] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*.

[220] Ibid., 15.

[221] Ibid., 7.

[222] Ibid., 6.

[223] Ibid., 10.

down the 49 information requirements by value, PMs ranked 24 requirements as high value, 20 as moderate value, and five as less than moderate value.[224] Determination of high value documents comes easily; they include the AS, test and evaluation master plan (TEMP), life cycle sustainment plan (LCSP), cost estimate, etc. Low-value documents consisted of the corrosion prevention control plan, Clinger-Cohen Act (CCA) Compliance, IUID Implementation Plan, etc. We have experience receiving conflicting comments during the documentation review and approval process, an issue mentioned in the GAO study.[225] Depending on the ACAT Level, the PEO approves the document, or it continues the review/approval process at HQDA. Either way, it undergoes multiple levels of review. Then, at the PdM or PM level, someone provides a comment based upon his or her own personal writing style. The document, including the incorporated comment, proceeds up to the PEO or HQDA level. At that level, another person may make a contradictory comment, requiring the PM to revise the document back to its original form. This kind of trivial issue ensures that the review and approval process continues for months, and possibly years. The GAO study supports this issue by stating, "Several program officials told us they spend extensive time and resources addressing conflicting comments/concerns expressed by functional offices at the different levels during the review process."[226] Figure 21 shows the milestone decision levels of review.

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[224] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*, 8.

[225] Ibid., 16.

[226] Ibid., 16.

Figure 21.   Milestone Levels of Review
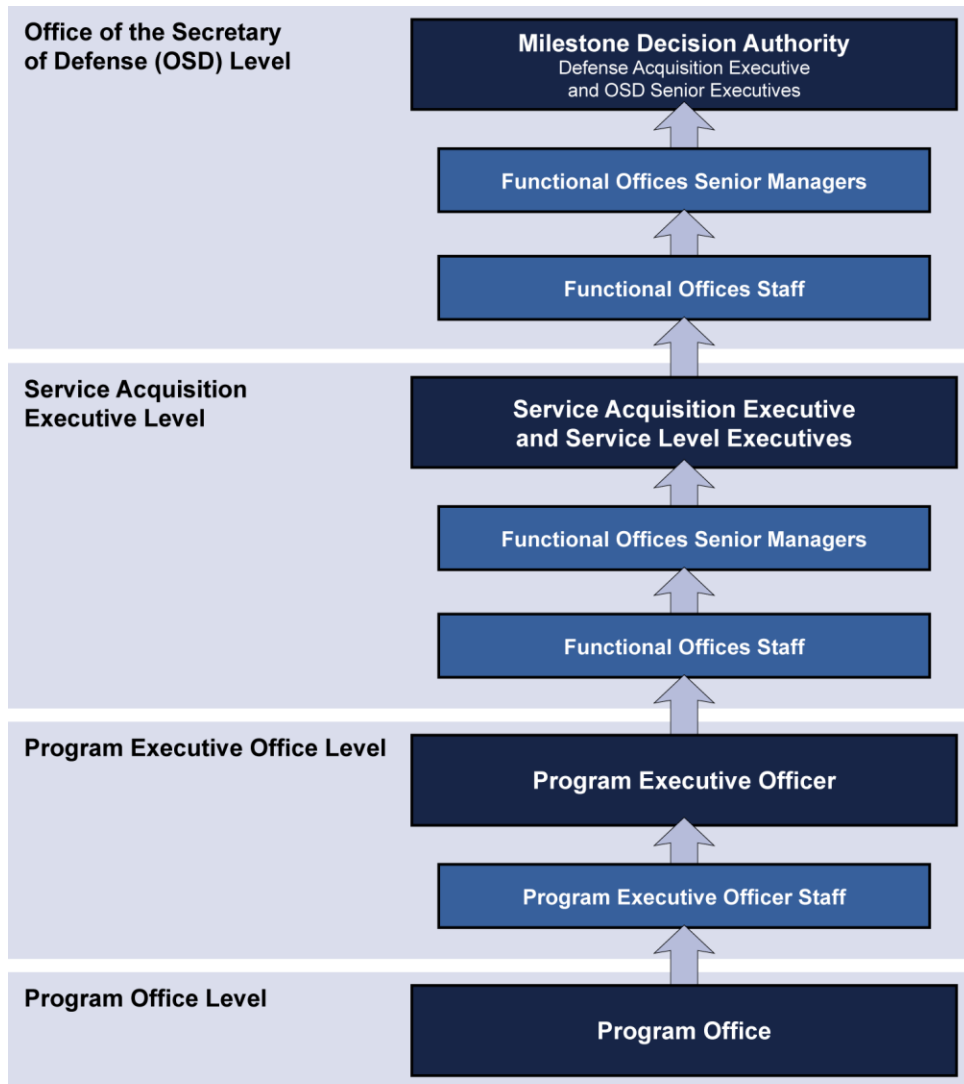
From Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*, 13.

2.   Briefings

In order to obtain a milestone decision from the MDA, the MDA requires a briefing from the PM. Depending on the MDA's personal preferences; some ACAT III programs can have a paper milestone decision and forego the briefing.

