



PROCEEDINGS OF THE ELEVENTH ANNUAL ACQUISITION RESEARCH SYMPOSIUM

THURSDAY SESSIONS VOLUME II

Critical Choices in a Time of Austerity

Lou Kratz, Lockheed Martin
Bradd Buckingham, Lockheed Martin
Bernie Kelleher, Lockheed Martin

Published April 30, 2014

Approved for public release; distribution is unlimited.

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



ACQUISITION RESEARCH PROGRAM
GRADUATE SCHOOL OF BUSINESS & PUBLIC POLICY
NAVAL POSTGRADUATE SCHOOL

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 30 APR 2014		2. REPORT TYPE		3. DATES COVERED 00-00-2014 to 00-00-2014	
4. TITLE AND SUBTITLE Critical Choices in a Time of Austerity				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Lockheed Martin Corp,Bethesda,MD				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT After more than a decade of conflict, the United States is drawing down defense spending. The Defense Department must cope with declining resources at a time when it also faces persistent global threats and is under pressure to modernize aging systems to deter future competitors. Faced with declining defense budgets, aging weapon systems, and growing personnel costs the Department of Defense (DoD) must avoid austerity measures that result in a ???hollow force??? and focus on how to maintain and enhance key capabilities at reduced cost. Many U.S. allies faced similar challenges more than a decade ago and opted to transform their military structure to concentrate on their core competency of deterrence and national defense. Their efforts included migration of uniformed personnel to combat/combat support functions, privatization of infrastructure, and the use of public/private partnerships to buy outcomes, versus equipment and services. By highlighting numerous successful precedents this paper explores how industry and government as partners can support enhanced operational agility and affordability.					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 22	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

The research presented in this report was supported by the Acquisition Research Program of the Graduate School of Business & Public Policy at the Naval Postgraduate School.

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



ACQUISITION RESEARCH PROGRAM
GRADUATE SCHOOL OF BUSINESS & PUBLIC POLICY
NAVAL POSTGRADUATE SCHOOL

Panel 12. Assessing the Role of Public-Private Partnerships in DoD Logistics and Acquisition

Thursday, May 15, 2014	
9:30 a.m. – 11:00 a.m.	Chair: Lorna B. Estep, Deputy Director of Logistics, Air Force Materiel Command <i>Critical Choices in a Time of Austerity</i> Lou Kratz, Lockheed Martin Bradd Buckingham, Lockheed Martin Bernie Kelleher, Lockheed Martin <i>Public Private Business Models for Defence Acquisition</i> Thomas Ekström, Swedish Defence Research Agency <i>DoD Lead System Integrator (LSI) Transformation—Creating a Model Based Acquisition Framework (MBAF)</i> Ron Carlson, Naval Postgraduate School Paul Montgomery, Naval Postgraduate School



Critical Choices in a Time of Austerity

Lou Kratz—vice president and managing director for logistics and sustainment, Lockheed Martin Corporation. Kratz is responsible for coordinating Lockheed Martin's logistics and weapon system sustainment efforts. Kratz leads Lockheed Martin's Automatic Identification Technology implementation, including RFID and UID. After successfully completing eight pilot projects, Kratz is now guiding Lockheed Martin's enterprise implementation of RFID. He also guides Lockheed Martin's logistics strategic planning, performance-based logistics efforts, logistics technology development, logistics human capital development, and cross-corporate logistics business initiatives. Previously, Kratz served as the assistant deputy under secretary of defense (logistics plans and programs) within the Office of the Deputy Under Secretary of Defense (Logistics and Materiel Readiness). As such, he was responsible for guiding the DoD's logistics transformation to meet the operational requirements of the 21st century. Kratz oversaw the DoD's long-range logistics planning to meet the requirements of the Quadrennial Defense Review (QDR) and Joint Vision 2020. [louis.kratz@lmco.com]

Bradd Buckingham—senior business development analyst, Lockheed Martin Corporate Engineering and Technology, Logistics and Sustainment. Buckingham holds a Bachelor of Liberal Studies degree in conflict, politics, and national policy from the University of Mary Washington. Buckingham currently provides research and analytic support in theater opening and sustainment, and in support of Army, USMC, and Defense Logistics Agency Depot management. His prior experience includes supporting the Army Manufacturing and Technology Program at Fort Belvoir, VA, as well as providing support to the Joint Defense Manufacturing and Technology Program's (JDMTP) Warfighter Brochure, and as a subject-matter expert for Army ManTech Small Business Innovative Research (SBIR) program. Buckingham was also the acting Army representative for the JDMTP SBIR Working Group. [bradd.a.buckingham@lmco.com]

Bernie Kelleher—Lockheed Martin

Abstract

After more than a decade of conflict, the United States is drawing down defense spending. The Defense Department must cope with declining resources at a time when it also faces persistent global threats and is under pressure to modernize aging systems to deter future competitors.

