# NAVAL POSTGRADUATE SCHOOL
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# THESIS

**A CASE STUDY OF ACQUISITION REFORM:
BRIGADE COMBAT TEAM,
THE VANGUARD FOR ARMY TRANSFORMATION**

by

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June 2001

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# A CASE STUDY OF ACQUISITION REFORM: BRIGADE COMBAT TEAM, THE VANGUARD FOR ARMY TRANSFORMATION

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B.S.M.E., University of Maryland, 1988

Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF SCIENCE IN PROGRAM MANAGEMENT**

from the

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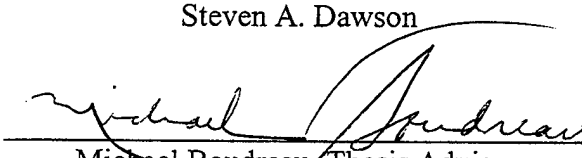
Approved by: 
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# I. INTRODUCTION

## A. GENERAL

A program like the Brigade Combat Team (BCT) only comes along once in one's career. Formerly known as the Medium Combat Team (MCT) and the Medium Weight Brigade, it is now commonly known as "the Brigade" or BCT. Like the Bradley Fighting Vehicle and the Abrams Tank programs before it, those involved considered the experience one of the most worthwhile efforts in which they had ever participated. Recent retirees from these programs have seen their systems come from Cold War pipe dreams to reality. Those supporting the BCT program are just beginning to appreciate what they went through. Today, the Army stands on the threshold of a series of new programs. With these programs becoming reality, they will likely stand back 20 years from now and say, "We have contributed to something worthwhile." Our goal, of course, is more than just retirement, it is to deliver a product through such a program that saves soldiers lives, helps to build democracy, and in the end, saves others' lives too.

The four of the last six Chiefs of Staff of the Army have identified potential force changes, to include medium forces that could rapidly deploy anywhere in the world. Their efforts were not successful in that they failed to transform the Army. They envisioned forces that would deploy rapidly and hold ground until heavy forces could be shipped to the conflict, but were not intended to win wars. Our current Chief of Staff is leading the Army in transforming itself into a force capable of winning wars.

On 12 October 1999, when speaking to the Association of United States Army (AUSA), the Army's Chief of Staff, General Shinseki, stated that he had a new Army vision that was based on a lighter, more lethal, faster deployable, highly mobile force that can arrive anywhere in the world within 96 hours (Shinseki, GEN, October 1999).

Once there, the brigades would aggressively carryout missions supporting the National Military Authority ranging from Stability and Support Operations (SASO) through Small Scale Contingency (SSC) and up to and including, with augmentation, Major Theatre War (MTW). They will be much more substantial than the airborne forces, such as the 82nd Airborne Division, which provide today's strategic quick-reaction response without having the enormous logistics burden of today's armor force. Although they perform the forced entry and insertion role better than any army in the world does, the 82nd doesn't have organic staying power that comes with armored combat vehicles. The new BCT force will be an organic, self-reliant force that only foolish third world tyrants will think of tangling with for fear of receiving a unique site visit within four days of their latest tirade.

This is not to say that the new brigades will be the only combat force projection forces. General Shinseki's intent is to strategically place adequate forces *where* the National Command Authority needs them *when* they need them there. The early entry forces such as the Army Rangers, Marine Corps intrusion forces, and the 82nd Airborne Division will all still be strategic assets that will often be employed first. Close on their heels will be the new brigades providing the deployable punch that only it can deliver.

General Shinseki's audience at AUSA was comprised of two main groups. First, the Army's past leaders who formed the knowledge base on which his decision was based and second on the future Army leaders who will carry out his vision. Both have influenced, and continue to influence, the Army's Transformation.

## B. OBJECTIVES

My research will investigate application of acquisition reform to major system procurement. It will be woven into a case study of the processes and initiatives evoked. My focus will be on what the Army, specifically the PMO, employed to develop an ACAT ID major weapon system program and award a production contract within 16 months after program initiation. I will also investigate what has been done to set the program up for success. My research will also include a discussion of the relative hindrances encountered using such processes. Due to the fast pace of the program, I anticipate using an iterative approach to completing my thesis. During the year, I will perform a circuitous review of the research questions and intended outcomes and will revise my focus accordingly.

## C. RESEARCH QUESTIONS

To achieve the objectives of this study, the primary research question was: What has been the impact of Department of Defense (DoD) acquisition reform on the development of the Brigade Combat Team? From the basic research question, the following subsidiary questions were developed:

1. What is the Brigade Combat Team: Background and overview?
2. What attributes of acquisition reform are relevant to the BCT?
3. What areas of acquisition reform are being employed to execute the program?
4. What are the advantages and disadvantages that acquisition reform brings to the BCT?
5. What conclusions and follow-on recommendations can be drawn from applying acquisition reform to the BCT?

## D. ASSUMPTIONS AND LIMITATIONS

Three primary assumptions have been made relevant to this study. First, the reader understands basic acquisition theories, milestones, and programmatic requirements. Second, the General Accounting Office (GAO) will publish its opinion in late March 2001 that is favorable to the Army and its choice for the vehicle platform. Third, the protestor will not take their case to Federal Court; further litigation will tend to overwhelm the acceleration and reform benefits achieved. Finally, that current timelines will be adhered to. Had the Army followed historical acquisition policies and procedures, there is no foreseeable way for them to have achieved what they have, but the likelihood of a protest at the point of the production contract award would be much less.

## E. METHODOLOGY

The data for this study were obtained from several sources. First, the researcher conducted an extensive review of available programmatic documents, briefings, and acquisition literature. Further external literature reviews consisted of library searches,

reviews of internal and external Government data sources, extensive use of the Internet, and experiential data collection while supporting execution of the program. Second, several interviews were conducted with various individuals involved in DoD acquisition policy at the program and major subordinate command levels.

## F. THESIS ORGANIZATION

This thesis consists of five chapters. This chapter provides the objectives, scope, and methodology for collecting pertinent data. Chapter II provides an overview of proposed BCT as it contributes to the Army Transformation. The Army will provide an evolutionary application of technology, training, and time to transform from an Initial Brigade Combat Team to the Interim Brigade Combat Team. Initially, they will use surrogate vehicles and evolving tactics, techniques and procedures, and then transition to the Interim solution with deliberately purchased systems that meet all the users requirements. Eventually, with the application of more time and resources, the Army will transform itself much further into its Objective Force as the pinnacle of the Army Transformation.

Chapter III provides an overview of the applicable acquisition reform initiatives and accelerated acquisition employed such as requirements generation; market survey; major program realignments to set fiscal resources; total Army support, staffing, and facilitization; Draft RFPs with Question and Answer; performance specifications; model contracting; non-developmental and commercially available products with modification; discussions; and contract award.

Chapter IV discusses respective advantages and disadvantages experienced through employment of acquisition reform and accelerated acquisition such as the compelling and conflicting requirements; disparities in proposals; acquisition speed v. program risks; and Performance, Schedule, and Cost Trade-offs. Chapter V discusses the conclusions and recommendations for follow-on analysis that include the contract award protest and its affect on the overall program; the respective protest GAO Hearing and resolution; and the follow-on research and analysis issues.

## II. THE PROPOSED BCT AS IT CONTRIBUTES TO THE ARMY TRANSFORMATION

### A. INTERIM BRIGADE COMBAT TEAM

The Brigade Combat Team (BCT) is the spearhead of the Army's transformation. The Army has purposely identified the initial and the interim forces with the same acronym. For this paper, I will use the terms Initial IBCT (Initial Brigade Combat Team) and IBCT (Interim Brigade Combat Team) to delineate the difference. On Figure 1 below, the transformation starts with the Initial IBCT, and evolves to the IBCT. At a distant time in the future, the Army will break-point the IBCT before

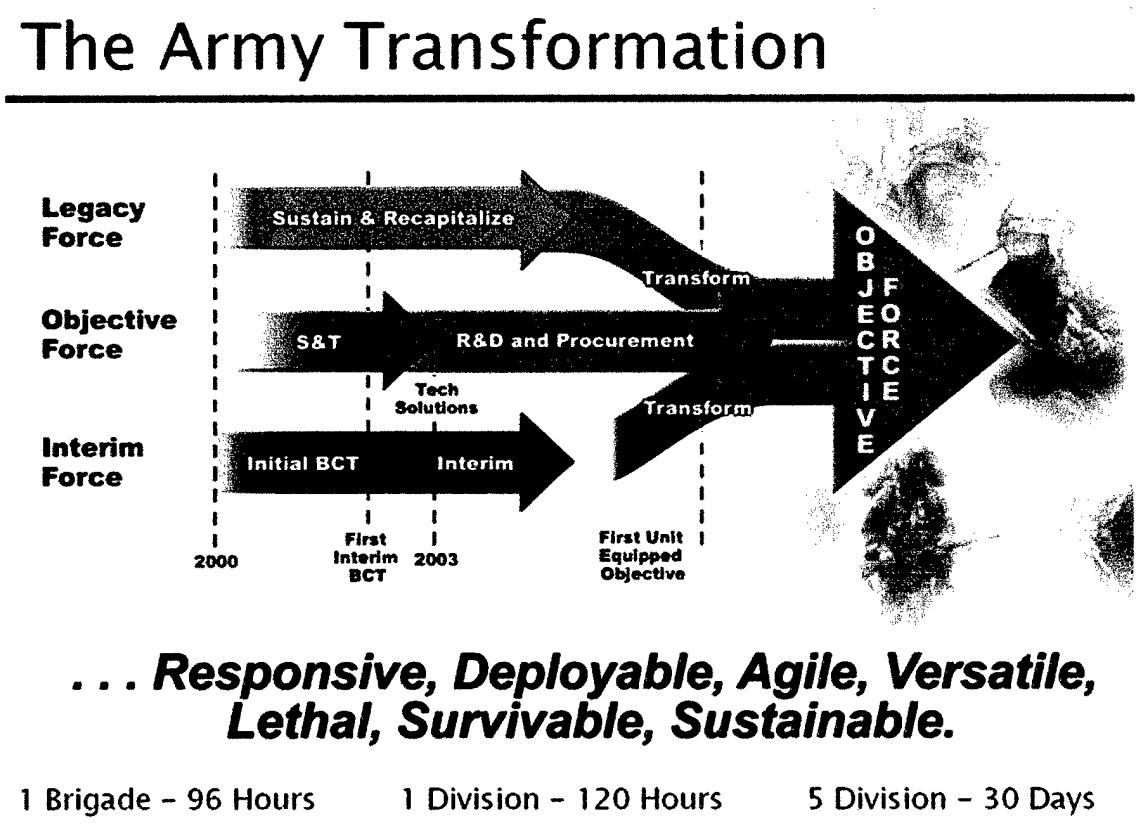



Figure 1 – Army Transformation Slide (From Ref. US Army Transformation Web Page)

completing the evolution into the Objective Force. There is not one singular path to the Objective Force, but three simultaneous paths that contribute key components, fundamental capabilities, and doctrinal evolution.

The PM-BCT Charter contains the following excerpts with regard to what the Interim, Initial, and Objective Forces will achieve (PM-BCT Charter, 2000):

The IBCT will contain three subparts, the Initial IBCT, the IBCT, and then unit collective training. Initial IBCT will establish, "an initial capability utilizing off-the-shelf equipment and some brigade organic equipment." It is a developmental, "guide for selection of surrogate equipment and support its fielding, to include organizational design validation." It includes, "reorganizing, and then conducting developmental training of the first IBCT using loaner and surrogate equipment."

The IBCT is, "fielding (Total Package Fielding) of the procured MAV, including New Equipment Training (NET), and new organizational team training (NOTT)." The initial IBCT and the IBCT, "will not be immediately deployable/employable."

The third part consists of unit collective training that follows fielding. The Gaining units must undergo "unit collective training, culminating in a capstone exercise. Upon completion of this part, the brigade will be deployable/employable."

I'll start by describing the IBCT, as it is most pertinent to this thesis, then discuss the Initial IBCT, the Objective Force, and then wrap up this chapter with a discussion of the Army Transformation. The BCT is a self-contained fighting force that is capable of sustained combat operations and is capable of being deployed anywhere in the world in 96 hours.

### 1. What is a BCT?

To best answer the question about what an Interim Brigade Combat Team is, we must first look to the key materiel and combat developers. COL Schenk, the original Program Manager, Brigade Combat Team (PM-BCT) provided a media briefing on 24 May 2000 at Aberdeen Proving Ground wherein his summary slide explained that the BCT supports the Army leadership's plan for transformation, fields a responsive force in the near-term, and provides a force that fulfills fundamental warfighting imperatives. He also stated that the BCT is a force, not just equipment. It provides a broad range of strategic options to the National Command Authority; it encompasses capabilities and characteristics that are needed in the interim but are not available today, by employing off-the-shelf equipment that allows the army to respond immediately to current operational requirements (COL Schenk, May 2000).

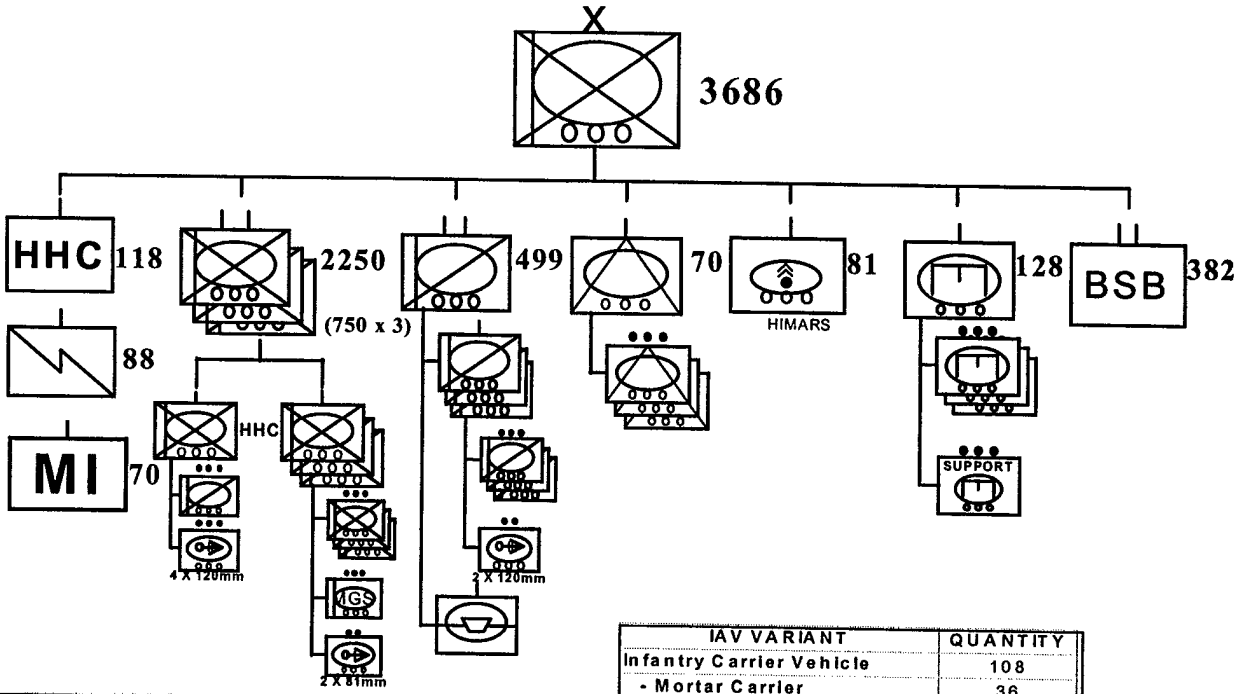
COL Rodriquez, the US Army Training and Doctrine Command (TRADOC), System Manager for the Interim Armored Vehicle (TSM-IAV) defined it best by describing what the IBCT is not. He stated that the IBCT brigade is not built to fight head on with conventional Russian tanks. (COL Rodriguez, October 2001)

LTG Kern, on the day of the IAV contract award, provided this description of the BCT that differentiates it from previous attempts at transformation, "This is not an experimental force, rather it represents a force capable of meeting the needs of regional commanders in chief, while concurrently assisting the Army in concurrent development of 21st century doctrine to meet the 21st century threats" (Kern, LTG November, 2000). This is consistent with the Army transformation Campaign Plan where the Initial BCT Charter explicitly states that this is not an experimental force. (BCT Charter, 2000).

The literature provided by HQTRADOC for the Platform Performance Demonstration described the BCT as a "full-spectrum, conventional combat force organized and equipped under a division headquarters. It is designed and optimized for employment in small-scale contingency operations in complex and urban terrain, and built to confront low-end and mid-range threats that may employ asymmetrical capabilities" (TRADOC Handout, December 1999).

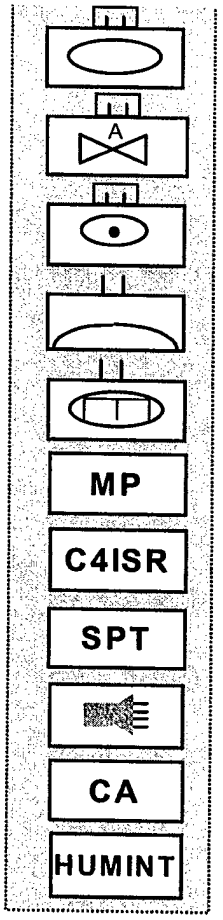
The Brigade Combat Team will contain two basic variants, an Infantry Carrier Vehicle (ICV) and a Mobile Gun System (MGS). The ICV has eight additional configurations, the 120 mm Mortar Carrier (MC) vehicle, Anti-Tank Guided Missile (ATGM) vehicle, the Reconnaissance Vehicle (RV), the Commander's Vehicle (CV), the Fire Support Vehicle (FSV), the Engineer Squad Vehicle (ESV), the Nuclear Biological and Chemical Reconnaissance Vehicle (NBCRV) and the Medical Evacuation Vehicle (MEV). Figure 2 below provides an IBCT Organizational wire diagram.

# Initial Brigade Combat Team




| BCT Roll Up | PAX | IAV | MTV | HEMMT | HMMWV | OTHER |
|---|---|---|---|---|---|---|
| HHC | 118 | 3 | 2 | 0 | 32 | 0 |
| MI Company | 70 | 0 | 2 | 0 | 28 | 0 |
| SIG Company | 88 | 0 | 0 | 0 | 40 | 0 |
| IN Battalions (x3 | 2250 | 237 | 33 | 0 | 111 | 0 |
| AT Company | 70 | 13 | 1 | 0 | 3 | 0 |
| RSTA Sqdn | 499 | 50 | 7 | 0 | 72 | 4 |
| HIMARS | 81 | 0 | 8 | 0 | 19 | 0 |
| ENG Company | 128 | 9 | 5 | 0 | 10 | 12 |
| BSB | 382 | 0 | 37 | 53 | 87 | 0 |
| Totals | 3686 | 312 | 95 | 53 | 402 | 16 |

| IAV VARIANT | QUANTITY |
|---|---|
| Infantry Carrier Vehicle | 108 |
| - Mortar Carrier | 36 |
| - Antitank Guided Missile | 12 |
| - Reconnaissance | 54 |
| - Fire Support | 13 |
| - Engineer Squad | 9 |
| - Commander's | 27 |
| - Medical | 17 |
| - NBC Reconnaissance | 0 |
| Mobile Gun System | 36 |
| TOTAL | 312 |




DIV/CORPS AUGMENTATION

Figure 2 – Organization Wire Diagram of the IBCT (From Ref. PM-BCT April 2001)

The following are excerpts from the Initial Brigade Combat Team program literature provided at the December 1999 Industry Day (TRADOC IBCT Handout, December 1999). The words in Italics are the key enablers from GEN Shinseki's Army Transformation Vision. The literature provided that there will be a total of 2131 IAV vehicles in the brigade providing a balanced mix of the configurations from Figure 2. Using Air Force strategic deployment assets, the IBCT will *deploy* rapidly as a combat unit and immediately begin combat operations; objectively anywhere in the world within 96 hours. The BCT brings to the fight an *agile* response that is prepared to transition from peacekeeping to combat and back without augmentation. It will contain a *versatile* capability to respond to escalating crisis. It brings overwhelming *lethality* to deter aggression. It has enhanced *survivability* through speed and situational awareness, and comes prepared for the fight with enhanced *sustainment*.