Since the GAO study focused mostly on ACAT I programs, we discussed the time it takes to brief multiple levels in order to finally obtain a milestone decision from the MDA.[227] Experiences from our team reveals that most stakeholders want a briefing on the decision or document being staffed so that they have the opportunity to provide their comments, ask questions, and ensure that the PM knows of any issues that may affect the decision when it arrives at the MDA's office. At PEO Soldier, obtaining a milestone decision from the MDA (typically ACAT III=PEO) involves pre-briefing the PdM (LTC), PM (COL) and his staff, the PEO staff, and ultimately briefing the PEO (BG). These briefs usually do not happen concurrently, because the PM wants to ensure that they resolve any issues discovered at each level before they reach the next higher level. The GAO study echoes this experience, "Program offices can spend a great deal of time and effort briefing the different officials and senior leaders in advance of the milestone decision. Data provided by nine of the programs we surveyed that recently had a milestone B decision showed that programs provided an average of 55 briefings over a period of just over a year and a half leading up to the milestone."[228]

3. Stakeholders

The number of people involved in the review and approval process of documentation depends on the ACAT level of the program, but even with the lowest ACAT level (III), the review and approval process would include the PdM staff and LTC, the PM staff and COL, the PEO staff and GO. By definition, a stakeholder has an interest in the documentation, review, and approval process. Typically, the people that review the documentation work in the subject matter area that contributes to that document in some way. For example, a life cycle sustainment plan's (LCSP) development, review, and approval should require the involvement of the logistician and PSM at every level. The level of stakeholders involved relates directly to the time it takes to get a document approved. GAO found that even with a varied amount of stakeholders providing their

[227] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*, 12–13.

[228] Ibid., 10.

input, the reviews "added only moderate or less value to most documents."[229] GAO found nine levels of review for an ACAT I program. Those nine levels contain 56 offices, but considering that they grouped the program office into one level of review, one could argue that it actually represents two levels of review.[230] PEO Soldier has four 06 level PMs, and eight 05 level PdMs below them. This may not be typical for a PEO office with only ACAT I programs, but PEO Soldier has a majority of ACAT III programs. The GAO made note of the fact that some more specialized documents make it through staffing more quickly because fewer stakeholders review and approve those documents. For example, the subject matter expert (SME) in that area may only review the TRA. The involvement of so many stakeholders in the staffing process can mean that although the senior leaders express the desire to decrease the level of information provided in each document, their staff might require additional information. This results in documents getting longer as the staffing process progresses.

4. Streamlined Acquisition

The GAO study discusses the existing process to tailor required acquisition documentation. However, based upon the data GAO retrieved by surveying PMs, the tailoring process does not reduce the staffing time. Sometimes, rather than request a waiver for a document, PMs just write it because they know that obtaining the waiver could take just as long. Based upon the GAO's study of the DOD's initial acquisition policy published in 1971, the guidance included the following quoted topics:

1. Minimal layers of authority above the program office;

2. Few demands on programs for formal reporting;

3. Minimal demands for non-recurring information and for responding to these requests informally; and
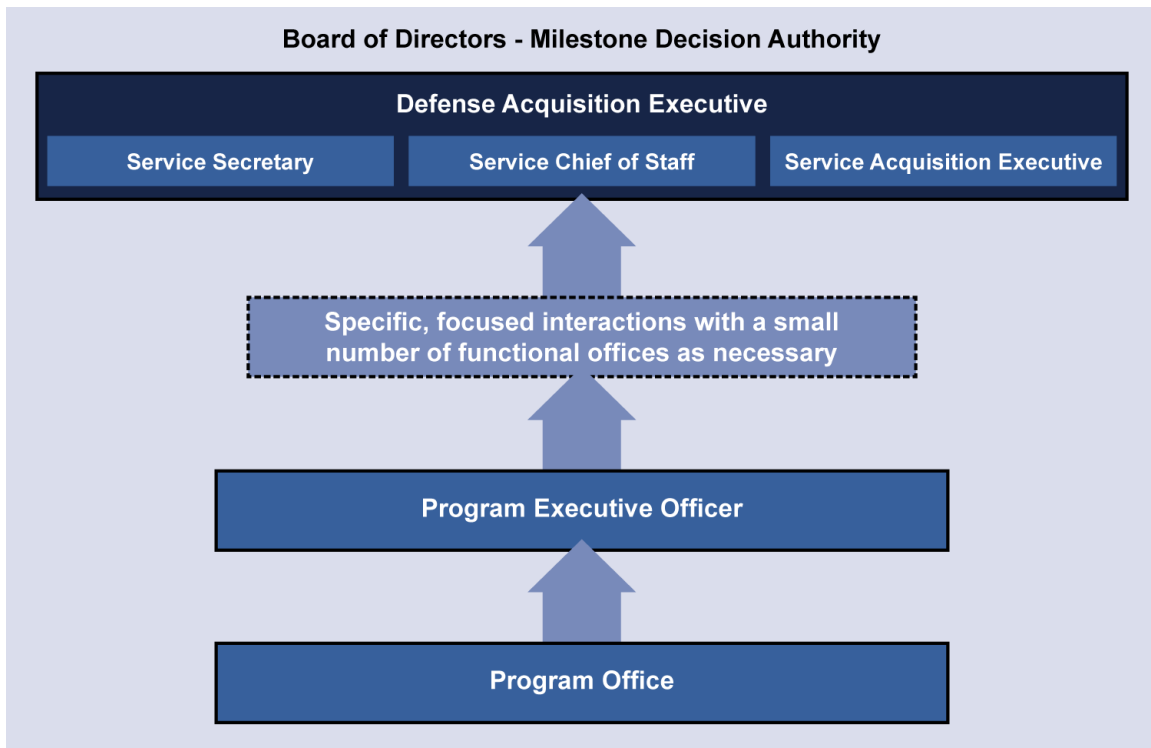
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[229] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*, 12.