Faced with declining defense budgets, aging weapon systems, and growing personnel costs, the Department of Defense (DoD) must avoid austerity measures that result in a "hollow force" and focus on how to maintain and enhance key capabilities at reduced cost.

Many U.S. allies faced similar challenges more than a decade ago and opted to transform their military structure to concentrate on their core competency of deterrence and national defense. Their efforts included migration of uniformed personnel to combat/combat support functions, privatization of infrastructure, and the use of public/private partnerships to buy outcomes, versus equipment and services. By highlighting numerous successful precedents, this paper explores how industry and government as partners can support enhanced operational agility and affordability.

Introduction

After more than a decade of conflict, the United States is drawing down defense spending comparably to prior post-conflict reductions as shown in Figure 1. Unlike past drawdowns, however, the U.S. Department of Defense (DoD) at the same time is challenged with deterring persistent threats of terrorism, modernizing aging systems, and continuing operations with U.S. allies.



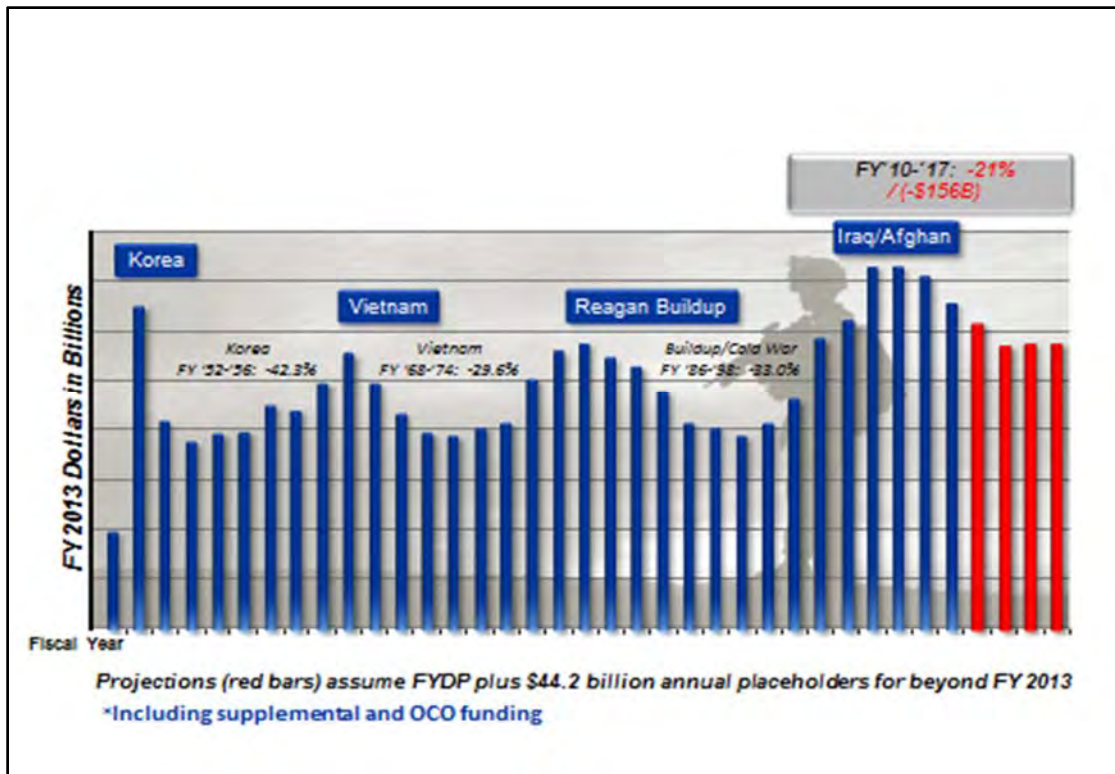


Figure 1. Defense Spending
 (Center for Strategic and Budgetary Assessment, 2011)

U.S. policy-makers can learn from global allies that have faced similar challenges. For example, the United Kingdom, Australia, Canada, and the United Arab Emirates each transformed their military structure to concentrate on core competencies of deterrence and conflict resolution. Key actions included

- migration of uniformed personnel to only combat/combat support functions,
- employment of public/private partnerships (PPP) to buy outcomes (versus equipment and services), and
- formation of commercial joint ventures to assure industrial capability to support readiness.