The operational Requirement Paragraph of the Acquisition Strategy Report further refines these key enablers as the ability to be strategically deployed (C-17/C-5) combat ready, strategically responsive and versatile, self-contained and self reliant, air deployable by C-130 and ready for immediate combat operations, logistically supportable with a minimized footprint, operational mobile across the breadth of the battlefield in complex, urban, and rolling terrain, and jointly operable (Acquisition Strategy Report, 17 March 2000). With the organic assets in place, the Army will be able to support National Military Strategy by providing a real-world deterrence force that also carries the capability to take in foes with superior numbers and equipment. The Army vision is

based on this concept and the BCT organization and structure is therefore critical to achieving the Army's vision (Acquisition Strategy Report, 17 March 2000).

The IAV contract, awarded in November 2000, contains an eight-year period of performance to cover six brigade sets wherein each interim armored vehicle (IAV) variant/configuration is fixed price by ordering period. The contract also includes development, New Equipment Training, Instructor & Key Personnel Training, Material Fielding, Contractor Logistics & maintenance support, refurbishment of bid samples & test vehicles, and retrofits for block improvements. It is more than just IAV vehicles, which is the combat platform. It also requires a light to medium-weight "sustainment" force based on existing Army assets such as HMMWV, FMTV, and HEMMT tactical trucks and systems.

The first two brigades are being established at Ft. Lewis, Washington with efforts started nearly immediately after GEN Shinseki's AUSA brief. As I will describe below, the soldiers are training on surrogate, loaned, and leased equipment. They are training to new BCT doctrine and are helping to validate that doctrine so that when they receive their IBCT equipment, the learning curve will be very steep to quickly bring their units to operational status.

**2. Medium Weight Vehicles**

The insertion of medium forces into the US Army is not a new idea. Four of the last six Chiefs of Staff of the Army (CSA) have initiated similar transformations of the

Army with varying degrees of success. In order they were, the 9th infantry Division Motorized (GEN Meyer and GEN Wickham), Task Force XXI (GEN Vuono), Strike Force (GEN Reimer), and Medium Combat Team (GEN Shinseki). These all now yield to the Interim Brigade Combat Team as it was named in December 1999. Ironically, the previous attempts at deriving a new Army all contained the similar intent as the IBCT today. In fact, we find key words describing, deployability, lethality, speed, and mobility intertwined in each of these efforts.

### *a) The Motorized Experience*

These words were a driving force behind the largest transformation that occurred in the last century, the motorized concepts in the 9th ID (Motorized) (Bowman, Kendall, and Saunders, Jun 1989). Building on concepts that supported the successes of the 9th Motorized, Strike Force was developed around the idea of modular force components that came together to respond to and solve a worldwide contingency. The Strike Force efforts were detailed under then CSA Gen. Reimer (Miller, December 1998). The effort was concepted to include a fast deployment time, flexible (meaning "agile") response, full spectrum firepower, scaleable strategic response, and CONUS based headquarters (Gordon and Wilson, May 98). The effort eventually evolved to become only the Headquarters element of that force and had stagnated there when GEN Shinseki took over as the CSA in June 1999. The Medium Combat Team that evolved to the IBCT contained most of the same facets as Strike Force along with a few more. I will cover this in more depth in Section 3 below.

What separates the IBCT from the previous attempts was the lack of vision of the primary Army leadership at the time from Brigade Commanders on up. (Peters, Dec 99). Army branch-hardened traditionalists fought hard to continue the delineation of their own branches similar to Congressional "pork barrel" politics (Gordon and Wilson, May 98). Their opinion was that each branch has its own role on the battlefield and they are separate and distinct with the exception of Task Force and Team concepts where branch systems are combined to solve a specific operational shortcoming. This is especially true of the Armor and Infantry communities that have historically wrestled for development funds for major programs. To these individuals, armor is armor and infantry is infantry.

### *b) 21st Century Shortcomings*

As recently as the conflict in Kosovo in 1999, our shortcomings in handling quick erupting and fierce regional conflicts were clearly evident and helped to define the shortcomings of both Heavy and Light Army forces. Commonly described as a "barbell", the current Army contains only one division that come close to medium forces and that is the 101st Air Assault Division (Gordon and Wilson, May 1998, page 3). The 101 Air Assault Division comes closest to a medium force, but is unfortunately encumbered by the same extended logistics tail as the heavy forces. Therefore, it is not as strategically deployable as the Army needs.

### *c) Real World Problems*

In Yugoslavia and Kosovo, the Army heavy force needed to oust Mr. Milosovic would have been too slow in strategically deploying and getting to the fight with enough equipment to be useful. This was highlighted in a New York Times article at the time that the US was making plans for a ground invasion force into Kosovo when the Army, "...suddenly discovered that, without significant new road work, the large American M1 Abrams tanks could not negotiate the single route from Albania into Kosovo." (New York Times On Line, November 1999). Light forces would not have carried enough punch to be effective either. The 82nd Airborne Division could have been deployed to oust Milosovic but would not have been supportable if the Yugoslav army attacked with its own armor forces.

This was the very similar scenario that the 82nd Airborne Division faced in Operation Desert Storm in 1990. Although considered the best strategic quick deployment force in the world, the 82nd Airborne Division would have had great difficulty repelling determined Iraqi armored forces due to their lack of anti-armor capability. Gordon and Wilson described this in 1998 when they supported the need for Medium Forces, "While the 82nd Airborne did deploy, it quickly assumed the title of "speed bump" in the face of an enemy with huge numbers of armored vehicles" (Gordon and Wilson, May 1998, Page 6). These same criticisms appeared in the 1992 Congressional after action report wherein they also illuminated the strategic capabilities and shortcomings of the 82nd Airborne (House of Representatives, March 1992).

SMA Jack L. Tilley stated it quite simply in a recent letter to all Army soldiers that he published over the Internet. Speaking of the basic reasoning for the Army transformation and other new policies, he explained, "Nobody will ever know for certain why Saddam stopped when he had our forces outgunned and outnumbered. Far more certain is the fact that the next dictator to challenge us won't repeat Saddam's mistakes. When future foes mobilize their forces, they will likely move quickly while hoping they can achieve their objectives before we can deploy our forces." (Tilley, SMA, May 2001)

***d) Repeated Attempts at Medium***

The Army has repeatedly studied the prospect of developing and fielding a medium force that fills the void between heavy and light forces. In fact, they were building the "Headquarters" for Strike Force; a force similar to the 9th ID (Motorized) from the late 1980's. Originally based on the concept of a family of vehicle variants on a common chassis, a Strike Force Headquarters was to be located at Ft. Polk, LA starting in October of 1998. It found its demise in the fervor of the Medium Combat Team in the fall of 1999. The significant fact for the Strike Force program, was that it became a "headquarters" for carrying out regional conflict management rather than an actual stand-alone deployable force. The Army was unable to figure out how to restructure itself effectively or, more importantly, to develop and employ a full force cost effectively. Clearly to the Army management, something more radical had to be done.

*e) Basic Medium Vehicle Requirements*

Once again, the Army derived the Strike Force requirements around such capabilities as, light weight armor protection – 7.62 mm ball; underbody blast protection – mine survivability; upgrade to improved ballistic protection – scaleable applique armor; C-130 transportable - deployable worldwide; and high speed - increased mobility. The Army planned a two-phased solicitation, which was divided between a 48-month force development and production vehicle deliveries 16 months after contract award (Strike Force Market Survey, October 1998). The planned Phase II solicitation included less than 350 vehicles in 11 variants: Medium Armored Fighting Vehicle, Reconnaissance Vehicle, Medium Armored ATGM Vehicle, Personnel Carrier, Logistic Resupply Vehicle, Recovery and Maintenance Vehicle, Ambulance Vehicle, Medical Treatment Vehicle, Command and Control Vehicle, 120 mm Mortar Vehicle, and an 81 mm Mortar Vehicle. As evidenced by the market survey results (Figure 3), numerous similarities exist between the original Strike Force plan and the BCT as it is known today.

**3. Medium Combat Team**

The incoming Chief of Staff of the Army, General Shinseki hinted at the vastness of his plans soon after assuming his new duties in the summer of 1999. He specified his intent for restructuring the heavy and light forces as, "...more strategically deployable and more agile forces with a smaller footprint...more lethal, survivable and tactically mobile. Achieving this paradigm will require innovative thinking about force structure, modernization efforts and spending." (Shinseki, GEN, 23 June 1999). The words he used then evolved into his October 1999 AUSA speech that rocked the Army's core. He stated that not only did the Army need to modernize, but it also needed to reorganize around the

# Emerging Light Armored Vehicle Family Assessment

| Company | United Defense | Hagglunds | Hagglunds | Alvis | MaK | AV Technology | TM&LS (Cad Gage) | GM | GM | Henschel Wehrtecknik | United Defense |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicles | AGS (Track) | CV9030/40 (Tracked) | SUSV BV206S (Tracked) | Scorpion (Tracked) | Wiesel-2 (Track) | Pandur (6x6) | LAV (6x6) | LAV II (8x8) | LAV III (8x8) | Fuchs TPzk (6x6) | M113A3 |
| Country | USA | Sweden | Sweden | UK | FRG | US/Austria | USA | Canada | Canada | FRG | USA |
| 1. Light Armor / Anti-Tank | | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 2. Recce | | Yes 30mm/40mm | Unknown? | Yes 30mm | Yes 20mm | 30mm | 20/25/30mm or 40mm Gde | LAV-25 25mm | LAV-25 25/30mm 35mm (Proposed) | Yes 20mm | Yes |
| 3. IFV | | 30mm/40mm (8D) | | 30mm (8D) | 20mm (0D) | 30mm (?D) | LAV-300 20/25/30mm (?D) | LAV-25 25mm (6D) | LAV-25 25mm (6D) (Prototype) | 20mm (?D) | Yes |
| 4. Armored Pers. Carrier | | APC (3+8D) | APC (4+8D) | | | APC (2+8) | APC (3+9D) | APC (2+8D) | APC (2+8D) | APC (2+10D) | APC (2+11) |
| 5. Mortar | | | 81mm | | 60/120mm (Develop) | 81 or 120mm | 81mm | 81mm or 120mm | 81mm or 120mm | 81mm | Yes |
| 6. Command Post/C2 | | Yes | Yes | Yes | Proposed | Yes | Yes | Yes | Yes (Prototype) | Yes | Yes |
| 7. Recovery/Maint. | | Yes | Proposed | Yes | Proposed | Unknown? | Yes | Yes | Yes (Prototype) | Yes | Yes |
| 8. Logistics | | | | | | Unknown? | Yes | Yes | Yes (Prototype) | Yes | Yes |
| 9. Ambulance | | | | Yes | Yes | Yes | Yes | Yes | Yes (Prototype) | Yes | Yes |
| 10. Med Treatment | | | | Unknown? | Unknown? | Unknown? | Unknown? | Unknown? | Unknown? | Unknown? | Unknown? |
| Air Defense (Not required) | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes (Prototype) | Yes | Yes |
| Screening Criteria | | | | | | | | | | | |
| C130 Deployable | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes |
| Survivability | | | | | | | | | | | |
| 7.62 | Yes | Yes | ? | ? | Yes | Yes/AP | Yes | Yes | Yes | Yes | Yes |
| 14.5 | Yes | Yes | ? | ? | ? | Yes | | | | ? | Yes |
| 30 mm Frontal Arc | Yes-W/A | ? | ? | ? | ? | Yes | ? | ? | Yes | ? | Yes-W/A |
| Mine Blast | Yes | ? | ? | ? | ? | 4 lbs | ? | ? | Yes | ? | ? |
| 155 Arty Air Burst | Yes | Yes | ? | ? | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Meets 10 Vehicle Rqmnt for Family of Common Chassis | 0/10 | 5/10 | TBD 5/10 | TBD 6/10 | TBD 7/10 | TBD 7/10 | TBD 9/10 | TBD 9/10 | TBD 9/10 | TBD 9/10 | TBD 9/10 |
| Availability | | | | | | | | | | | |

Figure 3 – Strike Force Vehicle Matrix (From Ref. Strike Force Market Survey brief)

concept. The Army needed to break paradigms about armored combat that had thrived for most of the twentieth century. TRADOC summarized the effort as needing to, "Analyze force effectiveness and organization implications of medium brigade design alternatives at the tactical level within context of Small Scale Contingencies and Major Theater Wars." Their efforts continued on from the studies performed to support the Army's Strike Force efforts from the summer of 1999.

Although not as radical as the restructuring that COL Macgregor called for in his 1997 book, "Breaking the Phalanx," (Macgregor, 1997) the Army will employ some of Macgregor's basic thought processes. I am sure more than one offeror for the BCT acquisition has researched the "Phalanx" concepts in preparing for the BCT solicitation. COL Macgregor called for breaking the Army into deployable "combat groups." Many of the same qualities that COL Macgregor identified for the combat groups are evident in the overarching concepts of the BCT such as, smaller contingency forces that are CONUS based, lower level command and control responsibilities, increased operational and tactical mobility, lethality that dominates a terrain or geography, and brigade sized element self-sustaining operations for increased initial periods (more than 72 hours). There are divergences that senior Army leadership have purposely neglected to consider that generally fall into the "never under my watch category." Macgregor has been somewhat critical of the Army's plans since they did not include enough emphasis on joint service efforts (Inside the Pentagon, 21 December 2000). The Army must therefore strive that much harder to prove that this effort is viable and realistic.

Having described the precursors of BCT above, in the remaining paragraphs of this chapter, I will describe the additional components that make up the transformation and then describe the transformation as it affects the Army as a whole.

## B. INITIAL BRIGADE COMBAT TEAM

The Initial IBCT is the true start of the transformation process. Selected units turned in their heavy armor trappings in 2000, and took on a new role as the transitional force. They literally have been developing new doctrine for the IBCT that employs medium weight systems in place of the M1 Abrams, M2 Bradleys, and M109 Howitzers that they used to own and operate.

### 1. Mission Need

Defining a mission need is not an easy task to accomplish, but is essential to transformation. As described in the 9th ID's experience, the Army did not know what a motorized division should look like, so one, "had to be built from the ground up." (Bowman, Kendall, and Saunders, June 1989). Equipment was selected to support the vision, which of course was purposefully depicted as performance goals rather than dictated as specific weapon systems and components. For instance, the 9th ID (Motorized) was directed by then Army Chief of Staff Gen. Edward Meyer to have enhanced "mobility and significant armor killing capability" (Bowman, Kendall, and Saunders, June 1989). What evolved from that guidance eventually led to the start of the Armored Gun System (AGS). Although the AGS system never was fielded to the 9th ID (Motorized) and subsequently was canceled after delivery of 6 prototypes in 1995, this is

a classic case of form following function as the requirements were derived from identified and validated shortcomings.

### 2. Development of Doctrine

The 9th ID's "how-to-fight" plans were directed by a committee called the High Technology Test Bed (HTTB), which later was, renamed the Army Development and Employment Agency (ADEA). ADEA derived the division's needs into a workable Operational and Organizational (O&O) plan, which received certification through successful completion of an intensive divisional rotation through the National Training Center in 1984. The significance here is that the 9th ID (Motorized) received their certification when surrogate vehicles supported nearly all of their intended "materiel solutions". The cornerstone HMMWV was not to be fielded until 1986 and the elusive AGS was not yet fully funded. In their place, the 9th ID (Motorized) used M882 Dodge trucks and Improved TOW Vehicles (ITVs). It is apparent now, and the senior Army leadership has recognized, that chipping away at transformation is not the answer. Proof is in the principle and according to MG Dubik, the Deputy Commander General for Transformation at Ft. Lewis, Washington, "Where we erred in the Ninth was trying to change the deploying army without changing all the generating systems associated with the deploying army." (Frontline: The Future of War, PBS, October 2000). What fell out of the first five years of development, was a motorized division that contained objective systems for only one of three of its originally derived platforms. In spite of the limitations, the 9th ID (Motorized) became fully operation in October, 1986 (Bowman, Kendall, and Saunders, Page 5, June 1989). Although it achieved some moderate successes at the National Training Center, it failed to achieve transformation of the Army

and ceased to exist after 1989 when the Army deactivated the 9th ID (Motorized) in its downsizing efforts.

### 3. Applied Knowledge

There are a lot of similarities in the approach that PM-BCT is employing and that used by the 9th ID (Motorized) in the late 1980's. The Army's initial IBCT is training right now and is developing its own "how-to-fight" doctrine using surrogate or In-Lieu-Of (ILO) systems. TRADOC now describes this process as developing TTPs-Tactics, Techniques, and Procedures. The IBCT soldiers are identifying, applying, and revising their TTPs routinely to support the evolution of the Objective Force (US Army Transformation Campaign Plan, July 2000). In the process, TRADOC is evaluating the Doctrine, Training, Leadership, Organization, Materiel, and Soldier changes they can make to assist in establishing the fighting doctrine of the BCT (BCT Charter, 2000). TRADOC employed Senior Warfighter Seminars wherein senior TRADOC officers, LTCs, COLs, and GOs, performed analytical and intellectual analysis of the operational environment that the BCT would be employed. They then applied professional military judgment and backed up their experiences with a multifaceted modeling and simulation effort across the spectrum of user representative centers and schools (TRAC IBCT Briefing, 17 November 1999).

#### *a) "Materiel Catch-up"*

While not part of the formal acquisition process, the Initial IBCT is now fully engaged in determining the usefulness of several surrogate systems while they wait for the acquisition community to achieve materiel solutions for several systems. For

instance, they are using systems borrowed or loaned from other countries. There are 32 LAV-III vehicles that the Canadian Army loaned the US Army. In service in the Canadian army for 2 years (experienced with predecessor equipment for more than 20 years), the US Army recognized their potential fit with the evolving doctrine and contacted the Canadian government. The PM was able to work out a deal where they will pay the Canadians for the maintenance and refurbishment of the LAV III vehicles. The US Army is also using Italian Centauro 155 mm self-propelled howitzers as surrogates to explore some of the howitzer requirements (the IBCT is not currently acquiring a self-propelled howitzer).