[230] Ibid., 14.

4.   The development of a single, key document to support program management and milestone decision making. Over time, a large, bureaucratic process has supplanted these elements.[231]

From experience, we can see how the acquisition process ballooned into this bureaucratic process. From the PEO staff level perspective, every few months HQDA or DOD publishes a new policy memorandum. This adds to the already lengthy requirements and documents referenced during the development of a milestone package. The organizations developing these policies can resolve this problem by looking at all the current requirements and reviewing them to determine their relevance. Figure 22 shows a streamlined version of the review process.

Figure 22.   Streamlined Levels of Review (Classified Programs)

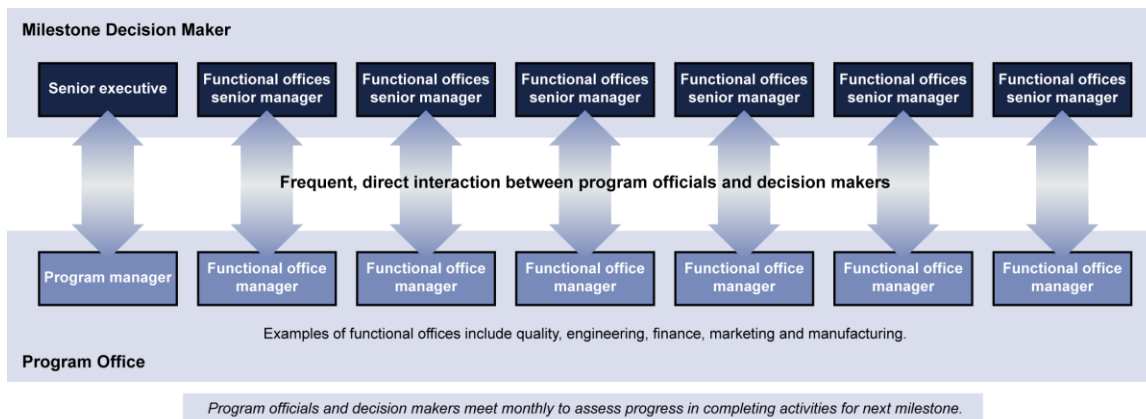Source: GAO presentation of DOD data. | GAO-15-192

From Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon*

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[231] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*, 21.

We can also streamline processes by mirroring the acquisition process followed by commercial companies. The GAO study found that senior staff develop and approve a few key programmatic documents, but functional managers in charge of the program office prepare other programmatic documents.[232] In order to enable this approach, we must ensure regular interactions between the people that develop the documentation and the people that are approving the documentation and those who approve it. This allows the decision makers to remain aware of the program's progress toward the milestone, so when the time comes to get approval for the milestone, the decision maker just needs to make the decision. Figure 23 illustrates this approach, making it clear that a flat organizational structure supports this process.

Figure 23.   Interactions Between Functional Staff and Decision Makers

From Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*, 27.

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[232] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*, 31.

One of the companies evaluated in the GAO study changed its working environment from offices to an open area where everyone can interact with each other.[233] We must question the ability to implement the commercial model within the government however, because in the commercial environment, the company will prosper and profit by completing quality milestone decisions with efficiency (time is money), thereby incentivizing an improved process. The government, however, does not have that same incentive. The bureaucracy within the government began by attempting to ensure that we spend the taxpayers' dollars wisely, but the levels of review have the opposite effect. The GAO study reflects this statement, "Commercial product development cycle times are relatively short (less than five years), making it easier to minimize management turnover and to maintain accountability. DOD's acquisitions occur in a different environment where cycle times are long (10 to 15 years), management turnover is frequent, accountability is elusive, and cost and schedules are not constrained by market forces. Seen in this light, DOD must have an oversight process that substitutes discipline for commercial market incentives. Several industry officials stated that companies often add oversight levels or reviews as a first reaction after failures or problems occur. However, the officials further stated that this does not solve the root problems and often makes the process less efficient."[234]

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[233] Government Accountability Office, *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*, 27.

[234] Ibid., 28.

APPENDIX E. DOD INSTRUCTION 5000.02: ENCLOSURE 13. RAPID FIELDING OF CAPABILITIES

The DOD published a revised version of its 5000.02 on 7 January 2015, with an added enclosure that addresses the "Rapid Fielding of Capabilities." This enclosure addresses a growing concern about the slowness of the current acquisition process and its inability to accommodate the agility and efficiency required to get state of the art equipment to soldiers in a reasonable timeframe. This enclosure addresses "programs that provide capabilities to fulfill urgent operational needs and other quick reaction capabilities that can be fielded in less than 2 years and are below the cost thresholds of Acquisition Category (ACAT) I and IA programs."[235] The enclosure applies to UON; a warfighter SIG identified urgent issue, and a secretary of defense rapid acquisition authority (RAA) determination.[236] Table 7 illustrates these program types.

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[235] Department of Defense, *Operation of the Defense Acquisition System*, 143.

[236] Ibid., 143–144.