These actions may be a reasonable strategic framework for the DoD to consider.

Focus on Combat Operations

As Table 1 highlights, a significant portion of current DoD personnel is engaged in occupations not directly tied to military operations, a ratio of nine support personnel for every "trigger puller." As the U.S. military considers force reduction, it is imperative that the nation retain the essential military capability elements. In the private sector, companies typically review core functions to be retained and non-core functions to either engage a partner or outsource.

Table 1. Total U.S. Active Duty and DoD Civilian Personnel

(Defense Manpower Data Center [DDMC], 2011)

Total U.S. Active Duty and DoD Civilian Personnel					
	Enlisted	Officer	Total (Military)	DoD Civilians	Total
Combat Specialty Occupations	192,000	33,000	226,000	n/a	226,000
Other	1,019,000	215,000	1,234,000	784,000	2,018,000
Ratio—tail: tooth	5:1	6:1	5:1	n/a	9:1

The DoD achieved positive results with a similar drawdown during the Clinton administration. This drawdown resulted in unprecedented industrial support for OEF and OIF. Rather than weaken combat capability by reducing wings, retiring ships, or reducing combat units, the DoD and services could evaluate functions that are not directly engaged in the core missions of deterrence and military action. Those non-essential functions may be considered for private sector partnership. Potential non-essential functions include

- financial accounting/independent audits,
- logistics (supply chain and distribution), and
- data center operations.

Outsourcing such functions could yield a 10–15% reduction in personnel, resulting in 20–30% cost savings (Schofield, 2008).

Purchasing Outcomes

The DoD's challenge to modernize the force while maintaining high readiness places significant pressure on R&D and procurement accounts. Historic approaches may not sufficiently deter against an aggressive peer competitor and increases already overburdened life-cycle costs. In this area, our allies have demonstrated the value of public/private partnerships, third-party financing, and buying outcomes to enable required modernization without upfront capital outlay.

The United Kingdom, Canada, Australia, and Singapore rely on outcome-based service contracts for training and other non-combat functions. In these areas, they competitively select industry providers. These countries buy “trained pilots” and allow industry to resource the infrastructure of trainers, simulators, and schoolhouses. The United Kingdom uses similar approaches for “white fleet tankers” and SAR helicopters.

After the United Kingdom reduced their defense budget by nearly 30% in the late 1990s as a result of the Cold War peace dividend, their involvement in the Afghanistan and Iraq conflicts in 2000 and on pushed defense spending up. Rapidly escalating budget constraints created tremendous pressure to reengineer defense spending in order to deliver needed capability while simultaneously improving cost and performance.

Establishing a goal to reduce cost by 20% by 2006, the United Kingdom transitioned to “availability contracting,” paying industry for a specified level of availability over long-term contracts with incentives to reduce support costs and make weapon systems more reliable and efficient. This shift from buying “inputs” (parts, labor, and services) to contracting for “outputs” (availability and capability) instituted a new approach based on partnering with industry and leveraging industry's capital infrastructure.



In developing these “innovative” partnerships, the Ministry of Defense considers itself at the cutting edge of defence management innovation in an area of public policy where the UK leads the world. (Uttley, 2006)

By 2008, this approach generated cumulative savings of approximately £1.4 billion while simultaneously achieving performance improvements. Additionally, this business model enabled the United Kingdom Ministry of Defense (MOD) to focus on combat operations while utilizing industry partnerships and capabilities for weapon system sustainment activities.

An additional model of how PPP brings value to both the taxpayer and the warfighter is the Singapore Basics Wings Course (Services Partnership). Under this PPP, which began in 2008, Lockheed Martin provides the Republic of Singapore Air Force (RSAF) with the highest quality turnkey training solution available to undergraduate pilots. Lockheed Martin acquired and maintains a fleet of trainer aircraft and ground-based training systems to meet the hardware requirements for the RSAF's basic wings flying training. This allows the RSAF to focus on its core business of performing flying training without the need for any capital outlay or to attend to life-cycle logistics support.