***b) "Surrogate" Surrogates***

The Army also has shuffled its own resources when deciding upon surrogate systems. The remaining howitzer requirements are being filled using the M198 towed howitzer borrowed from other units while it waits for the Joint Lightweight Howitzer program. Nearly all the Fox NBC recon vehicles in the Army inventory are currently being used by the forces at Ft. Lewis as surrogates for the IBCT's NBC recon vehicle. There are numerous brigade capabilities that are being met through the use of surrogate "systems" mounted on HMMWVs ILO systems mounted on a medium weight chassis. There are also HEMMTs and 5-ton trucks filling in where a lighter weight medium chassis will later be used. These are all examples of the surrogate systems the Army is using while developing its doctrine. As evidenced by previous transformations, most of the surrogates will not remain in the IBCT when it is fully operational.

## C. OBJECTIVE FORCE

Officially, the Objective Force encompasses a force of tomorrow that employs vehicles known as the Future Combat System (FCS). It is what the Army truly wants when it is done transforming from the legacy forces of today, M1 Abram's tanks, M2 Bradley Fighting Vehicles, M109 Self Propelled Howitzers, and M113 Armored Personnel Carriers, through the IBCT and projected in the near future. Concepted originally to evolve from the Science and Technology (S&T) base in 2020, FCS is now slated to show transition in the 2008 time frame with a technology breakpoint in 2003. The significance is depicted in Figure 1 (above) where the bottom arrow depicting the IBCT does not connect to the objective force. There is no guaranteed continuum from the IBCT to the Objective Force. Systems acquired for the IBCT that are used to evolve doctrine may or may not be included in the final Objective Force MTOE. That's not to say they cannot be included, but the Army vision for the Objective Force is much more radical than the integrated off-the-shelf systems that they could acquire for the IBCT. This is not a wheels versus track comparison. This is a program to design a vehicle from the ground up that weighs around 16 tons and that truly defines light weight, more agile, more lethal, more intelligent, more supportable, and more survivable than any known armored system today. FCS was described at their industry day on 11 January 2000 as a, "Network Centric Distributed 'Tank'." It carries the IBCT desired capabilities to push the envelope of modern technology by requiring lofty programmatic goals contained in Table 1 below.

| |
|---|
| • C-130 transportable (<20 tons) (not tradable) |
| • 33-50% Decrease in logistics sustainment requirements |
| • 50% Decrease in fuel consumption |
| • 96 hours rapid response |
| • 5 days OPTEMPO operation without resupply |
| • 100 KPH burst speeds |
| • 60 KPH cross country speed-sustained |

Table 1 – FCS Program Goals (From Ref. FCS Brief, 11 January 2000)

## D. ARMY TRANSFORMATION

Transformation means different things to different people. According to the Vice Chairman of the Joint Chiefs of Staff, Air Force Gen. Richard B. Myers, the real definition of transformation, "is what it will take to be effective in tomorrow's battle space. Becoming what we're not." (Myers, GEN April 2001). Army Secretary Luis Caldera described what the Army would transform into by stating, "We must be a full spectrum force in which every unit is capable of contributing along every point of the spectrum force from humanitarian system to high intensity conflict (Caldera, Army Secretary, 12 October 1999). Transformation includes redistribution of forces, base alignment and closure, an improved integration of active and reserve component forces, and reorganization and redistribution of pre-positioned equipment overseas. It is dependant on dominant maneuver and precision engagement with the lighter more agile, deployable, relevant forces and maintaining a wide array of military options to employ in a crisis (APS 98, Chapter 1, 1998).

While this thesis concentrates on the materiel acquisition attributes of the BCT, the transformation is much more than materiel. It encompasses a balance between readiness, modernization, end strength, and quality of life (APS 98 EXSUM, 1998). Although these words were written in 1997 with regard to Force XXI, the emphasis for the current Army transformation is still relevant. This emphasis is best captured by the Joint Vision 2010 in an operational template (Figure 4) as presented to the Chairman of the Joint Chiefs of Staff in the spring of 1996.

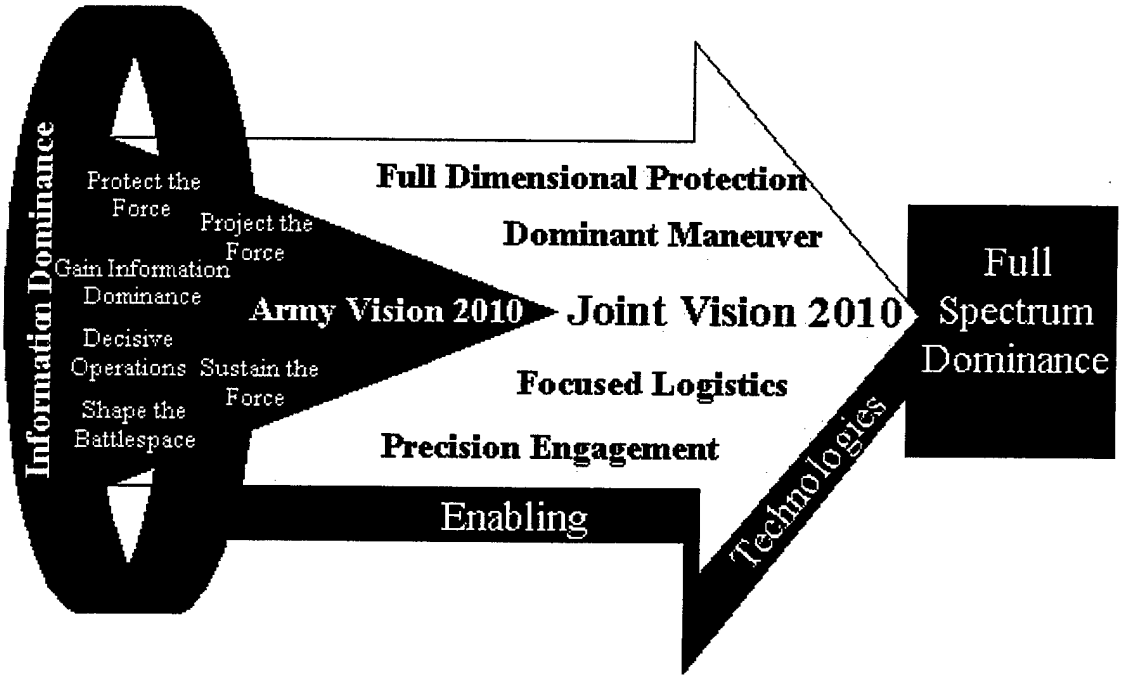



Figure 4 – Joint Vision 2010 (From Ref. Joint Vision 2010, October 1998)

The basic question then becomes, what is the urgency for transformation and why does the Army need to transform? The geostrategic environment has significantly

changed in the last 10 years. Referring to Figures 5 and 6 below, the operational tempo (OPTEMPO) of deployments has increased from 10 deployments over 40 years (Figure 5) to more than 28 deployments in eight years (Figure 6) (APS 98, Chapter 4). GEN Shinseki pointed out in his address to the 106th Congress that from 1989 the Army has further increased OPTEMPO from one deployment every four years to one deployment every 14 weeks (Shinseki, GEN, Statement to the 106th Congress, March 2000).

During these years of increasing OPTEMPO, the Army experimented at transformation without implementation. Instead of moving towards better systems, the experiments were designed to determine which technological direction to move the Army. For example, the Force XXI effort was an interactive and linked series of evaluations, exercises and experiments that was planned to influence the critical decisions concerning the Army's future organization, training, and doctrine (ASP 98, Chapter 5).

To drive the point home I am inserting the statement that LTG Kern made on the day that the BCT production contract was awarded that, "the BCT is not an experimental force." (Kern, LTG, 20 November 2000). The Army, at the time of the ASP 98 (Force XXI timeframe), expected to spend only $1.4 Billion through FY03 on weapon Systems for experimentation. In comparison to experimentation, the PM-BCT expects to pay approximately $4 Billion for the procurement of the IBCT's six brigades of Interim Armored Vehicles and field them to operational Army units.

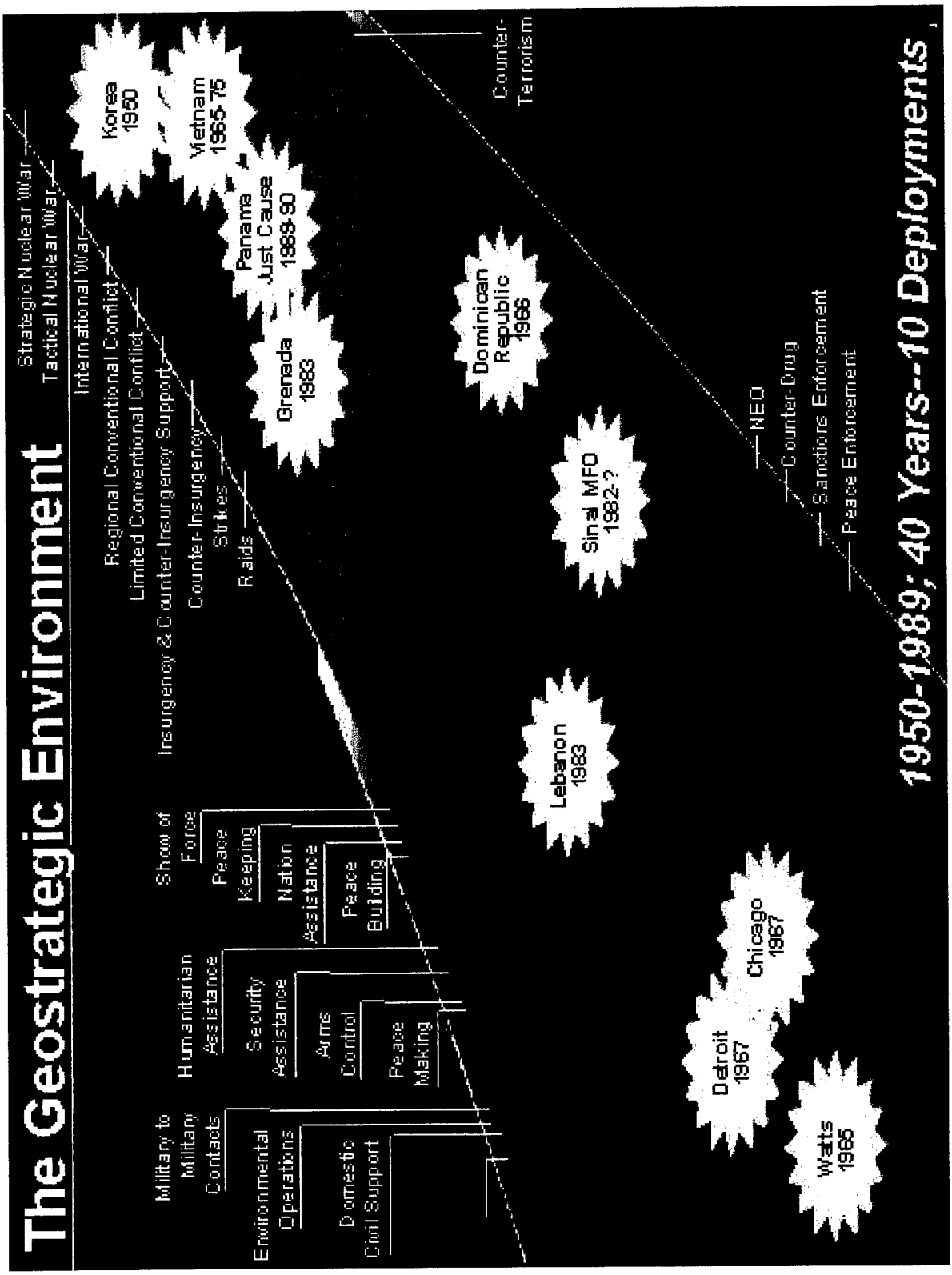



Figure 5 – Army Planned Deployments (After Ref. APS 1998)

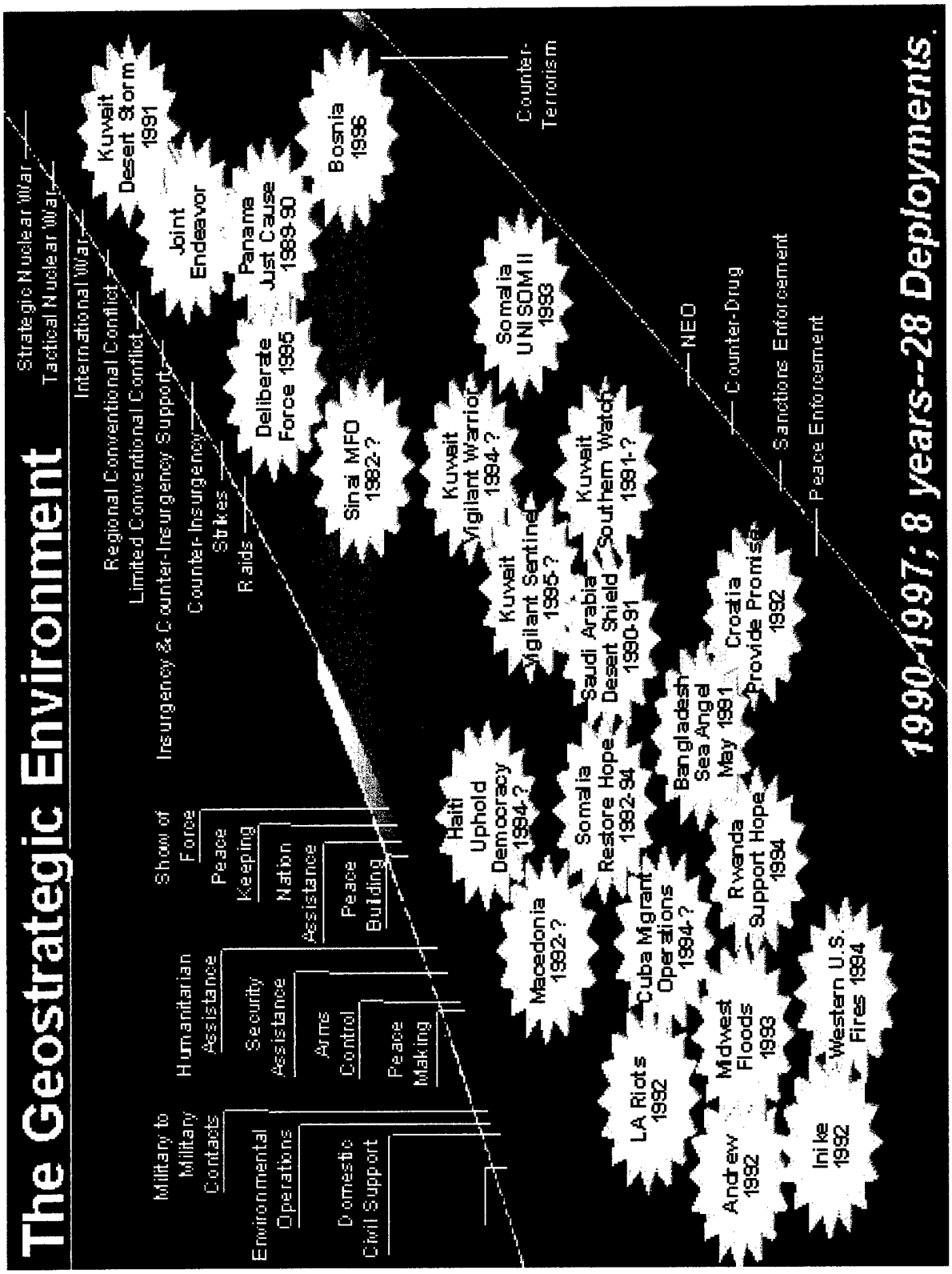



Figure 6 – Army Deployments Executed (After Ref. APS 1998)

GEN Shinseki additionally provided to the 106th Congress that the Army Transformation would include a strategically responsive and dominant capability across the entire spectrum plus would take care of soldiers (civilians, retirees, veterans, and families). He also pledged to still fulfill the Army's ability to fight and win wars. He emphasized 100% strength requirement to the warfighting divisions and ACRs within FY 2000 and pledged to continue to fill the rest of the Army to 100% strength by FY '03. The Army has already started these improvements through the use of more recruiting and retention incentives such as extending tours and increasing bonuses. The CSA also included goals to improve housing, medical care, family programs and modernization of the legacy force (Shinseki, GEN, Statement to the 106th Congress, March 2000). Modernization will include, "recapitalization and fielding of new, already-programmed equipment."

The transformation will include more than just combat arms; which had been described as a primary reason for the downfall of the 9th ID (Motorized) experience in the late 1990s. It will include combat and combat service support assets as well as tactical and non-tactical systems.

The Army transformation will not be complete until the last fielding of the FCS, which is currently slated for 2025 (FCS Industry Day, 11 Jan 00). The critical path for the transformation is therefore rooted in the Science and Technology base. GEN Shinseki stated the Army challenge as developing a, "comprehensive set of technological answers and R&D plans by 2003." Before that final fielding, the Army leadership will

have decided exactly how many FCS brigades it will equip, what the final disposition of the IBCT brigades will be and exactly how much of the legacy forces of today, with selected upgrade and overhaul, will remain in the Army Active or Reserve inventories. What this entails, between now and then, is iterative and recursive applications of CSA's visions, Congressional reviews, Presidential Budget Decisions, science and technology improvements, technology trade-offs, and real-world applications of "distributed" force capabilities that will serve as the Army's baptism by fire. The ultimate goal is to save soldiers lives while simultaneously protecting democracy.

# III. APPLICABLE ACQUISITION REFORM INITIATIVES AND ACCELERATED ACQUISITION EMPLOYED

This chapter is broken in two distinct parts. In the first part, I will describe acquisition reform from a program manager's perspective. I will attempt to portray the latest known evidences of what acquisition reform is and how it is applied in the DoD. In the second part, I will describe which acquisition reform initiatives that the Army applied to the Brigade Combat Team acquisition of its Interim Armored Vehicle program.

## A. ACQUISITION REFORM BACKGROUND SUMMARY

In trying to collect a singular document that encompasses acquisition reform, I quickly understood that one document simply did not exist. When Dr. Perry (then Secretary of Defense) issued his 1994 memo, he not only eliminated most Government Spec and Standards but also started the wheels in motion of an effort that today we call acquisition reform. Acquisition reform, however, is much more than any one initiative or plan of action. Instead, it is a conglomeration of multifaceted processes, tenets, and initiatives that have, in some instances, taken on a life of their own.

I determined that there were two reliable information sources that best define acquisition reform. The most comprehensive compilation of acquisition reform is the Acquisition Deskbook. Published in Internet download and CD distributed versions, the Deskbook contains all the initiatives, tenets, processes, tools, as well as examples of successes and failures, that help define acquisition reform. The second source is

direction from the Department of Defense, as published in directive memos, on how to execute certain aspects of acquisition reform. More recently I learned that the directive that Dr. Gansler published has been even further refined and reprioritized. I will present Dr. Gansler's reform intent and describe how departmental efforts such as the Army's Deskbook guidance fit under his intent. Based on the recent improvements to his guidance I will also show how the Army guidance fits under the latest DoD guidance on the reform focus areas.