Table 7.   Rapid Acquisition Program Types

Joint Urgent/Emergent Operational Needs	DoD Component Specific UON	Warfighter SIG Identified Urgent Issue	Secretary of Defense RAA Determination
• Urgent need identified by Combatant Commander, Chairman Joint Chiefs of Staff (CJCS), or Vice Chairman Joint Chiefs of Staff (VCJCS) involved in contingency operation (JUON) • Emergent need identified by a Combatant Commander, CJCS, VCJCS, for an anticipated or pending contingency operation • Approval by the Joint Staff in accordance with the Joint Capability Integration Development System (JCIDS)	• Approval authorities, including their validation, program execution, and the designation of MDA, will be at the DoD Component level	• Critical warfighter issue identified by the Co-Chairs of the SIG • Co-Chairs approve critical warfighter statement and provide instructions to DoD components on execution and management	• Secretary of Defense signed determination of deficiency • RAA only considered when, within certain limitations, a waiver of a law, policy, directive, or regulation will greatly accelerate the delivery of effective capability to the warfighter

After Department of Defense, Operation of the Defense Acquisition System, 143–144.

In order for the acquisition community to use this enclosure efficiently and effectively, we must understand certain procedures and assumptions:

- PM's should utilize tailoring and streamlining, and receive support through and up to the approval authority (MDA)

- Utilize sequential processes to the greatest extent possible

- Encourage "paper" milestones rather than a formal milestone briefing

- Abbreviate the development part of the acquisition process, and approve production at the same time as development

- Ensure that support organizations (financial, contracting, etc.) understand the rapid nature of the program and can ensure accelerated action

- Fluid funding availability to rapid acquisition programs. We cannot use reprogramming restrictions required for typical programs in this case

- If PM cannot field capability within 2 years, give consideration to satisfying the requirement with an immediate partial solution immediately while working on the full solution[237]

This enclosure outlines the activities that would take place during the two-year process of getting the capability to the warfighter. The activities break out into pre-development, development, production and deployment (P&D), and O&S.[238]

We must understand, as stated in the DOD 5000.02:

> The activities detailed in this enclosure are not separate from or in addition to activities performed as part of the acquisition system but are a highly tailored version of those activities and are intended to expedite the fielding of capability by tailoring the documentation and reviews normally required as part of the deliberate acquisition process.[239]

The pre-development phase determines a course of action and develops an approach to the acquisition effort, as described in the *DOD Instruction*. During this part of the process, CAE receives the UON or RAA, and designates a PM and MDA for this effort. The PM must complete several activities during this phase: evaluating the capability and considering non-material options; analyzing courses of action; considering existing domestic/foreign capability; assessing acquisition and operational risk of potential solutions; briefing the MDA to obtain a decision, and drafting an ADM documenting that decision. As a part of this tailorable process, the PM will develop an abbreviated AS and APB to use as the baseline strategy for program decisions and activities.[240]

According to the *DOD Instruction*, in the development milestone, the MDA will review the program documentation to determine the feasibility of developing and fielding the system within two years, that the system utilizes technology on the market and proven, and assure procurement of the system under a fixed-price contract. At this point, the MDA will approve initial production quantities, the AS and the APB, and conduct an

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[237] Department of Defense, *Operation of the Defense Acquisition System*, 144.

[238] Ibid., 145.

[239] Ibid., 145.

[240] Ibid., 145–147.

RAA determination to decide if the systems will require accelerated fielding. Development of the testing plan begins in this phase, and does not require a complete TEMP due to the rapid nature of the program and the limited amount of development effort required. The MDA will approve waivers to regulations and statutes and can authorize the release of the RFP. During the Development phase, the PM evaluates the system against standards for performance, safety, suitability, and survivability. However, if areas in the system do not meet the requirement, movement into the following milestone can continue regardless. The user and the MDA will determine areas that require addressing prior to the production and deployment milestone.[241]

In the P&D milestone, the *DOD Instruction* adds that the PM will present the results of the development milestone and provide plans to the MDA regarding sustainment of the system. The MDA determines the sufficiency of the system evaluation and if production will begin. The AS and APB receive updates during this phase as well. After the completion of production and fielding of the systems to the warfighter, the system will enter O&S.[242]

In the O&S milestone, as noted in the *DOD Instruction*, using the sustainment plan developed and approved in the P&D phase, the support of the system begins. At this point, since the warfighter has had the system for some time, the PM may propose an improvement that requires immediate action. The test organization in the field will initiate a post-deployment assessment, if possible. If not, feedback from the Operational Test Agency (OTA) may suffice. No later than one year after the system enters O&S, an independent official will conduct the disposition analysis.[243] The person appointed by the DOD component to determine disposition recommends one of the three quoted options:

1. Termination: Demilitarization or Disposal

2. Sustainment for Current Contingency

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[241] Department of Defense, *Operation of the Defense Acquisition System*, 147–149.

[242] Ibid., 149–150.

[243] Ibid., 150–151.

3.   Transition to Program of Record[244]

Higher headquarters reviews and records the disposition recommendation in a disposition determination. Table 8 provides details on the requirements specific to the rapid acquisition process.

Table 8.   Information Requirements Unique to the Urgent Needs Rapid Acquisition Process

Information Requirement	Rapid Acquisition Decision Events		Source
	Development	Production	
Statutory Requirements			
Assessment Approach	●	●	10 USC 2366 Ref g 10 USC 2399 Ref g
Only required for urgent need programs.			
Course of Action Analysis	●		Subtitle III, Title 40, USC Ref p
Replaces and serves as the AOA. Approved by the MDA. Used for JUONs, JEONs, critical warfighter issues, and RAA determinations.			
Rapid Acquisition Authority (RAA) Recommendation	●		Sec 806 PL 107–314 Ref i
Part of the Acquisition Strategy. MDA approves request for RAA at Development milestone.			
Regulatory Requirement			
Disposition Authority's Report to the DOD Component Head			Para 4e(5) of DOD 5000.02, Enclosure 13
Due within one year of entering O&S phase. Disposition official provides recommendation to DOD Component Head, who will then determine and document decision.			