Based on those results, the DoD is moving forward to expand PPPs that combine the best of government with the best of industry to improve operational readiness while reducing or eliminating costs. The following are three recent examples:

- **F-22 Raptor:** The F-22 partnership with Ogden Air Force Base provides all of the touch labor depot maintenance under supervision from Lockheed Martin through a direct commercial sales agreement. Lockheed Martin is the performance-based logistics integrator, responsible for the overall supply support and engineering performance of the aircraft. Over the past eight years, this PPP has delivered O&M savings of \$500 million and \$25 million per year in manpower savings (Air Force Program Executive Office for F-22, 2008).
- **Kelly Aviation:** The T-56 Engine partnership between Lockheed Martin's Kelly Aviation and the Oklahoma Air Logistics Complex Center offers “nose-to-tail” aircraft maintenance, modifications, and state-of-the-art upgrades for aircraft built by Lockheed Martin and other manufacturers. Since this partnership began, Lockheed Martin has been able to increase the availability of the engine (time-on-wing) by more than 40% while reducing the engine repair turnaround time by 50%. Additionally, Lockheed Martin has allowed the Air Force to maintain mission readiness at a reduced cost by providing 100% on-time delivery with a 99.9% defect-free quality delivery.
- **H-60 Tip-to-Tail:** Managed by Military Helicopter Support Company (MHSCo)—a Lockheed Martin/Sikorsky joint venture partnership with the U.S. Navy—has been providing supply support to a fleet of Navy H-60s since 2003. This partnership requires MHSCo to manage the supply chain and provide as-needed repair to more than 1,250 aircraft components and subsystems. MHSCo partners with 25 original equipment manufacturers and five government depots, and incorporates industry's collective best practices and in-depth knowledge of the H-60 to enable and incentivize effective and affordable sustainment support to customers. The PPP has been the key enabler to the success of the tip-to-tail performance-based logistics programs (O'Hatnick, 2012).



Strong consideration for use of the approaches in areas such as training, mobility, SAR, ASW, and similar activities may be evaluated by the DoD.

Forming Joint Ventures

Another example that effectively combines the best of government with the best of industry is the Advanced Military Maintenance, Repair, and Overhaul Center (AMMROC), a joint venture enterprise between Mubadala, Sikorsky Aircraft Corporation, and Lockheed Martin Corporation.

Situated in the Emirate of Abu Dhabi, UAE, AMMROC is their vehicle to provide a fully integrated military aircraft, supply chain, modification/upgrade, and maintenance, repair, and overhaul (MRO) facility serving military aircraft in the South Asia/Middle East/North Africa (SAMENA) region. Led by CEO Fahed Ghareeb Al Shamesi, AMMROC is committed to delivering a fully integrated MRO support program within the region.

As an MRO center for excellence for all fixed and rotary-wing aircraft in the SAMENA region, the mission of AMMROC is to provide industry best maintenance service and support for military customers by

- unifying all logistic and maintenance efforts into a single entity,
- coordinating all required OEM and third-party contractors, and
- combining all supply chain authority under one entity.

By accessing regionally available resources and injecting a highly trained, skilled workforce and pioneering new technology, AMMROC will enable the UAE, and all its customers, to maintain mission readiness and sustainability while enjoying the reduced costs afforded by a newly established mission-critical supply and value chain. The AMMROC joint venture effectively combines the best of government with the best of industry to improve operational readiness while reducing or eliminating costs.

Summary

Faced with challenges such as declining defense budgets, aging weapon systems, and growing personnel costs, the DoD may consider innovative business arrangements to meet current challenges. Challenging times call for innovative solutions based on a solid foundation of empirical evidence. As cited in this paper, there are viable alternatives—based on successful global precedents—that build on strong government/industry partnerships to reduce costs while ensuring combat-ready personnel.

Migration of military personnel to combat-only functions, use of outcome-based partnerships, and industrial joint ventures have demonstrated the ability to retain performance while reducing cost by 20% or more and are becoming standard practice in Australia, Canada, and other nations. Use of these approaches in areas such as supply chain, distribution, data center operations, depot maintenance, training, mobility, SAR, ASW, and similar areas may be evaluated by the policy-makers to enhance global security.