In Jun 2000 Dr Gansler, Under Secretary of Defense for Acquisition, Technology and Logistics provided a formal reference set that helps define what the DoD as a whole must do for reform (Gansler, June 2000). His memo was in response to Congressional direction in the form of the National Defense Authorization Act for Fiscal Year 1998. In this Act one particular section, Section 912(c), required the Secretary of Defense to establish a streamlining plan for acquisition organizations, workforce, and organizations; commonly known and reported as 912(c) initiatives. In Dr. Gansler's preface memo, he provided the DoD's best response to the Section 912(c) wherein he stated that the DoD is actively carrying out acquisition reform and provided substantive evidence of progress. He went on to provide an acquisition reform framework in a report titled the "Road Ahead" which defines three primary acquisition reform goals (Gansler, "The Road Ahead", Jun 2000). They are to field high-quality defense products quickly; support them responsively, lower the total ownership cost of defense products, and reduce the overhead cost of the acquisition and logistics infrastructure. These goals are supported

by a concerted effort within the DoD on six focus areas. Individual initiatives and tenets then underpin the six focus areas. The six focus areas include:

- Reliance on an Integrated Civil-Military Industrial Base
- Reliance on Price and Schedule in Design Development
- Logistics on Demand; Agile and Reliable Logistic Processes
- Reduced DoD Acquisition Infrastructure Overhead
- Enhanced DoD Workforce Training
- Continuous Improvement with Systematic Change Management

The Army has also worked towards defining acquisition reform for its workforce and recently provided a representative list of 20 Streamlining Tips that also included "Real Life Examples" of successes (Acquisition Deskbook, Version 3.4, Winter 2001). Although not a comprehensive list, it included:

- Eliminating Specs and Standards
- Electronic Commerce (E-commerce)
- Single Process Initiatives
- Multi-year Agreements
- Streamlining Contract Requirements
- Commercial Test Equipment
- Single Acquisition Management Plan
- Procuring Commercial Items
- Commercializing Contract Requirements
- Alpha Contracting
- Partnering
- New Uniform Contract Format
- Power-down Authority
- Cost as an Independent Variable (CAIV)

In addition to these, two relatively new initiatives have emerged:

- Evolutionary Acquisition
- Time-Phased System Development

In the remainder of this part of the chapter, I will discuss each of the DoD's six focus areas and which of the underlying Army initiatives that support them. I will also include several other applicable initiatives.

### 1. Integrated Civil-Military Industrial Base

This focus area is supported by the Army's top 20 Streamlining Tips such as eliminating specs and standards, procuring commercial items, single process initiatives, commercializing contract requirements, streamlining contract requirements, single acquisition management plan (SAMP), alpha contracting, partnering, new uniform contract format, power-down authority (empowerment), Cost as an Independent Variable (CAIV), and the use of commercial test equipment.

Few Government employees will argue that the elimination of Government specific "how to" specifications was a bad thing. The Army provided five prime examples of cost and schedule saving provided through elimination of "how to" specs that ranged from a 1/3 reduction in the cost of denim overalls to 1/3 savings in the cost of the Abram's Eyesafe Laser Rangefinder. Contractors now are able to apply initiative and innovation that might not have been allowed under previous Government specs and standards. Often the result is the ability of a contractor to deliver a commercial product that meets Government performance standards that comes off-the-shelf at a severely reduced cost and schedule.

Single process initiatives (SPI) are contributing similar savings to the Government. A classic example of SPI was the Army's correction of combat vehicle

heater requirements. In 1991, TACOM set out to fix the combat vehicle heater used in the Bradley and Abrams as well as numerous other combat vehicles. The primary heater supplier at the time had three prime contracts with the Government or its prime contractors. One contract was with TACOM for spare heaters for the field, one was with General Dynamics supporting Abrams production, and one was with FMC (now United Defense) supporting Bradley production. Each contract had similar but not equal requirements. The potential existed, and actual came to fruition, that during lot sample testing, a failure as defined by one contract, could meet another. The TACOM spares requirements were the least stringent behind the Bradley contract, which was slightly less stringent than the Abrams contract. Therefore, a lot sample failure might cause a lot to be rejected for the Abrams contract and still meet the Bradley or TACOM contract. This occurred numerous times until the Government coordinated with its vehicle primes to create one process for lot sample testing. After SPI, the manufacturer had one set of performance standards and one set of lot sampling standards. The requirements were more consistent and the Army got a better product.

Various contracting methods have been employed with varying positive effects on Government contracts: SAMP, Alpha Contracting, Model Contracts and the new uniform contract format. Improvements include tailoring and minimizing requirements and specified data needs wherein all the required program management documents are rolled into a single document. An example: the data item description for the Heavy Assault Bridge took less than 65 pages; such as the reduced PLT was reduced from 22 to four months on the Improved Recovery Vehicle by minimizing and tailoring requirements.

In addition such initiatives as Modeling and Simulation (M&S) in the acquisition life cycle, or Simulation-Based Acquisition, provide parallels to commercial practices. Only in departmental (or uniformed Services') application of reform initiatives can you find the words that depict that "thou shalt" simulate and model for effective acquisitions. The DoD has known for years that risk management, systems engineering, cost analysis, manufacturing processes, component and system design, survivability testing and human factors integration all benefit directly from M&S. The classic educational example is the application of Simulation Based (Sim-Based) acquisition of the Boeing 777 program. Engineers, managers, scientists, and financial wizards all concepted, created, modified, designed, and sold the Boeing 777 using M&S to reduce design cycle time, enhance decision briefings, institute real-time data interchange, and include test and evaluation.

**2. Including Price and Schedule Trade-off in Design Development**

This focus area is supported by the Army's top 20 Streamlining Tips such as incremental or time-phased system development, evolutionary acquisition, increased technical maturity before moving through acquisition milestones,

The key to this list is a relatively new acquisition technique commonly known as evolutionary acquisition, which allows for technical maturity through modularity and future upgrade. This is especially applicable to sophisticated communication equipment that can be purchased as commercial items with open system architectures that allow for block improvement or preplanned product improvement when technology moves to the next level of capabilities.

Technical maturity is also a key facet of the new DoD 5000 series published (DoD 5000.2, October 2000). Technical maturity is a key enabler and milestone decision support item. In other words, a key exit criterion is whether the technology the system needs truly exists. It need not be a negative as technology maturity may provide program entry into the far right of the acquisition cycle based on proven technological maturity

### 3. Logistics on Demand; Agile and Reliable

The Army's top 20 Streamlining Tips such as E-commerce support this focus area, performance based logistics specifications and standards, integrated supply chains, multi-year agreements. Commonly referred to as the Revolution in Military Logistics in the Army, a key facet of acquisition reform is to invest as much in the improved logistics support of the system, or end item, as the Government invests in the system itself. Support items will obviously benefit from performance based specs and standards, but they unfortunately are the least considered. There is a general swing in the DoD today to further consider logistics or support items up front in the system design and development process. A new facet of the DoD 5000 improvements requires that total life cycle costs be calculated and provided as part of the system development (DoD 5000, Oct 2000). From a programmatic standpoint, this is very difficult to refine to any discernable level.

Multi-year agreements or contracts as well as supply chain management are key cost savings enablers for the commercial market place (Womack, Jones, Roos, 1991) but which have proven elusive in the Government for various reasons. The DoD current Under Secretary of Defense for Acquisition, Technology, and Logistics recently reported to the Senate Armed Service Committee that multiyear contracts will, "remain an

effective tool only if the parties to the multiyear contract live up to the long-term commitment they made." Of course, the volatility of the Defense Department budgets and Congressional intervention make long-term commitments difficult to execute and retain (Defense Daily, 27 April 2001).

#### 4. Reduced DoD Acquisition Infrastructure Overhead

This focus area is supported by the Army's top 20 Streamlining Tips such as Streamlined Management, otherwise known as "Reshape," Base Realignment and Closure (BRAC), and best commercial practices. This focus area has little direct impact on an individual acquisition action, but affects all procurements based on DoD strategic goals and patterns.

#### 5. Enhanced DoD Workforce Training

The Army's top 20 Streamlining Tips such as streamlining contract requirements, SAMP, alpha contracting, partnering, new uniform contract format, power-down authority, Cost as an Independent Variable (CAIV) and commercial test equipment support this focus area. I rely here on the computer adage that emerged simultaneous to the first personal computer, Garbage in Garbage out (GIGO). The best initiatives will not execute themselves, let alone effectively. I will touch more on this in the next chapter, but suffice to say that key acquisition personnel must receive requisite training in order to apply acquisition reform. The efforts of the PM for Brigade Combat Team would not have been accomplished if the workforce did not know how to apply acquisition reform initiatives. The DoD has established training goals of 80 hours per employee for

acquisition training and is investigating changes and modifications to the existing program management courses available for the better-than-average acquisition employee.

### 6. Continuous Improvement with Systematic Change Management

The Army's top 20 Streamlining Tips such as partnering, best commercial practices and continuous improvement support this focus area. Similarly described above, the tools are the same, but the application here has a different intent. The DoD intends to, "rapidly implement the business process changes required to better support the warfighter." Essentially, this encapsulates the entire reform process into change management. That is, the DoD and the Army must continue to develop guidance and leadership that not only waves the reform flag, but encompasses reform in its leaders through education, supported empowerment, true accountability, trust, and partnering.

### 7. Common Terms

Other nebulous concepts are also closely associated with acquisition reform even though they are not exclusive to acquisition reform. Terms like Best Value and Best Practices are common in the program management community. They are commonly known and understood, but their application is not easily verifiable or quantifiable. Effectively applied, best value can result in a realistic trade-off between performance, schedule, and cost. Applied ineffectively, the result is contractor selection based on low price determination regardless of the additional performance and/or schedule benefits.

Effective discussions also appear under the common terms heading. The Government has been performing discussions with their offerors for eons. Discussions

take on a new level of meaning with respect to acquisition reform. Tied to partnering, teaming, E-commerce, electronic data interchange, Draft RFPs, Industry Days, Advanced Planning to Industry, Model Contracting and Alpha Contracting, discussions, and their timely application, become the cornerstone of acquisition reform. The key point is that there must be effective communication between the contractor (or potential contractor) and the Government. This is in fact imperative for acquisition reform and underpins the entire process. Communication and mutual understanding of system requirements, capabilities, schedule, items that are or are not Government Furnished Equipment, test requirements, funding limitations, socio-political limitations or enhancements and day-to-day operations are critical to accomplishing improvements in the Acquisition process.

### 8. Communication, Performance Based Requirements and Teaming are Keys to Execution

Advanced planning and acquisition strategies that only include the Government won't achieve the facets of acquisition reform. Communication and information exchanges are therefore imperative to achieve successful program execution. Involving the contractor early in the procurement process has been proven to be beneficial to both the Government and for the contractor through better contract execution from the start and through more effective proposals based on better knowledge of what is being procured. This was evidenced in the lessons learned from the Government's procurement of the Near Term Digital Radio. Through the use of iterative Draft Performance Based Specifications, the contractors had, "a better understanding of the requirement and were able to respond with solutions that in some cases they were already working on as part of

the IR&D programs (Acquisition Deskbook, Acquisition Success Story Number 8, Version 3.4, Winter 2001.)

Communication and performance based specifications were further enjoined by the Under Secretary of Defense for Acquisition, Technology and Logistics in a memo he presented to the acquisition community. In it he described performance-based requirements and allowances for commercial best practices as key to continued successful acquisition reform. In this instance he also wrapped communication into the Integrated Product Team (IPT) process. Published January 5, 2001 it interestingly was published in the same quarter as a recent GAO report describing the DoD's use of IPTs to more effectively execute military acquisition programs. The GAO published their opinion in Draft form Mar 12th and the DoD commented on Apr 9th. The GAO pointed out that, "Integrated Product Teams work." (GAO-01-510 Best Practices, April 2001). The DoD agreed that they could do a better job of implementing IPTs that have "day-to-day responsibility for developing and delivering a product such as a weapon system." (GAO-01-510, April 2001). Its clear that communication, performance based specifications and teaming through IPTs has a significant effect on success of a major defense acquisition.

**9. Applicable Diversity**

To better show the interactions of the DoD acquisition reform focus areas and the Army Streamlining tips, I generated a graphic illustration at Figure 7 below. Acquisition reform is not a silver bullet to magically make every program schedule move to the "left", free up major increments of operating budget, and allow for additional technology

insertion. Further, there is not one singular acquisition reform initiative that will solve all programmatic problems. Referring to Figure 7, however, one can see that the methods to achieve acquisition reform (DoD focus areas) are just as diverse as the initiatives (Army Streamlining Tips).

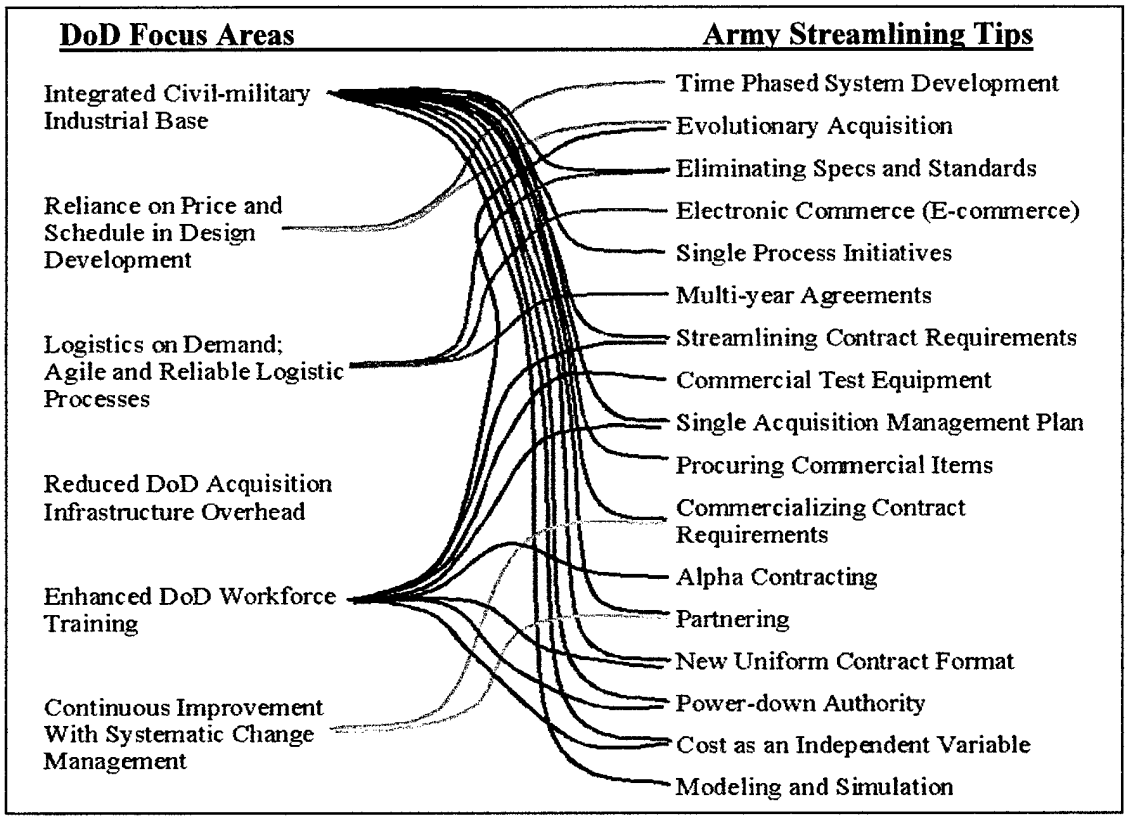



Figure 7 – DoD Acquisiton Reform Focus Areas Connected to Army Streamlining Tips (After Ref. DoD Acquisition Deskbook, Version 3.4, Winter 01)

## B. ACQUISITION REFORM APPLIED TO THE IBCT

I will now look at the acquisition reform initiatives that were employed in the solicitation of the Brigade Combat Team. The PM and PCO first publicly announced Army's intent for an Interim Brigade Combat Team solicitation through a synopsis in

Commerce Business Daily (CBD) on 3 November 1999. According to the PCO, the CBD announcement put industry and interested parties on notice and it specified for them the acquisition preliminary milestones for the IBCT program (Bousquet, Dec 99). The PM and the PCO, went to great lengths to ensure the aggressive schedule they developed (Table 2), still met the DoD and FAR requirements for fair and open competition. As equally affecting and almost certainly more constraining, statute and law must simultaneously be met while executing the program with acquisition reform.

| Date | Task |
|---|---|
| **Jan 00** | **Platform Performance Demo** |
| **31 Jan 00** | **White Papers Due** |
| **29 Feb 00** | **Issue Solicitation** |
| **30 Apr 00** | **Receive Proposals** |
| **30 Jun 00** | **Award Contract(s)** |
| **31 Mar 01** | **First Unit Equipped** |

Table 2 – Significant Acquisition Dates (Source: Researcher)

Although very brief, the announcement had four aspects that included the intent to perform a market survey, notification of the Army's intent to hold an Advance Planning Brief to Industry, the inclusion of a White Paper submittal request, and finally the Army's intent to Competitively procure the Interim Armored Vehicle.

### 1. Market Survey

As a key facet of acquisition reform, PM and PCO first announced that they were conducting a market survey, "...to determine the potential availability of a family (or families) of systems to equip a new brigade organization for full spectrum operations" (CBD Announcement, 3 November 1999). Based on the history of medium force procurements, this latest medium force concept was not new. Taken in conjunction with the CSA's vision statement in October 1999, the defense community quickly took notice.

Not a traditional market survey in the sense that the Government usually asks what is available, this time the Army asked what could the defense industry bring to a demonstration event to show what they had capable off-the-shelf. The key was the capability to deliver a family of vehicles that could perform within the O&O concept that did not require extensive development. Therefore, as part of the market survey, they included details to allow for potential offerors to demonstrate their wares. Commonly now called the Platform Performance Demonstration or PPD, the PMO designed it to, "...assist the Army in refinement of the organizational and operational concept", and they further clarified by adding to this statement that the PPD, "...is not part of an Army acquisition procurement action" (CBD Announcement, November 1999). This is rather important, as Mr. Bousquet, the PCO, emphasized, "The PPD is not graded." The PMO made a very open effort to avoid any confusion on this point. The PM used the PPD only to refine the program goals and objectives in conjunction with our acquisition planning. Early on, some competitors perceived that the PPD was going to be an acquisition "run-off." The PM struggled from the beginning of the process to ensure that this perception did not become a stigma to the program. Through well-publicized efforts the PM was

able to forego the misnomer of "run-off" and ensure the PPD was a demonstration of the market's ability to achieve the drafted performance requirements and not a tool to exclude a contractor from source selection.

An important point to make here is that the BCT program was only four months old when the PPD was to be carried out. In lieu of the market survey to question what "could be" available, the Army wanted to know what "was" available. This is significant because at the same time, the Training and Doctrine Command (TRADOC) was still refining the requirements documents that would be used to baseline the entire capabilities of the BCT. As was identified in the Armor Center memo to industry written to the industry interested parties, the bottom line for the demonstration was to gain observations that, "will assist the Army in refining the O&O concept and, later, requirements documentation" (Bell, MG, PPD memo, 18 November 1999). The memo went on to say that the Army would provide an assessment of each platform provided and that the assessment would include six force effectiveness areas that were identified in the CBD announcement: deployability, sustainability, Manpower and Personnel Integration (MANPRINT), lethality, survivability, and battle field mobility.