From Department of Defense, Operation of the Defense Acquisition System, 152.

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[244] Department of Defense, *Operation of the Defense Acquisition System*, 151.

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APPENDIX F. SELECTED ACQUISITION REPORT DATA

According to the *Defense Acquisition Guidebook*, the Secretary of Defense, submits "a SAR to Congress for all Major Defense Acquisition Programs (MDAPs)."[245] SARs provide current estimates of cost, schedule, and performance.[246]

PMs submit SARs according to the quoted stipulations below:

- The current estimate exceeds the Program Acquisition Unit Cost (PAUC) objective or the Average Procurement Unit Cost (APUC) objective of the currently approved Acquisition Program Baseline (APB) in base-year dollars by 15 percent or more

- The current estimate exceeds the PAUC or APUC objective of the original APB in base-year dollars by 30 percent or more

- The current estimate includes a 6-month, or greater, delay for any schedule parameter that occurred since the current estimate reported in the previous SAR

- Milestone B or Milestone C approval occurs within the reportable quarter[247]

Table 9 demonstrates the quantity and type of breaches over the past five years.

Table 9. Historical 5-Year Overall View of SARs Submitted

Year	Number of Programs	Nunn-McCurdy Unit Cost Breaches	Annual Overall Performance
2010	95 programs	3 programs with critical breaches 4 programs with significant breaches 21 other Significant Program Cost Changes	"For the December 2010 reporting period, there is a net cost increase of $63,982.3 million, or +4.0 percent for the 95 programs covered relative to the same programs in previous SARs."[248]
2011	83	3 programs with	"For the December 2011 reporting

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[245] Defense Acquisition University, "Chapter 10-Decisions, Assessments, and Periodic Reporting," 44.

[246] Ibid., 45.

[247] Ibid., 45.

[248] "Selected Acquisition Report Summary Tables," USD AT&L, last modified December 31, 2010, 2.

	programs	critical breaches 0 programs with significant breaches 18 other significant program cost changes	period, there is a net cost decrease of $8,727.1 million or -0.5 percent for the 83 programs covered relative to the same programs in previous SARs. This cost decrease is due primarily to a net decrease in planned quantities to be purchased (-$16,171.6 million) along with associated support requirements (-$7,065.6 million). There are also net decreases in program cost estimates (-$9,132.4 million) and engineering changes to hardware/software (-$3,717.5 million). These decreases were partially offset by the application of higher escalation rates (+$17,651.4 million) and a net stretch-out of development and procurement schedules (+$9,716.3 million)."[249]
2012	78 programs	2 programs with critical breaches 0 programs with Significant Breaches 19 other significant program cost changes	"For the December 2012 reporting period, there is a net cost increase of $39,617.7 million or +2.44 percent for the 78 programs that have reported previously in SARs. This cost increase is due primarily to the application of higher escalation rates (+$21,816.4 million), a net increase in planned quantities to be purchased (+$21,615.6 million), and a net stretch-out of development and procurement schedules (+$436.3 million). These increases were partially offset by net decreases in program cost estimates (-$2,561.4 million), engineering changes to hardware/ software (-$29.9 million) and reductions in associated support requirements (-$1,659.3 million)."[250]
2013	77 programs	2 programs with critical breaches 2 programs with	"For the December 2013 reporting period, there is a net cost decrease of $4,379.7 million or -0.3 percent for the

[249] "Selected Acquisition Report Summary Tables," USD AT&L, last modified December 31, 2011, 2.

[250] "Selected Acquisition Report Summary Tables," USD AT&L, last modified December 31, 2012, 2.

		significant breaches 15 other significant program cost changes	77 programs that have reported in previous SARs. This cost decrease is due primarily to a net reduction in planned quantities to be purchased (-$14,885.5 million), the application of lower escalation rates (-$3,631.8 million), and reductions in associated support requirements (-$2,522.6 million). These decreases were partially offset by a net stretch-out of development and procurement schedules (+$6,814.8 million), a net increase in program cost estimates (+$5,464.2 million), and engineering changes to hardware/software (+$4,381.2 million)."[251]
2014	79 programs	1 programs with critical breaches 1 programs with significant breaches 15 other significant program cost changes	"For the December 2014 reporting period, there is a net cost decrease of $9,118.9 million or -0.6 percent for the 79 programs that have reported in previous SARs. This cost decrease is due primarily to the application of lower escalation rates (-$10,795.2 million) and reductions in support requirements (-$9,000.5 million). These decreases were partially offset by a net increase in the cost of planned purchase quantities (+$2,487.2), a net stretch-out of development and procurement schedules (+$2,383.7 million), engineering changes to hardware/software (+$5,432.9 million), a net increase in program cost estimates (+$158.5 million), and an increase in other costs due to prior year impacts to the LPD 17 San Antonio Class Amphibious Transport Dock (+214.5 million)."[252]

After "Selected Acquisition Report Summary Tables," USD AT&L, 2010–2014, accessed June 12, 2015.

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[251] "Selected Acquisition Report Summary Tables," USD AT&L, last modified December 31, 2013, 2.

[252] "Selected Acquisition Report Summary Tables," USD AT&L, last modified December 31, 2014, 2.