References

Air Force Program Executive Office for F-22. (2008, June 16). *The Secretary of Defense Performance-Based Logistics Awards Program for Excellence in Performance-Based Logistics*. Retrieved from University of Tennessee, Knoxville, website: <http://thecenter.utk.edu/images/Users/1/PBL/System%20Level/The%20Department%20of%20Defense%20Awards%20Program%20for%20Excellence%20in%20Performance%20Based%20Logistics%202008%20-%20F-22%20Raptor.pdf>



- Center for Strategic and Budgetary Assessment. (2011). *Analysis of the FY2012 defense budget—Thinking smarter about defense*. Washington, DC: Center for Strategic and Budgetary Assessment.
- Defense Manpower Data Center (DMDC). (2011). *Active duty military personnel by service by rank/grade*. Retrieved from <https://www.dmdc.osd.mil/appj/dwp/reports.do?category=reports&subCat=milActDutReg>
- DoD. (2012). *Department of Defense base structure report—2012 baseline (A summary of DoD's real property inventory)*. Washington, DC: Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics. Retrieved from <http://www.acq.osd.mil/ie/download/bsr/BSR2012Baseline.pdf>
- O'Hatnick, J. (2012). *H-60 tip-to-tail performance based logistics program: A case study*. College Park, MD: University of Maryland, The Center for Public Policy and Private Enterprise. Retrieved from https://acc.dau.mil/adl/en-US/548762/file/68096/UMD%20Case%20Study_LMCO_H60%20Tip%20To%20Tail%20PBL_October%202012.pdf
- Schofield, S. (2008, July). Why the Department of Defense is so focused on outsourcing. *Contract Management*. Retrieved from <http://www.ncmahq.org/files/Articles/CM0708%20-%20pages%2030-33.pdf>
- United States Air Force. (2011). *United States Air Force Scientific Advisory Board report on sustaining Air Force aging aircraft into the 21st century*. Retrieved from [http://www.dre.vanderbilt.edu/~schmidt/PDF/USAF%20SAB%20Sustaining%20Aging%20Aircraft%20Study%20Final%20Report%20\(Public%20Release\).pdf](http://www.dre.vanderbilt.edu/~schmidt/PDF/USAF%20SAB%20Sustaining%20Aging%20Aircraft%20Study%20Final%20Report%20(Public%20Release).pdf)
- Uttley, M. (2006, Autumn). Public–private partnerships in United Kingdom defence: Opportunities and risks. *RUSI Defence Systems*. Retrieved from http://www.rusi.org/downloads/assets/Public_Private_Partnership_in_UK_Defence.pdf





ACQUISITION RESEARCH PROGRAM
GRADUATE SCHOOL OF BUSINESS & PUBLIC POLICY
NAVAL POSTGRADUATE SCHOOL
555 DYER ROAD, INGERSOLL HALL
MONTEREY, CA 93943

www.acquisitionresearch.net

Critical Choices

Naval Post Graduate School Acquisition Research Symposium

15 May 2014



Dr. Marilyn Gaska
Chief Engineer
Logistics & Sustainment
Corporate Engineering, Technology , and Operations