The Army would not perform an Analysis of Alternatives (AoA) that would normally drive the requirements process into a materiel solution. Instead, they recognized that a definitive warfighting shortcoming existed that only a materiel solution could resolve. This fact was documented in a very high level "Blue Book" analysis that resulted in the publication of the BCT required Key Performance Parameters (KPPs).

Generated at the COL and GO level, the Blue Book analysis was not provided to the working level and, as is the normal case, has not since been made publicly available.

In a first draft and subsequent follow-on memo describing OSD PA&E's agreement with the Army's efforts to envelope the alternatives, they stated that they understood why the Army had not performed a formal AoA and how the Army had arrived at its conclusions. Where they contended that Army's work was with regard to the development of the KPPs. Although they agreed that the program was, "top-down driven and the analytical work is struggling to catch up." They pointed out that the Army must strive to continue to evolve their analysis to support the Blue Book findings and offered considerable opinion on how to refine the KPPs that were generated. The memo provided detailed account of the KPP rationale and asked pointed questions to the Army with regard to supporting the studies findings. Since the KPPs evolved from the Blue Book analysis, the CBTDEV and MATDEV communities accepted them as being valid. The PM office worked with its industry partners to ensure that the KPPs were achievable within the acquisition timeframe (Q&As, white Papers, and etc.). I will discuss this aspect more in the next chapter.

In keeping with acquisition reform (DoD 5000, October 2000), the number of KPPs were limited. There were five total: C-130 air transportability, interoperability (C4ISR), and capability to carry a nine man infantry squad, with two specific to the MGS, the capability to defeat a standard infantry bunker and create an opening in double reinforced concrete walls. Although not KPPs, the Blue Book analysis also addressed

logistics and supportability requirements, survivability, lethality, Reliability, Availability, and Maintainability (RAM), and mobility considerations that also were interwoven into the Operational Requirements Document (ORD). I will address the OSD PA&E memo in greater detail in the next chapter.

The Program Analysis and Evaluation office at OSD commented prior to the BCT's Army Material Command and TRADOC partnering conference in April 2000 on the validity of the Blue Book Analysis. Their comments included a "recognition" of the level of Army interest, requested additional information on numerous aspects of the Army plans, but ended with a very supportive statement that, "There is a high level of support for the Army vision." OSD went to great lengths to ensure that an executable program was funded in the President's Budget." Through intensive communication with OSD PA&E, the Army was able to move forward in the procurement process.

**2. Advance Planning Brief to Industry (APBI)**

The second item that was called out in the CBD announcement identified the PMO's intent to hold an APBI. The PMO identified that at the APBI, the Army would provide details of the program, with potential desired capabilities. This briefing, as an acquisition planning tool, provided for an open forum dialogue on where the program could go, how it could be designed, and it allowed for the offerors to begin preparing their own strategies. Since the early 1990s, the Army has used the APBI technique to announce all the contracts that TACOM planned to procure for a coming fiscal year. The APBI agenda covered such items as Class IX spares for every major system that TACOM manages and it includes reminders on major system procurements that have already been

announced. TACOM Acquisition Center personnel make every effort to educate industry on upcoming solicitations (IFBs and RFPs) in order to ensure competition. For the BCT, this is an additional procedure that ensures two things for us. First that prudent defense businesses are aware of our intent to buy a system, titled the BCT. Second that those same prudent businesses can now be our collective partners in developing a comprehensive acquisition and as well as help the PM office build a comprehensive new organization. The APBI was held on 1 Dec 99.

Under this same category, informing our industry partners, the PM held a subsequent "industry day" when it announced and held its pre-proposal conference (PM-BCT, Pre-Proposal Conference, 7 April 2000). Intended to be a kick-off for the formal RFP release, the timing for that release became too tight and therefore the PM announced that they would provide RFP insights. The PM's acquisition team did come through when they released the formal RFP the night before the pre-proposal conference. Briefings included updates and insights into the RFP and the performance specification as well as contract structure, Sections L and M as well as Table LM, Logistics, GFE, Bid Sample Evaluation requirements, and security considerations for the program.

**3. White Papers**

In concert with the APBI and the partnering needed to succeed, the CBD announcement included a third aspect that was critical to the accelerated acquisition, the requirement for White Papers. Fundamentally, a call for early assistance from the defense industry, this action was truly a partnering agreement with all involved. The PM asked the defense industry to tell them the most favorable, flexible, affordable, realistic

approaches to carrying out the overarching plan of fielding a new system. Specifically, the announcement asked industry to identify:

> ...acquisition strategy, program requirements, system of systems integration, production capability, product assurance, MANPRINT, C4ISR connectivity, training, logistics concepts, embedded diagnostics, technical insertion, teaming, and opportunities for public/private partnering (PM-BCT, 3 November 1999).

The announcement formally asked for the offerors to identify, in a more formal sense, partnering opportunities. In essence then, the Army asked the offerors to affirm their participation by laying the ground rules that are important to them, before the Army completed its own decision on the ground rules. The Army worked on its own strategies based on acquisition and program management experiences, but having each offeror assess the program from their standpoint, along with the market survey and APBI, allowed the Army to create the ultimate compromise, that would make it difficult to protest. The Army sought a coordinated position from which no offeror could later protest that their ideas had not been considered.

The thought process during acquisition planning included a hypothetical "what-if" drill to help the PM avoid a highly likely protest. The thought process allowed them to war game the outcomes. If for instance, the Army chooses vehicle X, which has A-M capabilities, and if Vehicle Y has those same capabilities but to a lesser extent, then Contractor Y has little grounds to successfully protest. If vehicle Z has the A-M capabilities also, to a greater extent, as capabilities N and O, and also costs more, the best value process may lay grounds for protest. The beauty of the process is that the capabilities the Army desires, the type of contract the PM chooses, and the technical

approach chosen may all be compromises from the collective white papers. The true difficulty from a source selection standpoint would be choosing how to evaluate the various alternative capabilities. What they had was a sliding scale depending on what was generated as requirements and contract deliverables as compared to the actual vehicle designs that the PM saw. Mr. Bousquet, the PCO, summed it up at the time in this way, "through the PPD and white papers, our offerors will see and experience with us." "Together," he went on to say, "we will build a solicitation, which identifies objectives versus [the Army] writing a Statement of Work that contains solutions."

He was right in that the PM received four very intuitive offers representing technologies that at times were at opposite ends of the spectrum with regard to individual requirements. Each collectively met the required capabilities with varying degrees of success and allowed for the Source Selection Authority to select a best value vehicle system solution. As a fall-out of performance specs and standards, an individual requirement may lose its identity when a trade-off occurs. Losing offerors tend to pick out their good attributes and emphasize them back to the Government. They ask why their vehicle wasn't selected when for the one or two particular requirements they were rated superior; were these not significant enough to earn them a contract? The Government is then put in a defensive posture and has to convince others that they did the right thing. I will cover more on this in Chapter IV when I discuss the award protest and its effect on execution of the program.

### 4. Full and Open Competition

The final, or fourth, aspect that the CBD announcement provided was a notice of intent to competitively acquire that BCT systems. This point is required and is important, but pales in comparison to the other tasks identified. The latest changes to DoD 5000.2 encourage market research in addition to the use of commercial products in order to increase competition (Hawthorn, May 2001). In the end, competition is inherent to the program through the other three aspects.

The PMO has made great strides in this program to ensure fair and open competition. Most are minor extensions of the efforts they would take to protect the integrity of any other acquisition program. Early on, several prominent defense manufacturers expressed concerns that the Army has already made up its mind on with regard to which vehicle it wanted since the only successful lease executed was for the Canadian LAV III and that it was just going through the motions (Seffers, December 1999). There was a perception that the PMO was only going to lease one vehicle type and therefore had already settled on the GM LAV III for the IBCT. This was never the intent of the PM and they were able to show their intent for diversity through the lease of several additional vehicle platforms including the Italian-made Centauro. Originally intended as a prototype for the howitzer variant from the original ORD, the Centauro has been a participant since the summer of 2000.

As described in Chapter II, the use of leased vehicles supplants a drawn out comparative analysis but more importantly adds definition and validation to the O&O for the IBCT. Through the use of the GM LAV III and the Centauro, the PM can borrow

tactical and procedural baselines from the Canadians and potentially the Marine Corps. The PM is entertaining the idea of extending the leases for additional time beyond the original contract in order to focus on the fielding and NET processes as well as add additional familiarization assets to the Brigades at Ft. Lewis while they are receiving their IAVs; there will be an expanded description of this in Chapter IV.

Mr. Bousquet, the PCO, characterized the vehicle leases in general as smart business from the standpoint of competition, as well as upholding the fairness issue. The more systems the PM puts into soldiers' hands, the better tactics and procedures that will be built. The more systems that the Army experiments with, the more they will learn what works and what does not, thus resulting in a better acquisition. The PCO further stressed that the emphasis to improve the requirements was from the white papers even though most perceive it was the PPD and the vehicle leases. Just like the "bird in hand" proverb, the systems demonstrated performance during the PPD and trained on through the lease programs would carry much weight especially in the media. The Army, more particularly the PM, will have a difficult time juggling public and congressional perceptions that are formed during the PPD. The PPD is the showcase, as has been discussed; the white papers will be like a "warranty". As a final note, an offeror need not participate in the PPD in order to submit a white paper. The PM, therefore, needed to de-emphasize the PPD through effectively employing the collective knowledge gained through the white paper process.

### 5. Fast Track

To add some positive light to a seemingly muddy process, the Ballistic Missile Defense Office (BMDO) has successfully used a similar, albeit smaller scale, version of the partnering process (Reuter, July 1999) described above. Their term for this process of accelerated and partnered acquisition planning is "Fast Track." They have had their contractors helping them design their acquisition programs since 1997. They pointed out strikingly similar practices such as, early identification of the requirement, limiting proposal data submissions to only those that are significant and best value, and accelerated acquisition through concurrent actions. They claimed significant time and expended resource reductions through this process that also resulted in fewer disputes.

One key item they pointed out in their process was discussions before solicitation. The absolute must in this matter is that the discussions are not part of the acquisition and they are not graded, or evaluated. The BMDO identified up front to their offerors that any question or comment on the RFP would be provided to all offerors and the originating offeror would then be given the chance to rescind the question before the Government responded. The article cautioned, and Mr. Bousquet agreed in principle, that early discussions in the non-binding sense could be effective in avoiding confusion and ambiguities in the solicitation. The article went on to say that they considered the discussions to be presolicitation activity covered under FAR 15.201. From a common sense point, this is what the acquisition community does with Draft RFPs and presolicitation conferences, to promote an understanding of the requirements that avoids confusion. Perhaps this should called open dialogue rather than discussions.

### 6. Draft RFPs

The PM office employed three iterations of the Draft RFP process. The first Draft RFP was released in December of 1999 (RFP, 1st Draft, 30 Dec 1999). Quickly put together by a handful of TACOM engineers, contracting and logistics experts, it did not represent much more that the best information available on the brigade combat team's intended mission requirements. A detailed performance specification and Statement of Work (SOW) did not exist. The original acquisition strategy had included the use of a Statement of Objectives (SOO). The PM had intended to allow for the most flexibility possible for offerors but realized that reduced time of the solicitation would be better suited to the structure and detail provided in a SOW and performance specification, thus laying the groundwork for the offerors to tailor as they saw fit. TACOM took questions and provided answers (Q&As) but, as they had instructed the offerors up front, they provided answers back to the community in an open forum thus providing the most effective use of time and resources to eliminate redundancies. Numerous Q&As to the first Draft RFP were quickly posted to a public access ".mil" web site as part of TACOM's Acquisition Center. The 2nd Draft RFP took into account the questions asked and the answers given that improved the RFP.

The second Draft RFP followed soon after the Christmas holidays and included a nearly complete replacement of the original SOW and performance specification. The Final RFP release occurred on April 6th, 2000. Published on the eve of the final contractor and Government interchange meeting at TACOM.

### 7. Source Selection

This brings us to the all-important Source Selection process, which supported everything that had been done to this point. Although the actions of the SSEB, SSAC, and SSA are outside the scope of this thesis, the source selection methodology has some aspects of acquisition reform and is worthy of mention here. Originally intended to be an accelerated process, the Formal RFP was released on 6 Apr 2000 and proposals were due on 6 Jun 2000. The SSEB was to meet and make their decision by the end of Aug 2000. Due to unforeseen complexities and necessary adjustments to the schedule, the formal SSEB evaluations were provided to the Source Selection Authority in Oct 2000. His decision and announcement was made on 16 Nov 2000. This was a mere 14 months since the Chief of Staff had made his formal program announcement.

Made up of subject matter experts (SMEs) from DoD, Army, Air Force and Contractors, representing multiple functional areas, the SSEB contained more than 150 personnel full and part-time (PM-BCT brief, April 2001). What they evaluated were four offeror's proposals that represented from one to three iterations for each proposal. The solicitation was broken into two potential parts that allowed for up to three methods of award to any one offeror. The solicitation provided for awards for the entire IAV family, the ICV and its configurations, and the MGS standalone. This was intended to maximize the ability of an offeror to propose against portions of the entire program and thus maximize competition and reduce risk to the Army. Other aspects of the solicitation counter-balanced the split award option to some extent by encouraging maximum commonality between the ICV and the MGS, but would not eliminate a competitor.

### *a) Bid samples*

One significant event that supported the accelerated schedule was the Bid Sample Evaluation event. Prototype bid sample vehicles were delivered to the Aberdeen Test Center (ATC) simultaneously with the submittal of formal proposals. Designated to be production representative, allowances were made for the speed of the proposal delivery for hand built vehicles. The bid sample vehicles were ICVs since they are the mainstays of the IAV program. Each offeror provided two bid sample ICV vehicles that were then designated by ATC as Performance and RAM. The performance vehicles were taken through representative performance specification tests of mobility, C-130 test loading, and fuel economy tests while the RAM vehicles were run through as many RAM miles as possible in their brief stay at ATC.

The reason for the Bid Sample Event was not to replace the need for an offeror's proposal but was designed to allow them to prove out some of their capabilities through physical demonstration and thereby reduce the program risks. The SSEB did not use bid sample data, in and of themselves, to perform evaluation or comparison of an offeror's proposal. Instead, the data collected were used to validate proposed capabilities or to assist in establishing risks to capabilities proposed. The new DoD 5000 requires a "fly before you buy" demonstrated technology decision before entering into LRIP at Milestone C (DoD 5000.2, Oct 2000). The Bid Sample evaluation performed this function quite well, as I will describe on more detail in the next chapter.

### *b) Items for Discussion and Formal Discussions*

In conjunction with formal SSEB procedures, TACOM performed both written and oral discussions with the offerors. Above, I mentioned that the PCO was cautious that early in the process the Government would partner and involve the offerors to help define and refine system requirements. In the SSEB process, discussions are intended to ensure both that the offeror understand the Army's requirements, given a certain aspect of their proposal and that the Army was interpreting the offeror's proposal correctly. This is a very effective tool for avoiding confusion and is not necessarily a reform tool, but goes along with the concept of open dialogue and communication that lowers the risk of problems throughout the procurement process. In all, there were more than 400 IFDs submitted in multiple iterations at times and the offerors were included in face-to-face as well as telephonic discussions numerous times during the SSEB process.

All the IFDs were transmitted via e-mail attachments and responses were received likewise. Few exceptions existed except where response files were too large to transmit over the Internet; in those situations, fax and floppy disks were used instead. Solicitation changes that occurred during the source selection process were also posted on the TACOM procurement web page as described above. A rolling change policy was used and formal responses to IFDs were considered proposal revisions. This policy was employed throughout. TACOM did not require the offerors to resubmit in response to the Final Proposal Revision notification except for those aspects of their proposals that needed revising. Although not paperless, the IAV SSEB made every attempt to eliminate paper waste.

### 8. Contract Award

Ultimately, the source selection was based on the submitted proposals and revisions and not on lease vehicle data, PPD, white paper submittals, nor bid sample evaluation. Each of these efforts contributed to the refinement of the Government's requirements and the Contractors' proposals but was not directly reflected in the evaluation of the proposals unless a specific item was identified as supporting data in a contractor's proposal. The ensuing congressional notification pointed out that there were 109 proposals solicited including sub-contractors and 20 proposals received. (Congressional notification, IAV Award, 16 Nov 2000)

# IV. ANALYSIS OF THE ADVANTAGES AND DISADVANTAGES OF ACQUISITION REFORM AND ACCELERATED ACQUISITION

This chapter is intended to deliver a qualitative assessment of acquisition reform and accelerated acquisition as applied to the procurement of the Interim Brigade Combat Team (IBCT). Where available data exist, I will also provide quantitative assessment. Due to this procurement's unique characteristics, there are few comparable programs that ever moved as fast or were as large to provide relative quantitative comparisons. Therefore, I will analyze the facets of acquisition reform that were employed and provide qualitative assessments with indirect comparison. When available, I will also provide quantitative assessments with direct comparison to similar programs. To provide continuity, I will analyze the acquisition reform facets in the same order as Part B of Chapter III.

To further facilitate the comparisons, I will break the chapter into two parts. The first part will entail the time frame from program initiation in October 1999 through the release of the formal RFP in April 2000. The second part will look at the source selection process from the receipt of proposals through contract award in November 2000. This ignores the 60-day period from the release of the RFP to proposal receipt.

At the end of this chapter, I will provide a summary of the protest filed against the contact award and the GAO response. I feel that this is worth discussing in the context of the effects of acquisition reform on the process of the award determination. Due to the limited amount of publicly available data, this discussion will be short.

## A. REQUIREMENTS DETERMINATION

This area focuses on the program management acquisition reform activities that were employed from program initiation through to the release of the formal RFP. I patterned the respective Chapter III sections on the 9 November 1999 Commerce Business Daily announcement that contained four parts, Market Survey, Advance Planning Brief to Industry, White Papers, and the intent to use Full and Open Competition for the program. I will use this format again but will add additional acquisition reform results that came out of the PM's efforts. As an audit trail, most of the initiatives that the PM employed stem from six of the Army Streamlining Tips that I presented in Chapter III Part A. The connection is through the Integrated Civil-military Industrial Base as supported by good communication, performance based requirements, and teaming. The six acquisition reform initiatives most effectively employed by the PM office were:

- Streamlining Contract Requirements
- Procuring commercial items
- Partnering
- Cost as an Independent Variable
- Eliminating Specs and Standards
- Electronic Commerce

### 1. Market Survey

A significant contributor to expediting the process and refining the requirements for the BCT came from data collected leading up to and through the Platform Performance Demonstration (PPD), which was conducted in January 2000. The call for offerors to attend and demonstrate their vehicles at the PPD came from the CBD announcement. The key restraint came from the time frames identified in that

announcement. The intent to deliver a vehicle and participate had to be provided by 13 November 1999 with the vehicles to be delivered by 13 December 1999. This is fully in line with the pace established for the program and falls within the intent, specified in Section M of the RFP, to purchase systems that did not need, "extended variant/configuration development programs." Extended development was defined as efforts requiring, "approximately 24 months or longer of development...to complete [SDD]" (RFP DAAE07-00-R-M032, 6 April 2000). Asking for representative systems and not receiving a response from industry would not have been fatal to the acquisition, but certainly would have slowed the pace. Companies from the military industry came through and proved that they were capable of delivering medium weight systems as they had been advertising.