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LIST OF REFERENCES

Army. "Rapid Fielding Initiative." Last modified 2008.
    http://www.army.mil/aps/08/information_papers/prepare/Rapid_Fielding_Initiativ
    e.html.

Army Technology. "RG33 MRAP." Accessed July 4, 2015. http://www.army-
    technology.com/projects/rg33-mrap/rg33-mrap1.html.

ASA (AL&T). "Implementation of Economic Useful Life." (Memorandum) Washington,
    DC: ASA (AL&T), 2012.

Axe, David. "Military Airships: Hot Air of Soaring Promise." *Breaking Defense*, May 1,
    2012. http://breakingdefense.com/2012/05/military-airships-hot-air-or-soaring-
    promise/.

Beaver, William. "ManTech Awarded $61M for Contractor Logistics Sustainment
    Support Services," *Danger Zone Jobs* (blog), December 11, 2013,
    http://dangerzonejobs.com/blog/overseas-contracts/mantech-overseas-contracts-
    2005-2013/.

Boeing. "Boeing Reaches 250,000-Kit Milestone for JDAM Weapon Program." August
    20, 2013. http://boeing.mediaroom.com/Boeing-Reaches-250-000-Kit-Milestone-
    for-JDAM-Weapon-Program.

———. "Boeing Winged Joint Direct Attack Munition Completes 1st Round of Tests."
    Published August 30, 2012. http://boeing.mediaroom.com/2012-08-30-Boeing-
    Winged-Joint-Direct-Attack-Munition-Completes-1st-Round-of-Tests.

———. "Laser Joint Direct Attack Munition." Last modified March 2013.
    http://www.boeing.com/assets/pdf/defense-
    space/missiles/jdam/docs/laser_jdam_overview.pdf.

Business Dictionary Online, s.v. "Escalation Rate," accessed August 7, 2015,
    http://www.businessdictionary.com/definition/escalation-rate.html.

Defense Acquisition Portal. "Milestone Document Identification and Integrated Defense
    Acquisition Framework." Accessed June 12, 2015.
    https://dap.dau.mil/Pages/Default.aspx.

Defense Acquisition University. "Chapter 10-Decisions, Assessments, and Periodic
    Reporting." In *Defense Acquisition Guidebook*, 1–93. Fort Belvoir, VA: DAU
    Press, 2013. https://acc.dau.mil/docs/dag_pdf/dag_ch10.pdf.

Defense Industry Daily staff. "JLENS: Coordinating Cruise Missile Defense." *Defense Industry Daily*, August 21, 2015. http://www.defenseindustrydaily.com/jlens-coordinating-cruise-missile-defense-and-more-02921/.

———. "JLENS: Coordinating Cruise Missile Defense." *Defense Industry Daily*, October 14, 2014. http://www.defenseindustrydaily.com/jlens-coordinating-cruise-missile-defense-and-more-02921/.

———. "Navistar's MaxxPro: 1st Place in MRAP Orders." *Defense Industry Daily*, October 7, 2014. http://www.defenseindustrydaily.com/more-mraps-1200-maxxpro-mpvs-from-navistar-03344/.

Department of the Army. *Force Development: Warfighting Capabilities Determination*. Army Regulation 71–9. Washington, DC: Headquarters Department of the Army, 2009.

Department of Defense. *Operation of the Defense Acquisition System*. DOD Instruction 5000.02. Washington, DC: Department of Defense, January 7, 2015.

———. *Rapid Fulfillment of Combatant Commander Urgent Operational Needs*. DOD Directive 5000.71. Washington, DC: Department of Defense, 2012.

Deputy Secretary of Defense. "Meeting Immediate Warfighter Needs." Memorandum. Washington, DC: Deputy Secretary of Defense, 2004.

dgMarket Tenders Worldwide. "Joint Direct Attack Munition (JDAM) Contract Award." November 5, 2014. http://www.dgmarket.com/tenders/np-notice.do?noticeId=11877711.

Director Operational Test & Evaluation. *Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) FY2013 Annual Report*. Washington, DC: Department of Defense, 2013. http://www.dote.osd.mil/pub/reports/FY2013/pdf/army/2013jlens.pdf.

Doll, Shelley. "Seven Steps for Avoiding Scope Creep." *TechRepublic*, March 13, 2001. http://www.techrepublic.com/article/seven-steps-for-avoiding-scope-creep/.

Eckstein, Megan. "Thornberry Announces Acquisition Reform Legislation." *USNI News*, March 23, 2015. http://news.usni.org/2015/03/23/thornberry-announces-acquisition-reform-legislation.

Finley, James. "2008 David Packard Excellence in Acquisition." Presented at the awards ceremony, Fort Belvoir, Virginia, November 5, 2008.

FY12 Rapid Fielding Initiative (RFI) Equipment List. "PEO Soldier website." Accessed June 16, 2015. http://www.peosoldier.army.mil/docs/fy12-rfi-list-1aug11.pdf.

Glabe, Scott., Jennifer Piltsch, and Kathy Brown. "Senator McCain Renews Focus on Ending Cost-Plus Contracts." *Inside Government Contracts*, January 9, 2015. http://www.insidegovernmentcontracts.com/2015/01/senator-mccain-renews-focus-on-ending-cost-plus-contracts/.

Global Security. "Establishing a Lessons Learned Program." Accessed August 29, 2015. http://www.globalsecurity.org/military/library/report/call/call_11-33-appd.htm.