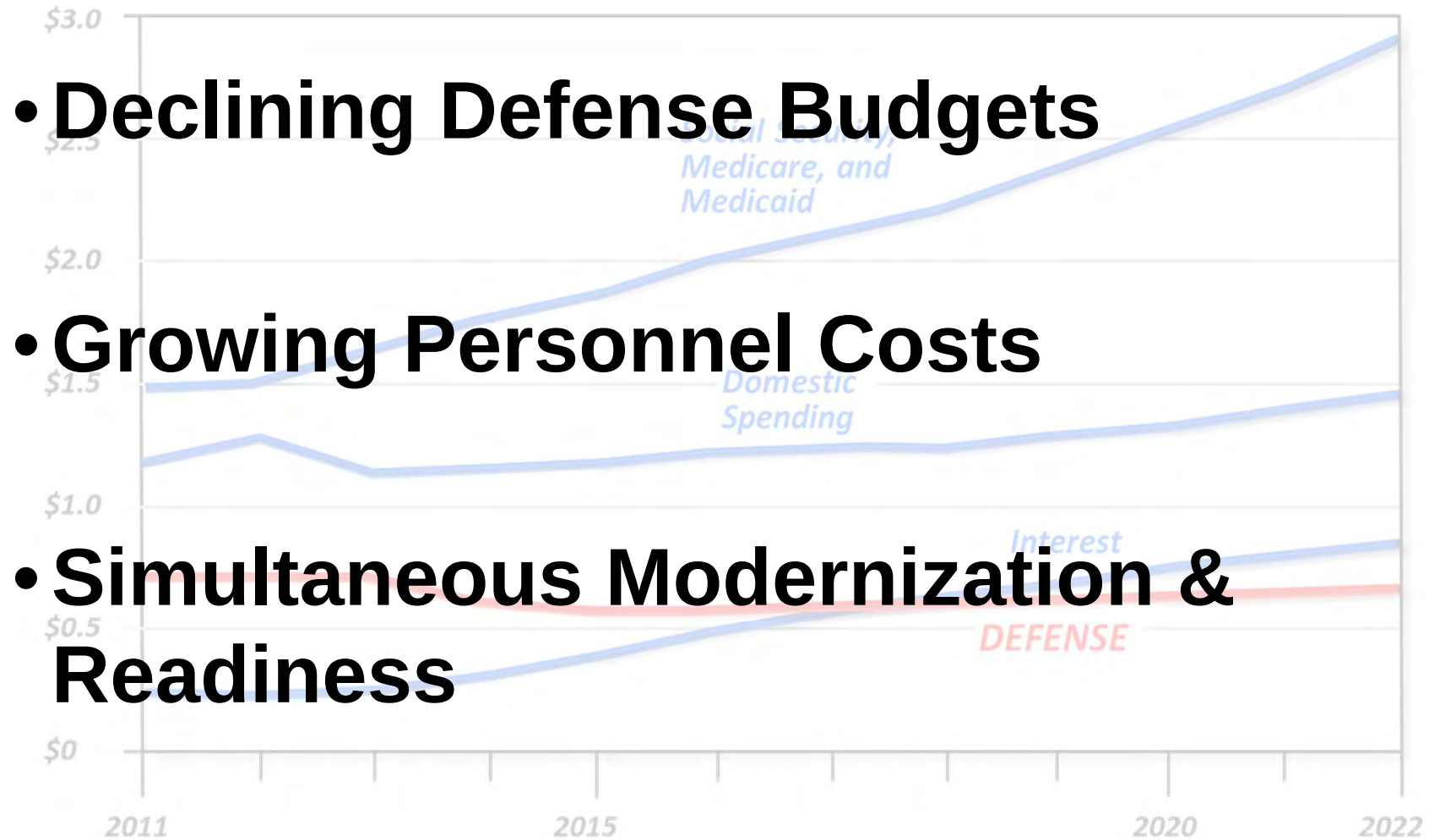
Agenda

- **Baseline Conditions**
- **Manpower Considerations**
- **Purchasing Outcomes**
- **Public Private Partnerships**

Baseline Conditions



Outlays in Trillions of Dollars



- Declining Defense Budgets
- Growing Personnel Costs
- Simultaneous Modernization & Readiness