There were 35 systems that were delivered and demonstrated at the PPD at Ft. Knox, Kentucky. Referring back to Figure 3 in Chapter II, the Army's literature style market survey as completed for the Strike Force project in 1998 quite accurately predicted the type of vehicles that would be delivered to the PPD. In fact, five vehicles from four manufacturers were identified as candidates for the Strike Force effort and were eventually offered as candidates for the IAV program in the 17 proposals received. Included were the M8 AGS and the M113A3 from UDLP, the Hagglunds CV 9030, the AV Technology Pandur (offered by GDLS), and the LAV III from GM of Canada. The M113A3 was superceded by UDLP's MTVL, which is essentially a stretched version of the previous. The Hagglunds offer for the IAV contract was deemed unacceptable by the SSEB.

I must include a clarifier about the PPD as there are still many misperceptions. The demonstration was not part of the Army's procurement action for the IAV according to all documents presented to the media, the offerors, and all Army briefings (as well as anything else having to do with the PPD). Army Public Affairs literature provided to the offerors established the following two points (TRADOC IBCT Handout, 1999). First, the purpose of the Ft. Knox demonstration was to assist the Army in the refinement of its O&O concepts for the Brigade Combat Team and to refine the ORD for the IAV. Second, the Army's evaluation of industry equipment participating in the Ft. Knox demonstration would be disclosed only to the firm whose product was evaluated and would not otherwise be publicly disclosed.

The PPD had two primary parts that occurred on both ends of the Christmas holiday, 1999. Part I lasted from 13 – 20 December 1999. In this part, the Mounted Maneuver Battle Lab at Ft. Knox received the vehicles that were to be demonstrated and performed a litany of non-operational tests on the vehicles and key driver and operator training to support the second part. Non-operational testing included basic dimensional data such as combat weight, empty weight, length, width, and height as well as tread contact pressure or wheel point and axle loads. Operational assessments were performed during this part as well, to include such areas of emphasis as maintainability, supportability, and safety. The Army also sent in 70 experts from RDT&E, combat and tactical vehicle, ordnance, and ammunition areas to assess vehicle technology insertion candidates to support the P3I and block improvements planning for the IBCT. The Army

had to accept the capabilities of the vehicles without performing a protracted engineering and development effort. They employed time phased system development in that they planned block improvements to the systems for technology insertion. This supports the Army's desire to deliver a capability today, revise its doctrine and war fighting plans, and then reset the needs of objective force.

Part II was initiated on 3 January 2000 and concluded on 18 January 2000. The vehicles were put through operational demonstrations that included mobility, lethality, and operability characteristics including on and off road driving, swim, MOUT maneuverability and live fire demos. All the data collected was used to support or refute the operational characteristics that TRADOC had included in its Draft ORD so that the PM office could move forward with the Draft RFP process. Contrary to many media views, this was not a "run-off or shoot-off" and was not a comparison between wheeled and tracked systems to determine how "low" to set the required capabilities in the ORD to ensure that wheeled systems can compete (Newman, March 2000). It was carried out as an operational market survey expanding on the traditional paper, historical, or literature market survey that is normally conducted. Again, the PPD was not a competition and all the data collected was provided back to the respective offeror only.

As an aside and although it was not timely enough to support the accelerated acquisition efforts, similar test and evaluation of vehicles is still going on at Ft. Lewis. I include this description in order to be perfectly clear that this effort was not part of the Army's acquisition process either. The objective at Ft. Lewis is to use alternative

vehicle, loaners, and surrogates to develop and further refine tactics, techniques, and procedures for a U.S. force to be equipped with the family of IAV vehicles. This testing and iterative evaluation could possibly continue through the next several years by extending the vehicle lease and borrow arrangements (PM-BCT WSAR, 25 May 2001).

**2. Advanced Planning Brief to Industry (APBI)**

Serving as the initial brief that put industry on notice, this meeting set the pace for what the IBCT would do for the next 18 months. There were over 400 attendees present when the PM office expected only 250 or so offerors. The accommodations were standing room only, with people watching from the halls.

With the recognized need for follow-on face-to-face discussions with industry, and with the formal release of the RFP looming, the PM office held their pre-proposal conference. One hundred fifty eight people attended with 131 being contractors and 27 being Government employees. Over 60 companies were represented of which 49 were U.S. and 11 Foreign. Not only did the PM staff present an update on the RFP and announce that it had been formally released the night before, they also took in more questions. Some of the 186 questions identified below, as being as submitted from industry and answered by the PM, included questions collected during the pre-proposal conference.

While its difficult to tie quantitative improvements to symposiums and briefings, the qualitative benefits included better communication with the offerors, which contributed to their better understanding of the RFP and the performance specification.

### 3. White Papers

The white papers submittal was intended to provide substantive improvements to the requirements and the RFP through open format dialogue with industry. While not as explosively revealing as the PM had hoped, the white papers provided an important output and a significant outcome. The output was an affirmation of the requirements that the PM and TRADOC had already generated. That is, that the requirements generation effort to date had been "on the mark" with what industry was capable of. The outcome was more significant in that a definite acceleration of the requirements generation process had occurred especially in the area of market research. Although this is a facet I have already analyzed, I have kept the white paper analysis separate for continuity.

In all, the PM received 199 white papers from industry and Government. There were 138 U.S. Industry, 14 U.S Government, 45 Foreign Industry and two Foreign Government respondents. Of these, there were 64 Total contractors, which included 49 U.S. and 15 Foreign companies representing 11 countries (PM-BCT Acquisition Strategy update, 9 Feb 2000).

The white paper responses varied from substantive suggestions with specific aspects of the RFP in mind, general comments on the program as a whole, down to product marketing sheets that provided no clear input. The white papers were reviewed by a special team of Government acquisition experts with backgrounds in design engineering, engineering for production, acquisition, contracting, product assurance and

test, configuration management, cost and systems analysis, contract management, and test and evaluation.

The PM office's team summarized the substantive comments in the following eight concerns. First, there was obvious schedule risk, which they all recognized as being based on the expedient nature of the program. Some indicated that there may be significant difficulty in producing the quantities and mix of vehicle configurations in the time frame required. The recurring theme was that anything other than pure "unmodified" off-the-shelf systems would be very difficult to produce without this significant schedule risk. This limitation was highlighted in several periodical articles including one such article in *Inside the Army,* (Burger, January 2000) where the author wrote that the amount of time needed to achieve the required ramp up from initial capability to first unit equipped would "take considerably longer".

The second concern was that there was no clear logistics concept. Their expectation was that the Army would specify the typical logistics regime using MIL-STD format. Some were surprised by the lack of detail and by the allowance of freedom to pick a method of support. The approaches, therefore, ranged from pure and traditional Government logistic support to pure Contractor Logistic Support (CLS). The PM office would eventually identify a more structured approach with definitive elements of both classic Government provisioning and CLS support.

The third concern was much more pointed. Several of the respondents were concerned that the requirements were skewed toward wheeled solutions while sacrificing mobility and survivability. The main contributing factor here was "perception as reality." The media coverage as well as the Chief of Staff's own words early in the development of the program tended towards a wheeled vehicle solution. The CSA stated more than once, before he even announced the program officially, that the Army needed a lighter and potentially wheeled force capable of sustained operations off of the tail-ramp of an aircraft such as the C-130. His statement in his 12 October 1999 speech to the AUSA symposium seemed to lean towards "wheels."

In the follow-on press conference that he and Army Secretary Caldera gave, he solidified his true intent, which was to investigate whether industry had taken wheeled technology far enough along in capability to move to a wheeled combat vehicle fleet (Shinseki, GEN, October 1999). His words included a reference to the advancements in the commercial market with regard to wheeled technology. He further went on to say, "there is great capability, technology-wise, to lessen the weight of our vehicles." Together, wheeled technology and weight savings could support the Army asking itself about, "moving to wheels and away from tracks." When asked how long it would take, GEN Shinseki replied that he didn't know, but that the Army had a responsibility to ask itself that question and that he hoped that it would be, "much sooner, rather than later."

If one were only paying attention to the speech without considering the interview that followed, he could perceive that the CSA's intent was to replace all combat vehicles

with wheeled vehicles right now without looking at the trade-offs. Many in the media interpreted his speech this way and there were tremendous debates that raged for months following. Newspaper and periodical articles appeared over the next year that both supported and decried the CSA's intent. Supporters pointed out the limitations the Army faced in deploying into Kosovo with Task Force Hawk and the effect on operation Task Force Ranger (Operation Restore Hope). In Kosovo, the Army was criticized for not being able to deploy quickly enough to have been a real threat and in Somalia, Army Rangers were rescued by US Forces using borrowed Malaysian Condor 6X6 vehicles (supported by Pakistani's Vietnam-era M-60 main battle tanks) (Bowden, 1999). Those opposed to GEN Shinseki's direction, object to medium forces for numerous reasons ranging from too light and perceived poor off-road mobility to the lack of sufficient lethality and survivability. (Army Times, "Wheels Vs. Tracks", February 2000)

The debate carried over into the white paper process also, but more critically carried over into the legislative branch of the Government. Congressional interest picked up and eventually the Senate Armed Service Committee established a rider on the FY '01 Defense Spending bill relative to answering the wheels versus track debate. The rider establishes that the Army must perform a Comparative Evaluation (CE) to take place before more than 20% of the total BCT budget can be obligated. I will provide more on the CE in Section 7 below.

The fourth concern raised was that the requirements seemed to be precluding an off-the-shelf solution. The team reported that several of the offerors expressed concern

over the multitude of requirements that had to be met. In essence, no system would be capable of achieving all of the requirements without going through a developmental effort since the Army "loaded up" its requirements, which entail more risk. The PM office provided a prioritized performance banding matrix, RFP Attachment 16 (RFP DAAE07-00-R-M032, 6 April 2000) that allowed for trade-off of "Banded" requirements versus time. It was an objective matrix in that it provided that all requirements had to be met over time. KPPs had to be met immediately, Band 1 and Band 2 as well as unbanded requirements had to be met by the fifth brigade fielding.

The fifth concern dealt with a general misunderstanding of the significance of the source selection bid sample. Often referred in the press as the "drive-off, shoot-off" of the delivered systems, there was a general misunderstanding of what would actually occur and how the results would be used. This is very similar in character to the PPD perceptions in the discussion above. The bid sample evaluation was not intended to replace any aspect of the offerors' proposals. In fact, it was described as a demonstration of capability and was specifically limited to the ICV configuration in order to keep the evaluation simple and to ensure that the it could be completed in a timely manner.

The sixth concern established that partnering would be critical to the success of the program. The Army agreed and had been working to include partnering requirements in the RFP. Based on the comments received, partnering was well taken. As pointed out in a recent GAO evaluation of partnering in the Department of Defense, there is still much to be done in terms of effectively applying teaming, partnering and IPTs. The

Executive Summary of the RFP identified the requirement and provided a web link to the "AMC Model Partnering for Success Process" website (RFP DAAE07-00-R-M032, 6 April 2000)

The seventh concern addressed the apparent need for a systems integrator. Deemed either Government or contractor, the intent was to tie in the vehicle production, fielding and training of the IAVs with the force integration and transformation efforts involving existing equipment; the team accepted the recommendation.

The eighth, final, summary concern was based on the expressed lack of a definition of First Unit Equipped. Tantamount to proving the success of the chosen contractor, they recommended that the definition include quantities of variants and timing, since there is an obvious impact on the offerors' ability to meet the required timelines. OSD PA&E also identified this shortcoming in their review of the Blue Book analysis. My assessment of the impact of the Blue Book analysis and how the PM resolved the issues is provided in Section 6 below.

**4. Full and Open Competition**

The original Commerce Business Daily announcement emphasized that the solicitation would include full and open competition. To ensure this, the PM used the market survey information in conjunction with the industry day attendance and inputs, to identify candidate contractors that seemed to be capable of meeting the program requirements as they existed at the time. A number of additional efforts were included in

developing the RFP that are not necessarily acquisition reform but part of intentional acquisition practices.

As a result of the full and open competition there seemed to be a hesitation up to the point of proposals for any one potential offeror to publicly state that they could not fully meet the requirements of the RFP. More specifically, no offerors requested an extension of the RFP proposal deadline even though there was only 60 days to submit. This is highly unusual for major programs (Spitzbarth, 25 May 2001). In other words, no one wanted to tip their hand to show what they were "not" capable of for fear that a competitor would use that weakness against them in their proposal. Even though there were 612 questions answered as part of the Q&A process (more on this in Section 5 immediately following), not once did a prospective offeror state they could not meet the Army's timeline or requirements. Even levels of risk were not substantiated publicly. Only in the white paper process did any potential offeror provide comments critical of the requirements, timeline and associated risks (reference Section 3 above).

**5. Draft RFPs**

The PM office developed its first draft performance specification in early January 2000. In order to ensure the best trade-off occurred, PM-BCT established a weeklong review of the performance specification and invited the responsible TRADOC schools to participate in a working level review of the requirements. Although not a final look at the requirements, each of the schools was encouraged to come prepared for one final discussion of the requirements trade-offs before release of the first Draft RFP. Each of

the participants, combat and materiel developer alike, knew that changes would be scrutinized and therefore seemingly kept their comments to a minimum except on those requirements that they felt were worth their "falling on their sword". This is part of the "good and bad" aspect of intensive management. It was good in that the process was quite effective at communicating the most comprehensive and balanced set of requirements for the IBCT. It was bad in that it may not have been the most efficient method to reach the same end point. It was time efficient, yes, but not have been the most efficient use of available human resources since the requirements were so intensively managed and were fairly solid at this point in the process.

The PM office posted the first Draft RFP on 30 December 1999 along with an initial version of the ORD (RFP DAAE07-00-R-M032, 30 December 1999). There was a rush to post the documents before the end of the calendar year and the documents were not of high caliber and were not comprehensive. The RFP was published as a Statement of Objectives (SOO) to allow the potential offerors maximum latitude to help the PM office refine the requirements. The PM quickly realized that the use of a SOO in this instance would not be sufficient, due to the complexity of the program and the severe time crunch the offerors were asked to work under. More detail would have to be provided.

Industry responded to the PM's request for comments to the First Draft RFP. There were 221 questions submitted by industry that were then answered by the PM office. The Q&As were published on the TACOM acquisition web page. The PM

encouraged the offerors to ask any and all questions with the understanding that any question asked would be consolidated with others, answered and posted in a common web launch on the TACOM web page (1st Draft RFP, Statement to Offerors, 7 Mar 00). Answers came in three forms; those that clarified without need for modification to the RFP, those that clarified with need for minor modification to the RFP, and those that change requirements in the RFP completely and which were then added into the next submittal. The Q&As were posted to the web page as soon as a block of answers was completed and approved (as opposed to waiting for all answer to be completed). Approval consisted of a chain of key RFP persons including the technical expert, a contracting specialist, a TACOM lawyer, the PCO and the PM.

With the Q&As in hand, the PM office then proceeded to modify the RFP, including the performance specification, and prepared a new submittal to industry. A new version of the ORD had also been posted with the First Draft RFP and the ORD necessitated changes to the performance specification as well. An interim version of the ORD was posted to the TACOM web page on 31 Jan 2000, which included significant changes. Of note was the solidification of the number of configurations and variants to 11 vehicles. The number would be further pared to 10 when the Army determined that the technological leap to achieve a 155 mm Howitzer variant would be too great a challenge. The Howitzer variant is still an ORD requirement, but the Army has settled on a towed howitzer in lieu of a self-propelled model. In order to minimize the confusion, each time a document was submitted it was posted with a date "stamp" on it.

At the end of January, the PM office completed its first performance specification. Following intensive coordination with the user community, the Army published it and provided it to industry on 10 March 2000 as an attachment to the Second Draft RFP, which now included a Performance-based Statement of Work (SOW) (RFP DAAE07-00-R-M032, 10 March 2000). In comparison, Section C of the SOO was 3 pages long when it was originally posted in December 1999. The new SOW contained a Section C that was 30 pages long and had numerous attachments that provided additional data and format requirements.

When the PM office posted the Second Draft RFP, industry once again answered. There were 205 questions submitted to the Second Draft RFP, which covered 52 pages of text when down loaded. As before, the PM office answered and posted the Q&As to the acquisition web page in blocks of answers, as they became available. Due to the intensive management, as described above, the PM dictated that there would only be two draft solicitations. Any changes resulting from the Second Draft RFP would be rolled into the final, or formal, RFP on 6 April 2000, which was literally only weeks away. The changes incorporated also contributed to streamlining the source selection process and I will provide more on this aspect in Part B below.

The Final RFP revision contained input from over 30 companies representing 9 countries that covered the entire contractor spectrum from prime vehicle manufacturers to the lowliest supplier. Questions ranged from, "why aren't you buying a howitzer with

this program?" to "what is a glad hand?" The numbers of Q&As per Draft RFP and ORD version are shown below (Table 3).

| Numbers of Q&A per Draft RFP and ORD | | | |
|---|---|---|---|
| Major Web Page Revisions | RFP | Q&As | ORD |
| 1 | First, 31 Dec 99 | 221 | 31 Dec 99 |
| | | | |
| 2 | | | 31 Jan 00 |
| | | | |
| 3 | Second, 10 Mar 00 | 205 | 08 Feb 00 |
| | | | |
| 4 | Final, 06 Apr 00 | 186 | 06 Apr 00 |

Table 3 – Numbers of Q&A per Draft RFP and ORD (Source: Researcher)

A key component of the entire ORD process, which provided for a faster output, was the constant communication and cooperation between TACOM as the materiel developer and TRADOC as the combat developer.

COL Schenk provided the following keys to the success of the program from the aspect of MATDEV and CBTDEV cooperation when he spoke to acquisition students at the Naval Postgraduate School (Schenk, COL, May 2000):

- Constant Communication
- IPTs Assure O&O, ORD, Specification and SOW Consistency
- PM Involved in ***Their*** Activities
  - O&O Development
  - ORD Preparation
- TRADOC Involved in ***Our*** Activities
  - RFP Development
  - Source Selection

- PM Personal Reviews with GEN Abrams
    - Transformation Conferences
    - ORD Development, 19 Jan 00
    - ORD Finalization, 24-26 Jan 00
    - ORD to Spec Crosswalk, 10 Feb 00

**6. Fast Track**

Important to re-insert here is just how the program was started. On 12 October, 1999 when speaking at the AUSA fall symposium, the Army's Chief of Staff, GEN Shinseki, stated that his vision was based on a lighter, more lethal, faster deployable, more highly mobile force that can arrive anywhere in the world within 96 hours (Shinseki, GEN, October 1999). What followed was a massive reformation effort within the Army acquisition community to develop a program to meet his vision. A common quote from the PM BCT office came from COL Schenk when we spoke to the TACOM community as they developed the program, "Remember just who the Chief Engineer on this program is." What he meant was that GEN Shinseki was very interested and involved in the acquisition process of the IBCT and therefore any requirement had to be able to pass a "four star" review. When COL Schenk was given the task to develop the PM office by MG Caldwell, the TACOM Commander, he was literally given carte blanche' to bring in talent from the entire TACOM command structure. With few exceptions, the people he chose were brought into the office and immediately set to work on building the Provisional PM; the program office was provisional in the sense that the program existed but was neither funded in the current year nor did it appear in the POM.