———. "Joint Direct Attack Munition (JDAM)." Last modified July 7, 2011. http://www.globalsecurity.org/military/systems/munitions/jdam.htm.

———. "Joint Improvised Explosive Device Defeat Organization (JIEDDO)." Last modified February 4, 2012. http://www.globalsecurity.org/military/agency/dod/jieddo.htm.

———. "Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS)." Last modified January 26, 2012. http://www.globalsecurity.org/space/systems/jlens-program.htm.

Government Accountability Office. *Acquisition Reform: DOD Should Streamline its Decision-Making Process for Weapon Systems to Reduce Inefficiencies* (GAO-15-192). Washington, DC: U.S. Government Accountability Office, 2015.

Graham, Jefferson. "Behind the Scenes at Apple's Test Labs." *USA Today*, July 16, 2010. http://content.usatoday.com/communities/technologylive/post/2010/07/apple-opens-top-secret-doors-to-the-press/1#.VdcjYkb2WO0.

Greenwalt, Bill. "Build Fast, Effective Acquisition: Avoid the System We've Got." *Breaking Defense*, April 25, 2014. http://breakingdefense.com/2014/04/build-fast-effective-acquisition-avoid-the-system-weve-got/.

Hedelt, Carden. "MRAP Joint Program Office Takes Home Inaugural Vehicle Award." *Acquisition & Logistics Excellence* (2012). http://www.dau.mil/pubscats/ATL%20Docs/May_Jun_2012/Excellence.pdf.

Heilemann, John. "Congress's Watch Dog: The General Accounting Office." *Washington Monthly*, November 1989. http://www.washingtonmonthly.com/features/2001/8911.heilemann.html.

House, Thomas B., and Raymond E Strunk. "Army Soldier Enhancement Program." *Army Sustainment* 43 (January-February 2011). http://www.alu.army.mil/alog/issues/JanFeb11/soldier_enhancement.html.

Housel, Thomas, and Arthur Bell. *Measuring and Managing Knowledge*. Boston, MA: McGraw Hill Irwin, 2001.

Housel, Thomas, and Valery Kanevsky. *Measuring the Value Added of Management: A Knowledge Value Added Approach*. (NPS-AM-06-056) Monterey, CA: Naval Postgraduate School, 2006.

Komoroski, Christine L., Thomas Housel, Sandra Hom, and Johnathan Mun. *A Methodology for Improving the Shipyard Planning Process: Using KVA Analysis, Risk Simulation and Strategic Real Options*. (NPS-AM-06-038) Monterey, CA: Naval Postgraduate School, 2006.

Lane, Peter. "Steele for Bodies: Ammunition Readiness during the Korean War." Thesis, Command and General Staff College, 2003.

Levin, Carl, and John McCain. *Defense Acquisition Reform: Where Do We Go From Here? A Compendium of Views by Leading Experts*. Washington, DC: Senate Permanent Subcommittee on Investigations, 2014.

Lorell, Mark A., Julia F. Lowell, Michael Kennedy, and Hugh P. Levaux. *Cheaper, Faster, Better? Commercial Approaches to Weapons Acquisition*. Santa Monica, CA: RAND, 2000.

Mahnken, Kevin. "To Understand the Budget Debate, You Need to Understand the Sequester. Here's a Quick Primer." *New Republic*, September 29, 2013. http://www.newrepublic.com/article/114892/what-sequester-2013-sequestration-guide.

Management Roundtable, The. *Apple Rethinks Core Process: Improves Cycle Time*. Waltham, MA: Knowledge Roundtable, 2004.

Marmion, Dave S. "Korean War Outbreak: A Study in Unpreparedness." *Military History Online*, August 22, 2010. http://www.militaryhistoryonline.com/korea/articles/studyinunpreparedness.aspx.

Middleton, Michael W. "Assessing the Value of the Joint Rapid Acquisition Cell." Thesis, Naval Postgraduate School, 2006.

Military.com. "Joint Direct Attack Munition." Accessed July 10, 2015. www.military.com/equipment/joint-direct-attack-munition-jdam.

Miller, Thomas H. "Does MRAP Provide a Model for Acquisition Reform?" *Defense AT&L* (July-August 2010). http://www.dau.mil/pubscats/ATL%20Docs/Jul-Aug10/Miller_jul-aug10.pdf.

Ministry of Defense. *Acquisition System Operating Model*. Version 3.0. London, UK: Ministry of Defense, 2015.

———. *Better Defense Acquisition: Improving How We Procure and Support Defense Equipment* (CM 8626). London, UK: Ministry of Defense, 2013.

National World War II Museum. "December 7, 1941: A Day that Will Live in Infamy."
        Accessed August 6, 2015.
        http://www.nationalww2museum.org/learn/education/for-students/ww2-
        history/america-goes-to-war.html.

Osborn, Kris. "Services Mark MRAP Milestone, Celebrate Historic Accomplishment."
        Army News Service, October 5, 2012.
        http://www.army.mil/article/88697/Services_mark_MRAP_milestone__celebrate
        _historic_accomplishment/.

Oshkosh Defense. "Oshkosh Defense, U.S. Military Complete 3,500 M-ATV Underbody
        Kit Installations In-Theater in Seven Months." February 22, 2012.
        http://oshkoshdefense.com/news/oshkosh-defense-us-military-complete-3500-m-
        atv-underbody-kit-installations-in-theater-in-seven-months/.