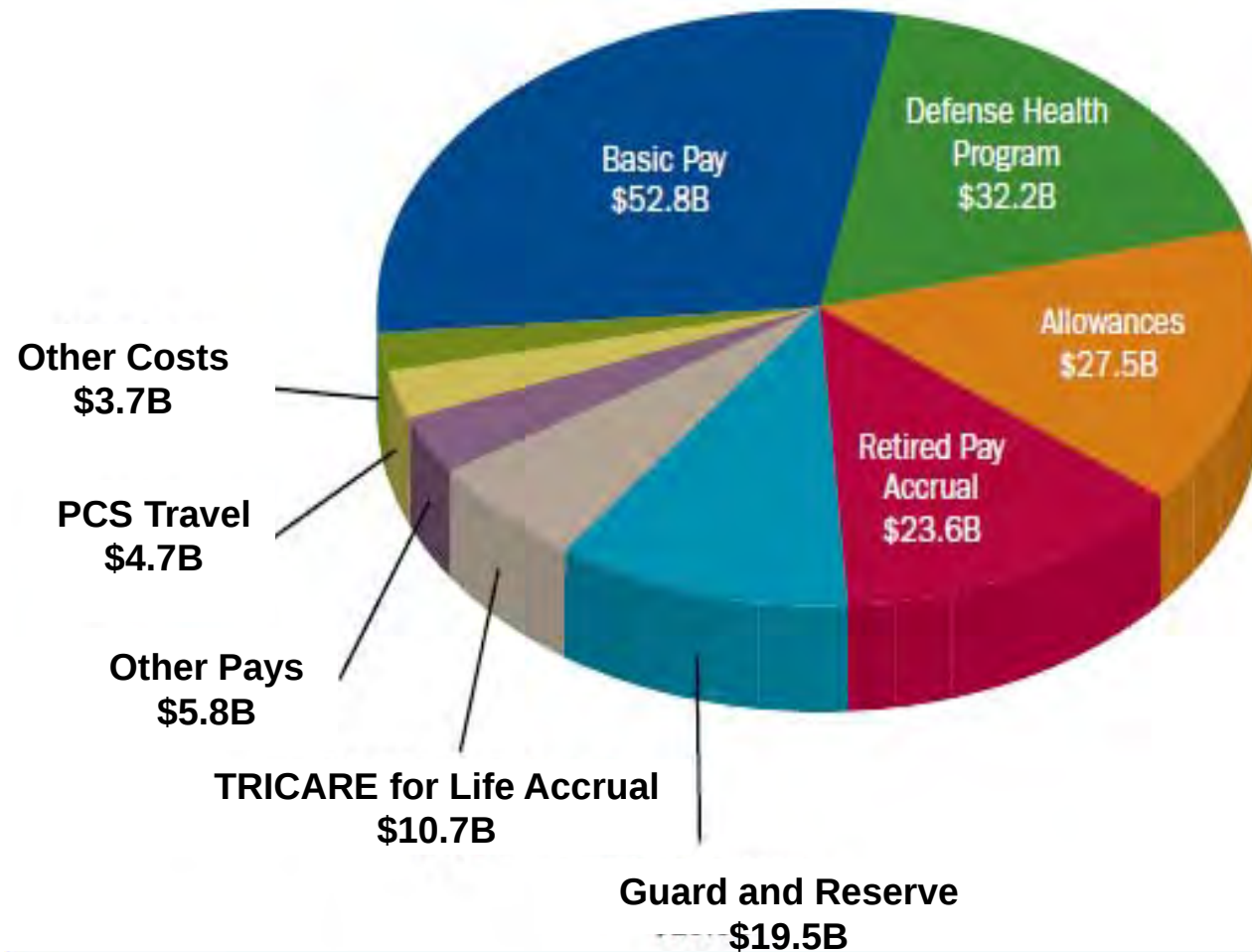


Allied Experience

Transformed military structures to concentrate on core competencies

- **Migrate uniformed personnel to only combat / combat support functions**
- **Employ of public / private partnerships**
- **Foster commercial joint ventures**

US Force Structure Costs



US Military Personnel Cost = \$180B/year

Autonomous Joint Force?

- Integrated autonomy in a Joint Force environment
- Operations with reduced manpower
- ROI in relation to the full manpower life cycle



Focus on Combat Operations



Total US Active Duty and DoD Civilian Personnel					
	Enlisted	Officer	Total (Military)	DoD Civilians	Total
Combat Specialty Occupations	192,000	33,000	226,000	n/a	226,000
Other	1,019,000	215,000	1,234,000	784,000	2,018,000
Ratio—tail : tooth	5:1	6:1	5:1	n/a	9:1

Non-combat essential functions may be considered for private sector partnerships

- Financial accounting/independent audits
- Logistics (supply chain and distribution)
- Data center operations

As the U.S. military considers force reduction, it is imperative that the nation retain essential military capability

Public Private Partnerships



Public Private Partnerships



- **Base housing**
- **Energy generation**
- **Transportation**
- **Enhanced Use Lease**

Can we capitalize on prior efforts?

Joint Ventures - AMMROC



- **Joint venture enterprise between Mubadala, Sikorsky, & Lockheed Martin**
- **Unifies all logistic and maintenance efforts into a single entity**
- **Coordinates all required OEM and third party contractors**
- **Combines all supply chain authority under one entity**

The Best of Government and the Best of Industry

Strategic Questions



- **Does the United States really want a technologically-enabled military?**
- **Are the DoD and military departments ready to re-look the public/private sector balance? (similar to our Allies)**
- **Can we continue to provide affordable readiness within the current regulatory environment?**