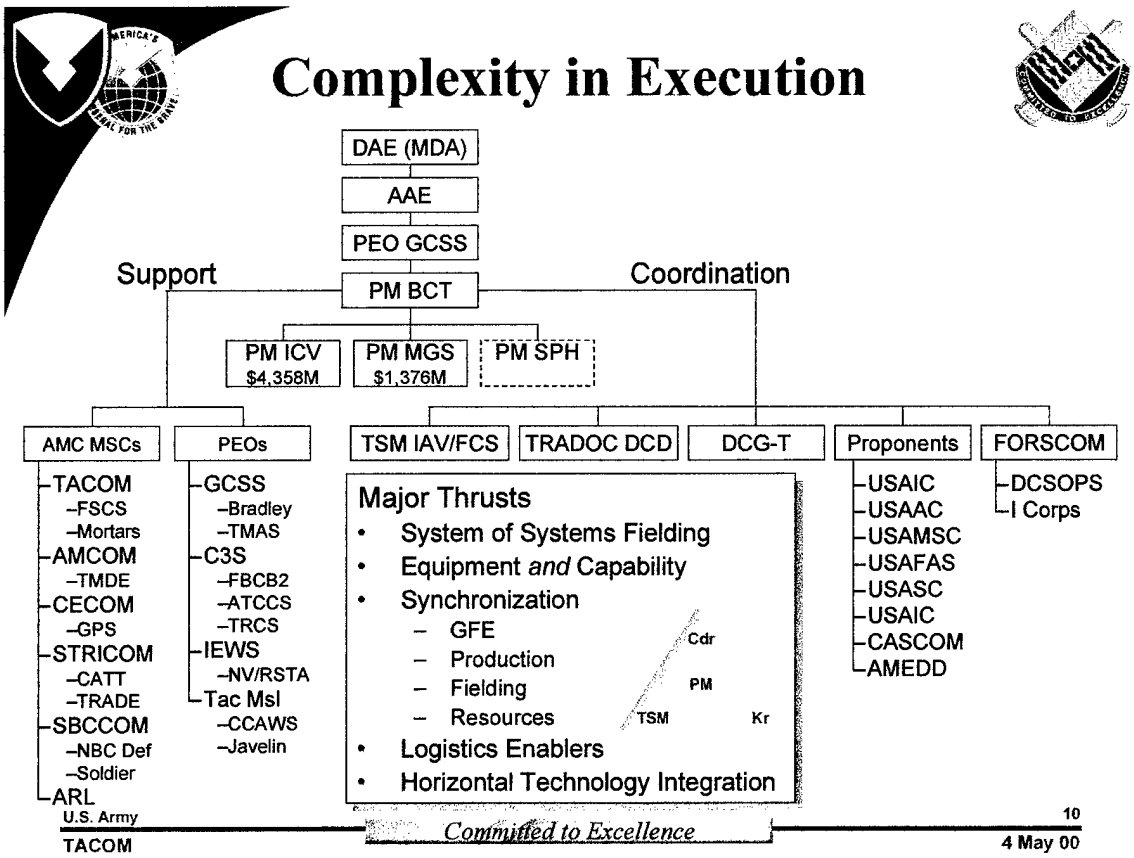


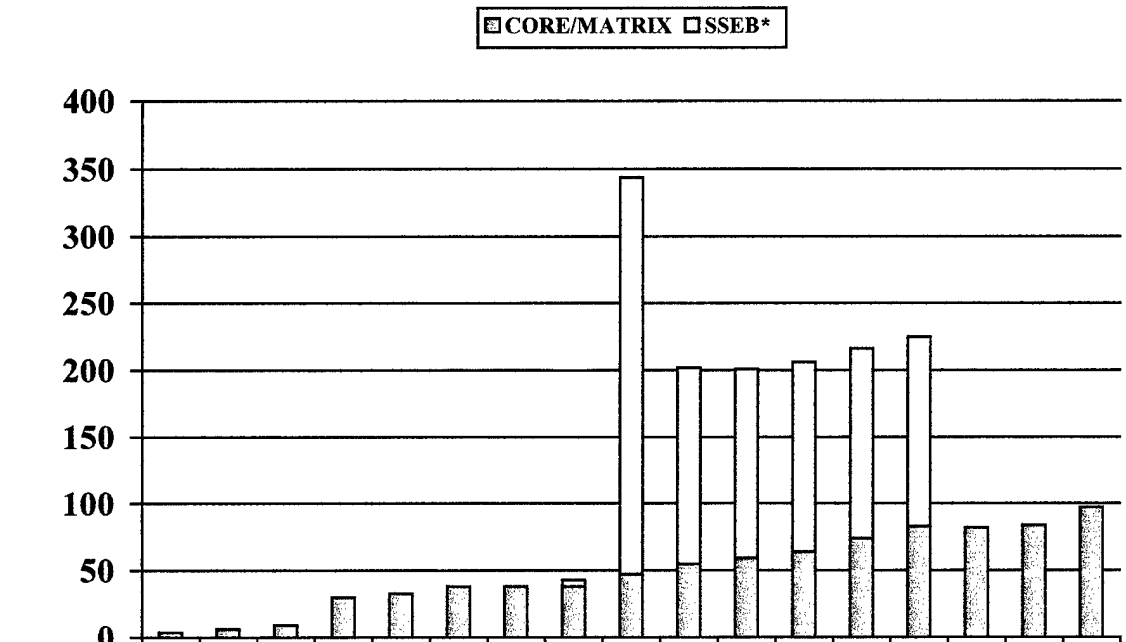
Figure 8 – PM BCT, Complexity of Management (From Ref. PM-BCT, 4 May 2000)

The program stood up as an AMC PM organization on 18 Jan 00 but would not be recognized as a formal PM office until the beginning of the FY01 when it transitioned to the PEO for Ground Combat Support Systems (PEO-GCSS). No matter the specific chain-of-command, the management structure (Figure 7 above) was still complicated given the number of contributors and customers that the IBCT affected and whose influences had to be considered.

Although the PM brought in the "best of the best" from TACOM's personnel, the staffing effort was somewhat mired in political pulls with existing programs and tenant programs in Warren, MI. The PEO-GCSS wanted to ensure that the IBCT program came

under their control and but the Commander of the Army Materiel Command had been directed by the CSA to lead the program. In the Army acquisition scheme, the program executives, responsible for weapon system development, do not report to the Commander, Army Materiel Command but do receive matrix support from that organization. Although the PM received adequate support to staff to a minimum working level through transfers and matrix assignments, there was some hesitation for folks to join the program management office. As is typical of DoD new program starts, with their attendant organizational changes, the new jobs were seen by some as unstable. The personnel problems did not smooth out for about a year. Some staffing problems persisted, even after the program officially transitioned under PEO control, in December 2000 (Hoeper, April 2000).

With the exception of the duration of the SSEB, the staffing of the PM office lagged behind that which would normally be required to run a program the size of the BCT. Including contractor support, for example, the PM offices for Bradley, Abrams, and FMTV, contain 188, 148, and 73 persons respectively for an average of 136 persons (Masyra, Email, 7 June 2001). Referring to Figure 8 below, the BCT PM office was run by less than half of that average for the first year of its existence, except for the supplemental staffing during the SSEB. To make matters worse, several key persons were tasked to participate in the SSEB and therefore the PM office became even more shorthanded. The current PM-BCT staffing is at 123 persons, with 97 Government employees and 26 Contractors.




| | Oct-99 | Nov-99 | Dec-99 | Jan-00 | Feb-00 | Mar-00 | Apr-00 | May-00 | Jun-00 | Jul-00 | Aug-00 | Sep-00 | Oct-00 | Nov-00 | Dec-00 | Jan-01 | Jun-01 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SSEB* | | | | | | | | 5 | 297 | 147 | 142 | 142 | 142 | 142 | 0 | 0 | 0 |
| CORE/MATRIX | 4 | 6 | 9 | 30 | 33 | 38 | 38 | 38 | 47 | 55 | 59 | 64 | 74 | 83 | 82 | 84 | 97 |

*The numbers represent full-time and part-time personnel that participated in the SSEB. Funding does not reflect costs that were not reimbursed.

Figure 9 – PM BCT Staffing Shortfall (After Ref. PM-BCT, Apr 01)

Another significant aspect of this part of the procurement process was the overall speed at which the program was expected to move. This is especially significant with objective, or desired, First Unit Equipped (FUE) and Initial Operational Capability (IOC) dates of March 2001 and December 2001 respectively. The PM staff expected that acquisition reform would certainly be at the heart of the procurement and there would not be a protracted requirements determination process. Only through intensive and iterative management of the requirements along with senior Army political expertise would this program succeed as explained below.

*a) Intensive Management*

Intensive as used here meant General Officer involvement in the generation of requirements throughout. This served good and bad purposes, as the cycle time for decisions was often swift, but not necessarily popular at the working level. For example, Headquarters TRADOC (HQTRADOC) did not designate one of its subordinate commands as a primary combat developer as it normally does. This program was infantry-centric, meaning a family of vehicles centered on a common chassis that took soldiers to the fight rather than serving as a fighting platform such as the Bradley Fighting Vehicle. Therefore, the Infantry Center and School seemed to be a logical choice. However, with the vehicles needing armor survivability characteristics, the Armor Center and School would also seem to be a good choice.

Other schools also had critical involvement such as with fire support (Field Artillery School, Ft. Sill, OK), maneuver support (Engineers and Chemical from the Maneuver Center, Ft. Leonard Wood), and interoperable communications (Ft. Gordon). One could therefore make a good case, then, that the respective schools should have been given responsibility to "manage" their piece of the requirements determination process. In response, HQTRADOC did give responsibility to the respective schools, but it gave neither the final approval of the requirements nor the bureaucratic time to allow the process to move at its normal pace. The entire process that normally takes one to two years depending on the size and complexity of a program, in effect, occurred in just 6 months. Therefore, the only way the HQTRADOC saw that it could complete the requirements determination process was through intensive management of the entire process (US Army Transformation Campaign Plan, July 2000).

### *b) Iterative Management*

Iterative as used here meant development of the contractual, programmatic, and requirements documents simultaneously with iterative break points for synchronization. Three major events occurred that were the central drivers for the requirements determination process. The Platform Performance Demonstration (PPD), the White Paper submittals, and the use of Draft RFPs solidified the requirements for the program. The fact that they occurred nearly at the same time is significant. The PPD occurred in early January 2000, the white papers were due soon after the PPD, and the Draft RFPs were presented electronically to the offerors in February 2000.

### *c) Simultaneous Requirements Development and Validation*

While the Program office worked the PPD, the White Papers and the Draft RFPs, HQTRADOC held a General Officer panel to develop the Operational and Organization (O&O) plan. Normally the result of months of sequential review and revision, the O&O was drafted in one week and published electronically to the combat developer community for refinement. HQTRADOC also provided it to the PM office for initiation of the performance specification. At the same time, the Blue Book analysis was completed. To reiterate the point made in Chapter III (Paragraph B.1), this was done by HQTRADOC in place of the AoA that normally occurs to identify other means to counter a newly identified limitation in national security.

The results of the Blue Book were not distributed below senior Army leadership. The limitations that it identified and the chosen path forward were the subject

of several Overarching Integrated Product Team (OIPT) meetings (OSD PA&E Memo, 10 March 2000). The results of the OIPTs were the baseline requirements and Key Performance Parameters (KPPs) that formed the basis of the ORD. While not scathing, the accompanying OSD PA&E memo provided several pointed comments on the acquisition approach and operational KPPs that had to be addressed in order to gain OSD's 100% support. The PM and TRADOC partnered to provide solutions or detail explanations for the points made.

For instance, the PA&E memo suggested that the PM should allow for separate contracts to mitigate risks as the acquisition strategy was for "winner-takes-all" (PM-BCT Industry Day, October 1999). In response the PM revised the acquisition strategy to provide for multiple contract awards (Acquisition Strategy Report, 17 March 2000). They also provided for an award differentiation between systems that were production ready and systems that required some development. The PA&E memo also opined that the PM had not performed an adequate risk analysis and milestone assessment for achieving MS III, further exacerbating the winner-takes-all strategy. The PM's response not only identified their risk assessment and milestone strategies in detail but also lined out how they would handle several contingent versions of contract award. These included if several vehicle configurations were identified to be production ready, the PM would ask for LRIP approval for those vehicles only. Then, the PM would identify, "discrete program schedules based on system maturity" of the remaining systems. (PM-BCT, Briefing to OSD, 14 Apr 00)

In effect, the PM office could execute a finite number of developmental and production contractual efforts simultaneously on the ICV variant with one contractor and execute a parallel effort for production and/or development for the MGS variant with another contractor. This fact was accepted favorably by industry and was reflected in the proposals presented to the PM (Baumgardner, Defense Daily, March 2000).

Similarly, TRADOC identified the analytical tools and methodologies it used to conclude its KPP requirements. Again, even though they did not perform a formal AoA, the efforts that they performed simultaneously with the rest of the acquisition proved sufficient to justify the KPPs. The TRADOC analysis efforts occurred across its many analysis centers and combat development centers including:

- TRAC operational analysis using Vector-in-Command (VIC), Janus, and Computer Assisted Map Exercise (CAMEX) war gaming softwares
- CAC/CGSC performing C4IAR analysis using PMJ along with SME's
- Field Artillery School performing fire support analysis using Fire Simulation (FireSIM) XXI,
- Army ARMC and Infantry centers performing Modular Semi-automated Forces (ModSAF), Janus, and Joint Conflict and Tactical Center (JCATS)
- CASCOM performing deployment analysis using spreadsheet models.

(TRAC BCT Analyses brief 17 Nov 99)

Using the validated KPPs, TRADOC performed a whole range of analysis in urban, complex, open and rolling plains, and desert terrains as well as ranges of operations involving Support and Stabilization Operations (SASO), small scale contingency (SSC) and Major Theatre War (MTW). They compared prototype BCT brigades with Mechanized/Armor brigades against foes that were equal in capability as

well as foes with far greater capabilities to identify limitations. The output not only answered the PA&E questions, it also assisted in re-baselining the BCT O&O plan.

### 7. Comparative Evaluation

The Senate Armed Service Committee placed a 20% rider on the BCT production budget until they complete a side-by-side CE (Ref. White Paper Section above). LTG Kern described this as unnecessary experimentation when he spoke to an *Inside the Army* reporter in May 2000. He expressed his dismay in the following statement, "We've been doing experiments for 10 years. So what we do want to get on with is fielding urgent requirements that are capabilities we know exist" (Kern, LTG, May 2000)

The CE, as written, must include an evaluation of the IBCT LAV III-based IAV as compared to a representative medium weight system already in the Army inventory. The only medium weight system in the Army inventory is the tracked M113 family of vehicles. In fact, the committee language states that they, "believe it is possible that the Army may already have equipment in the inventory that could meet the requirements established for the interim force". Senator Lieberman (PBS Frontline, October 2000) and Senator Santorum (Burger and Dupont, *Inside the Army*, 9 October 2000) stated in separate interviews that their intent essentially was to ensure that the Army was not wasting money that could be used more effectively for the Objective Force. Therefore they felt compelled to require an operational test. Whether the CE proves the Senators' viewpoints won't be known until 3QFY '02. Until then, the PM has to plan the evaluation, which is taking up time and resources. At best, the CE may prove the worn-

out medium systems come close to meeting new requirements. At worst, the older medium systems might perform better; this is counterintuitive.

### 8. Good Acquisition Reform

There is one key question to answer at this moment, "How does this relate to acquisition reform?" The answer is simple but difficult to prove. A good acquisition is based on good solid requirements or as Professor Orin Marvel of the Naval Postgraduate School puts it, solid requirements as an output from the requirements generation process set you up for, "Doing the right thing right."

The effort that the PM office underwent, including market survey, PPD, White Papers, and Draft RFPs, was fully dependent on effective communication and cooperation with TRADOC and the prospective offerors. In the end, the PM ensured that good supportable requirements existed prior to releasing the Draft RFP to industry. The requirements were further refined based on industry's input to the Draft RFPs, but the foundation was laid.

## B. SOURCE SELECTION

This part of the chapter looks at acquisition reform that was applied to the source selection process from the release of the receipt of proposals through contract award. To better describe disadvantages and advantages that acquisition brought to the IAV procurement, I will look at the source selection from two different angles.

First, for reasons that I will explain, the source selection took longer than a typical medium weight vehicle system that TACOM has procured. I will look at what might have caused the source selection to go longer than TACOM's average. Although the delay was caused primarily by the complexity of the IAV program itself, there were several distinct reasons for the additional delay. They included the total number of proposals submitted, issues regarding the complexity of the RFP, availability of critical GFE items, and late August and early September changes to the RFP.

Second, I will contrast the longer time with better getting a better quality product. I will analyze the distinct acquisition reform initiatives that qualitatively improved the source selection process but that didn't necessarily shorten its duration. The initiatives include, the contract formulation including a diverse set of attachments to the SOW, a newly created side-by-side Table LM, electronic commerce (E-commerce), the use of discussions (written and oral), model contracting methods, the minimum use of Government Specs and Standards, the use of bid sample evaluation, and the "luxury" of resources to complete the task.

### 1. Reasons for Elongation of the Source Selection Process

Although the PMO originally planned to complete the source selection in less than 90 days, the actual effort took approximately 160 days. In comparison, the acquisition of programs that were either similar in size or dollar value had an average of 108 days (range: 68-169) without the AGMS outlier (Figure 9 below). When including the AGMS, which had significant pre-award bid sample user testing, fixes, and discussions, the average time increases to 125 days.