———. "US Army Contracts Oshkosh Defense to Reset M-ATVs to Achieve Capability
        and Readiness Requirements." February 5, 2015.
        http://oshkoshdefense.com/news/u-s-army-contracts-oshkosh-defense-reset-m-
        atvs-achieve-capability-readiness-requirements/.

Pierce, Ryann. "Apple's Prototyping Process, Presented at WWSC 2014." Presented at
        WWDC 2014, San Francisco, CA, June 12, 2014.
        http://seesparkbox.com/foundry/apples_prototyping_process_from_wwdc_2014.

Porter, Henry. "What Budget for Defense? First Let's Work Our Britain's Place in the
        World." *Guardian*, February 2, 2013.
        http://www.theguardian.com/commentisfree/2013/feb/03/british-defence-
        spending-needs-addressing.

Program Executive Office Combat Support & Combat Service Support. "Army Project
        Office Mine Resistant Ambush Protected Vehicles." Last modified July 8, 2014.
        http://www.peocscss.army.mil/PMMRAP.html.

Raytheon. "Taking the Keys: U.S. Army Takes Control of JLENS Airships during Final
        'Test Drive' in Utah Desert." Last modified March 2, 2015.
        http://www.raytheon.com/news/feature/jlenseut.html.

Rios, Cesar G. "Return on Investment Analysis of Information Warfare Systems." Thesis,
        Naval Postgraduate School, 2005.

Rogers, Alex. "The MRAP: Brilliant Buy, or Billions Wasted." *Time*, October 2, 2012.
        http://nation.time.com/2012/10/02/the-mrap-brilliant-buy-or-billions-wasted/.

Schwartz, Moshe. *Defense Acquisitions: How DOD Acquires Weapon Systems and
        Recent Efforts to Reform the Process* (CRS Report No. RL34026). Washington,
        DC: Congressional Research Service, 2010. https://acc.dau.mil/adl/en-
        US/417841/file/55302/Defense%20Acquisitions-

How%20DoD%20acquires%20Weapon%20Systems%20and%20Recent%20Efforts%20to%20Reform%20the%20Process.pdf.

Science Applications International Corporation. "Fiscal Year 2008 Annual Report." 2008. http://media.corporate-ir.net/media_files/IROL/19/193857/ar/Annual-Report2008.pdf.

Starr, Barbara, and Mike Mount. "Pentagon: Furloughs for Civilian Workers if Forced Cuts Go Into Effect." *CNN*, February 21, 2013. http://www.cnn.com/2013/02/20/politics/defense-department-furloughs/.

Stegon, David. "DOD Bids Adieu to MRAP Production." *FedScoop*, October 1, 2012. http://fedscoop.com/dod-bids-adieu-to-mrap-production.

Szondy, David. "Boeing and RAAF Triple Bomb Range with New JDAM-ER Kit." *GizMag*, February 26, 2015. http://www.gizmag.com/jdam-er-test-boeing-raaf/36250/.

The Official Navy website. "Integrated Defense Acquisition, Technology, & Logistics Life Cycle Management Framework." Accessed August 21, 2015. http://www.public.navy.mil/spawar/PEOC4I/ASPG/Documents/APSG_Manuals/files/Integrated_Def_Acq_Management_Frmwk.pdf.

The Official website of the JIDA. "About JIDA." Accessed July 31, 2015. https://www.jieddo.mil/index.aspx.

Under Secretary of Defense. *Fulfillment of Urgent Operational Needs*. Washington, DC: Defense Science Board, 2009.

U.S. Air Force. "Joint Direct Attack Munition GBU-31/32/38." Last modified June 18, 2003. http://www.af.mil/AboutUs/FactSheets/Display/tabid/224/article/104572/joint-direct-attack-munition-gbu-313238.aspx.

U.S. Army. "PEO Missiles and Space." Last modified August 2015. http://www.msl.army.mil/.

———. "Rapid Equipping Force." Last modified August 3, 2015. http://www.ref.army.mil/aboutus.html.

USD AT&L. *Performance of the Defense Acquisition System* (2014 Annual Report). Washington, DC: USD AT&L, 2014.

———. "Selected Acquisition Report Summary Tables." USD AT&L. 2010–2014. Accessed June 12, 2015. http://www.acq.osd.mil/ara/am/sar/.

———. "Selected Acquisition Report Summary Tables." USD AT&L. Last modified December 31, 2009. http://www.acq.osd.mil/ara/sar/SST-2009-12-31.pdf.

———. "Selected Acquisition Report Summary Tables." Last modified December 31, 2010. http://www.acq.osd.mil/ara/sar/SST-2010-12.pdf.

———. "Selected Acquisition Report Summary Tables." USD AT&L. Last modified December 31, 2011. http://www.acq.osd.mil/ara/sar/SST-2011-12.pdf.

———. "Selected Acquisition Report Summary Tables." USD AT&L. Last modified December 31, 2012. http://www.acq.osd.mil/ara/sar/SST-2012-12.pdf.

———. "Selected Acquisition Report Summary Tables." USD AT&L. Last modified December 31, 2013. http://www.acq.osd.mil/ara/sar/SST-2013-12.pdf.

———. "Selected Acquisition Report Summary Tables." USD AT&L. Last modified December 31, 2014. http://www.acq.osd.mil/ara/sar/SST-2014-12.pdf.

Whaley, Eileen P., and Dana Stewart. "Path from Urgent Operational Need to Program of Record." *Defense Acquisition Research Journal* 21, No. 2 (April 2014): 525–564.

World Bank, The. "Military Spending Data." Accessed June 16, 2015. http://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS.

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