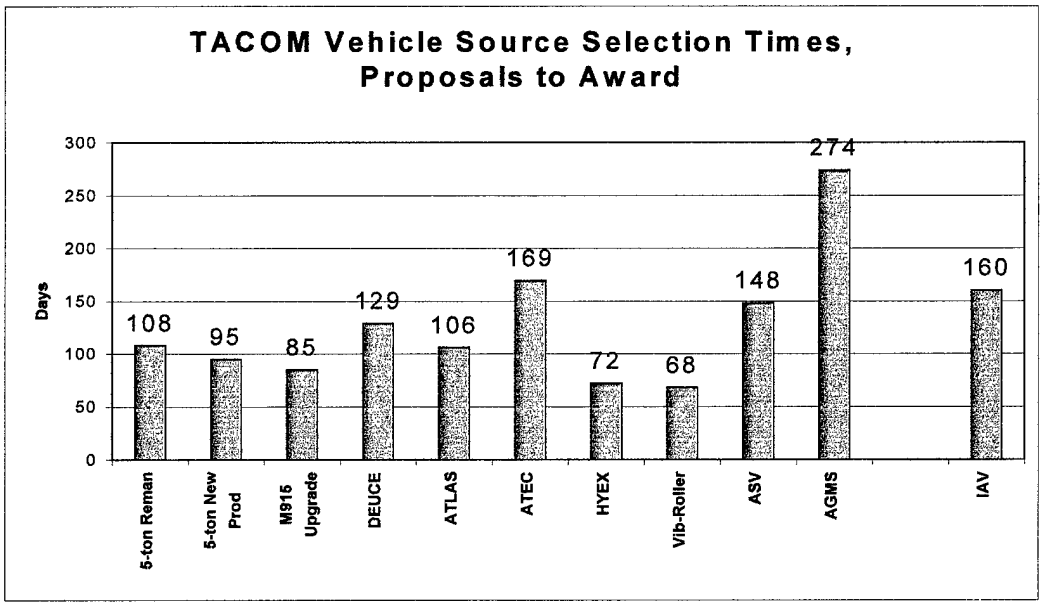



Figure 10 – Source selection times (After Ref. TACOM CM Brief, Nov 1999)

The first reason for this elongation was due to the RFP itself. The RFP was very complex since the proposals had to be delivered in three parts for each offeror if they proposed to deliver the complete IAV family. There had to be separate ICV only, MGS only, and combined proposals in order for the SSEB to be able to evaluate a split award. The PM had expected 4 or 5 offerors to propose with at least two proposing only the ICV (which happened) thus leaving three offerors to propose the total IAV family. This would have meant about 12 proposals max. Instead the SSEB had to evaluate 17 of 20 proposals received after three were removed as being non-responsive (Table 4).

| | |
|---|---|
| Two offerors submitted only ICVs | 2 |
| One Offeror proposed the ICV, MGS and Combined | 3 |
| One Offeror proposed four different proposals for the ICV, MGS, and Combined | 12 |
| Three Offerors were determined to be non-responsive | 3 |
| Total = 20 | |

Table 4 – Total number of Proposals (Source: Researcher)

Second, there were several complex attachments to the RFP that required the offerors to compile substantive amounts of data. The most difficult attachments for them to compile were Attachment 5 – GFE and Attachment 21 – System Architecture List of Contractor Furnished Equipment (CFE). With most of the listed items being communication and electronic gear that contributed to the interoperability KPP, determining which items would be best given as GFE versus accepted as CFE items turned out to be a larger task than anticipated. Not only did the GFE items require integration of complex electronic and communication equipment, which include their own space, power, temperature, and EMI difficulties, but the effort also required space claims for items that either were not fully developed or did not exist. Further, there were questions on some key GFE components as to whether the contractor could ultimately provide the same or similar item as CFE faster than as a GFE. The intent of providing GFE was to save time and to guarantee that the IAV systems would meet their interoperability requirements. However, the conundrum was that providing GFE detracted from contractor innovation, a major desire of acquisition reform.

Add to this, the complexity of the 10 vehicles times with 10 different missions and the task becomes more difficult. The C4ISR community worked hard to solidify the requirements and the systems architecture. Changes to GFE and CFE were included in nearly every revision to the RFP, including the drafts before the formal release and the final RFP. Essentially, the offerors were "tasked" into C4ISR subcontract support in order to ensure that they covered the all requirements completely. The actual integration, as opposed to the proposed effort, will be the measure of how well the requirements were written.

Another significant contributor to the elongated source selection process was due to the Army's refinement of the RFP and the SOW in late August and again in early September 2000. The changes were published as amendments 5 and 6 to the RFP. Dealing with complex FSV and NBCRV contractor responsibilities as well as more GFE availability issues, they contributed to the offerors needing more response time. As a result, the SSEB needed more evaluation time after the offerors submitted their responses. One can not accurately identify the exact effect on the source selection process even though Amendments 5 and 6 were not significant changes. The net effect probably resulted in adding approximately four weeks of effort to the overall evaluation schedule.

The significance in this section is that even though it appears from the data presented above (Figure 10) that the IAV source selection lasted longer than most TACOM medium weight vehicle systems, there is no direct way to draw good

comparisons. Each of the systems presented was far less complicated than the IAV and each was based on singular vehicles or simple families of items.

### 2. Qualitative improvements to the Source Selection Process

The most significant contribution to improving the source selection was the formulation of the contract and the RFP. The RFP was formatted with normal sections A through M but the PM also included 27 attachments. The attachments were used as detailed clarifiers to the RFP; mainly the SOW. The intent was to baseline the information provided to the offerors and to present them a singular information source and format for submittal of their proposals. There were detailed lists, required blank matrices, data sheets, agreements, equipment lists, detailed instructions, modeling and test standards, and program objective documents. Much of the information would normally have been provided within the SOW that would have made it much larger (more pages) than the PM planned. By using the attachments, the PM office was able to provide much more detail to support the RFP without a perception of over-kill in terms of the requirements. (Spitzbarth, 25 May 2001).

Next, the PM office added more qualitative improvements to the RFP by establishing many contractual incentives and features to encourage the offerors (PM-BCT, 9 February 2000). As discussed previously, the RFP contained fixed price, and cost plus contract types with fixed, award, and incentive fee aspects. The production contract would be awarded as a FFP requirements contract with a price reduction dis-incentive for late deliveries. The SDD portions would be CPIF/AF with incentives on cost. Also included was award fee for maximizing commonality and improving the SDD

schedule. There were options for PDOS in terms of the SDD effort along with Design to Unit Cost incentives. And lastly, there was FFP for Contractor Logistic Support (CLS) on a per vehicle, time phased basis. The RFP also contained allowances for the offerors to receive "credit" for exceeding the basic requirements of the Performance Specification. For instance, the ability to exceed an individual requirement or increase the likelihood of meeting a desired requirement, "would be considered an advantage to the extent it provides benefit to the BCT" (RFP DAAE07-00-R-M032, Section M.1.9, 6 April 2000). The SSEB evaluated the merits of each proposal along these lines and took into account the extent to which each offeror could be incentivized and the Army could benefit.

Furthering the effort was a novel use of a side-by-side Table LM that brought together the instructions to the offerors on how to put their proposal together from Section L and posted them along side the Section M description on how the SSEB would evaluate the proposals. TACOM corporate management has used similar charts and tables to more clearly define the connection, but never on such a large effort and never quite as comprehensively as was used for the IAV RFP (Spitzbarth, 25 May 2001). The data required to support the complex source selection was therefore provided in a clear and concise format. The Table LM requirements were established by the PM office in such a way that the SSEB was provided with both the data and the method of evaluation. With the established format, the SSEB was provided with all of the information it needed to complete their evaluation.

The source selection board employed additional discussions beyond those already employed before the release of the RFP. Throughout the process, the PM had involved industry. In the source selection process, they continued to use open discussions to support the decision process. The SSEB employed written, teleconference, and face-to-face discussions. The discussions had the same purposes during source selection as they did in writing the RFP, to build the best understanding of the IAV requirements so that the offerors could best bid against them. What made the discussions different here is that the discussions were not shared with all. Referring back to Chapter III, the results of all discussions leading up to the release of the RFP and through to the submittal of proposals, all questions that were asked were answered to all offerors. Here, discussions occurred between the SSEB and the respective offeror only. The results of the discussions were intellectual understanding. At no time were meeting minutes used to modify the proposals; only a written notice from the offeror could do that. In other words, the offerors could use the information (understanding) to make changes to their proposal and the SSEB would not infer from a conversation that the proposal was changed until such written notification was received.

Discussions typically started with written Items for Discussion (IFD) that had to be answered in writing, again, to make their response official. IFD responses became part of the contract when submitted and as with all changes, the proposals were updated iteratively. That is to say that the proposal would not be resubmitted as a whole when its parts were changed. This was the case for all changes including the Amendments to the RFP that occurred after release of the RFP as well as the Final Proposal Revisions. The

SSEB continued using teleconferences and face-to-face discussions to discuss issues from the IFDs or RFP Amendments. Each offeror was also brought in for formal face-to-face discussions in July to discuss their overall understanding of the RFP, evaluation data from the bid sample event, and any outstanding issues from the IFD process.

The offerors submitted changed pages for only such parts of their proposal that changed relative to discussions. With each submittal, the changes were re-evaluated and the respective changes to the SSEB evaluation were created. Obviously, some iterative changes made large impacts on the offer when combined. Using the iterative approach saved time in that the offeror and the SSEB could concentrate on what changed and the net effect rather than having to re-evaluate the entire proposal.

With regard to specs and standards, Secretary Perry made sweeping changes with his acquisition reform efforts in 1994 and all but eliminated the use of Military Specs and Standards. Through a concerted effort on the PM's part, the RFP was released with only seven Government Specs and Standards. Although some felt that the elimination of all but these seven would make it more difficult on the offerors, the Source Selection process was not negatively impacted. To have a positive affect, two things had to happen. First, there had to be trust since the SSEB must understand the commercial or Industrial Specs and Standards that are submitted and trust that the offeror does also. And second, there had to be a commercial or industrial standard to use. Otherwise, the offeror submits his proposal using Government Specs and Standards of his own volition. The most popular specs and standards that were used involve design and engineering attributes that evolved

from the Government during the last 50 years. These areas included Human Factors, MANPRINT, safety, survivability, transportability and mobility. Although not exclusively military, most of the offerors used Government Specs or Standards with "modification" or tailoring to support their proposals.

This leads us straight into the next area of acquisition reform, the use of model contracts. The offerors were given maximum flexibility to modify and tailor major aspects of the RFP with the understanding that they would sign those changes into any contract they received. The model contracting process allows for the offeror to impose their own changes on the final contract they sign as long as basic fundamental aspects of the RFP are met. The changes are evaluated and agreed or not agreed to by the SSEB. If accepted, the changes are written into the model contract. If not, the changes are discussed to the point of acceptance and then incorporated. In the end, the model contract mirrors the intent of the PM as well as the offeror to the extent that both are willing to sign a contract if selected.

Some of these attributes of success may seem to contradict the Army's desire to complete the source selection process quickly. In contrast to that opinion, however, the SSEB was resourced with one luxury item. They were given full access to the best resources the Army (and the DoD) had to offer. These resources included people, funding, facilities, and intellect. Staffed by almost 300 persons initially, the SSEB contained nearly 150 persons for most of the duration of the board (PM-BCT brief, April 2001). The US Army Test and Evaluation Command (ATEC) facilities at Aberdeen

Proving Ground, MD were used to the maximum extent, DoD support was provided both internally and externally to the effort, as well as the best inter service support I have ever witnessed.

The Army's premier ground vehicle test facility completed the bid sample evaluation for the SSEB in two months time, 6 June until 6 August 2000. I discussed the use of bid sample evaluations in Chapter III, but the effort was intended to affirm the proposed capabilities of the offerors' ICV vehicles. This formed the foundation of the offers and the IAV program since for the most part, the ICV underpins the entire IAV program. The effort completed by ATEC was made available to the offerors through their "Vision" database as well as through daily coordination meetings. The Vision database access was established for the bid sample evaluation as it was referenced in the Executive Summary to the RFP (RFP DAAE07-00-R-M032, 6 April 2000).

Web link access was given to the offerors in order to allow them to download the evaluation data in a timely manner as was mentioned in Chapter III. Timeliness was critical to ensure that the results could provide the offerors some feedback on how close their vehicle came to meeting the critical requirements. It would be used both to verify content of offerors' written proposals and provide physical proof of performance. One additional support statement is found in Section M of the RFP, which contained the following with regard to the use of bid sample evaluation data, "M.1.4 The results of the bid sample evaluation will be used to verify the relevant content of the written portion of

the offeror's proposal and will be considered in conjunction with the evaluation of the performance requirements" (RFP DAAE07-00-R-M032, 6 April 2000).

The last significant area of acquisition reform that benefited the source selection process was the use of electronic commerce (E-commerce). The SSEB relied on Email, datafax, and electronic data transfer to submit changes to and from the offerors. The normal time frame for a response to each IFD submitted was about one week. This would not have been possible without E-commerce. The entire RFP was posted electronically including through Amendment 4. The later ones, Amendments 5 and 6, occurred after the delivery of proposals and therefore were not posted on the TACOM web page. They were transmitted via Email to expedite them.

## C. PROTEST

The Army awarded the IAV contract worth $4 Billion to General Motors/General Dynamics Land Systems Defense Group, L.L.C. (GM/GDLS) on 16 November 2000 based on a best value determination (DAAE07-00-D-M05, 16 November 2000).

The SSA pointed out in his Source Selection Decision memorandum (SSDM, 16 November 2000), that GM/GDLS's ICV proposal was significantly superior to the United Defense Limited Partnership (UDLP) proposal(s) in the performance and supportability areas. He further stated that UDLP's proposal no.1 was superior to the GM/GDLS proposal in the schedule area and significantly superior to the GM/GDLS proposal in the price/cost area. Overall, the SSA determined that GM/GDLS's significant performance

and supportability advantages outweighed UDLP's significant schedule and superior cost/price areas.

With regard to the MGS, the SSA pointed out that the GM/GDLS MGS proposal was significantly superior to the UDLP MGS proposal in the performance and supportability areas and outweighed the fact that UDLP's MGS proposal was superior to the GM/GDLS proposal in the schedule and cost/price areas.

UDLP, felt that they had delivered a better proposal and protested the award with the General Accounting Offices (GAO) on 4 December 2000. UDLP's protest was multifaceted in that it covered nearly every aspect of the SSEB evaluations and the SSA's decision. Federal Statutes protect the source selection process, the protest process, and all generated documents with regard to a source selection. Therefore, I can only discuss those protest documents that have been publicly released.

With that in mind there is only one such protest document, the redacted version of the GAO decision on 9 April 2001. Since the GAO decision covers the facts that they felt had the most contention with regard to the award and protest, I will summarize the GAO response and discuss any implications to acquisition reform. The Digest paragraph of the decision contained two main points for denying the protest. I have included the paragraph in its entirety:

Protest against award of single contract for both infantry carrier vehicle (ICV) and mobile gun system (MGS) variants of the new family of armored vehicles is denied where (1) awardee's proposal for ICV, accounting for approximately 89 percent of new vehicles in contemplated brigade, was reasonably evaluated as offering significant

performance and supportability advantages which outweigh protester's schedule and price/cost advantages, and (2) although awardee's schedule for deploying MGS was very disadvantageous and evaluation did not fully reflect certain disadvantages with respect to ammunition stowage in awardee's MGS, its proposal nevertheless offered other performance and supportability advantages, and selection of awardee's MGS would result in commonality between the ICV and MGS, such that award for both variants was not unreasonable (GAO Decision, 9 April 2001).

The GAO decision next synopsized the SSA's SSD memorandum and concluded with a statement that they, "reviewed the record and find no basis to question the award." The GAO then summarized the major contentions of UDLP's protest, point-by-point, and commented on the validity of each argument. The protest points regarded performance, cost, and schedule issues based on the proposals and performance advantages and disadvantages to the BCT. Since there were no parts of UDLP's protest arguments that dealt with acquisition reform, the protest issues are outside the scope of this thesis. With the protest denied, the Army was able to start work with GM/GDLS on 9 April 2001.

# V. CONCLUSIONS AND RECOMMENDATIONS

The objective of this thesis was to investigate the application of DoD acquisition reform to major system procurement. It was woven into a case study of the processes and initiatives evoked and it focused on what the Army employed to develop an ACAT ID major weapon system within 16 months after program initiation. My research included a discussion of the relative merits of acquisition reform processes and hindrances encountered with such processes. I employed an iterative approach to completing the thesis and refocused the effort as the program unfolded. Due to a protest of the contract as awarded, I also researched the impact that acquisition reform might have had on the protest.

This Chapter is intended to serve as an end point, but also as a start point. It is an end point for this thesis and the potential start point for a follow-on effort. I will present my conclusions based on the research I completed and the analysis from the earlier chapters of this thesis. I will answer my primary and subsidiary research questions and then I will recommend areas of further research interest for future Naval Postgraduate School students.

## A. BASIC RESEARCH QUESTION

What has been the impact of DoD acquisition reform on the development of the Brigade Combat Team? From program initiation to contract award, the entire IAV procurement effort totaled only 11 months. This is completely unheard of for a major weapon system. I am certain that the effort to develop and award the IAV production

contract could have only been accomplished with the use of acquisition reform initiatives described in this thesis.

Along the way, the PM office applied many different facets of acquisition reform. They used a multi-faceted approach to develop the requirements that heavily involved industry. The PM drafted the performance requirements and then used acquisition reform initiatives such as the following to build the RFP:

- Market Surveys with Prototype Demonstrations
- Industry White Papers
- Advanced Planning Briefs to Industry
- Competitive Solicitation
- Oral and Written Discussions
- Draft RFPs with Question and Answer

This list parallels my Chapter IV Part A analysis.

After delivery of the offeror's proposals, the SSEB applied many innovative acquisition reform initiatives such as:

- bid sample evaluations
- open written and oral discussions
- E-commerce

None of these initiatives singularly provided the PM the ability to make the contract award so quickly, but combining the efforts provided the means to accelerate the entire operational and performance requirements processes as well as support the efforts of source selection evaluation board.

In my analysis, I concentrated on two aspects of acquisition reform. First was the aspect of reducing acquisition time and second was the aspect of procuring a better product. I looked at each aspect individually.

As delineated above, the time aspect has two parts, the efforts from program initiation up to release of the RFP and the efforts from receipt of proposals up to contract award (disregarding the 60 days in between for proposal development). What I found was there were distinct detractors that elongated the source selection in spite of the acquisition reform initiatives. Even though it appears from the data presented in Chapter IV Figure 10, that the IAV source selection lasted longer than most TACOM medium weight vehicle systems, there is no direct way to draw good comparisons. Each of the systems presented was far less complicated than the IAV and each was based on singular vehicles or simple families of items. I will summarize the detractors as well as the positive outcomes of applying acquisition reform to the source selection efforts in the answers to the subsidiary questions below.

Second, that the requirements determination effort, development of the performance specification, and the completion of the RFP effort were completed from program initiation to release of the formal RFP in less than 6 months. What resulted was a streamlined solicitation that had been developed by a team of carefully selected acquisition experts from the Army and DoD. They employed multiple facets of acquisition reform in the completion of their task. I will address these facets in more detail as I provide the answers to the subsidiary thesis questions below.

## B. SUBSIDIARY RESEARCH QUESTIONS

From the basic research question, the following subsidiary questions were developed:

1. What is the Brigade Combat Team: Background and overview?
2. What attributes of acquisition reform are relevant to the BCT?
3. What areas of acquisition reform are being employed to execute the program?
4. What are the advantages and disadvantages that acquisition reform brings to the BCT?
5. What conclusions and follow-on recommendations can be drawn from applying acquisition reform to the BCT?

### 1. What is the Brigade Combat Team: Background and Overview?

I answered this research question in detail in Chapter II. In Summary, the BCT as a new medium weight, combat vehicle program. As a system of systems, it is a responsive, deployable, agile, versatile, lethal, survivable, and mobile force intended for operations anywhere in the world within 96 hours. The BCT consists of 10 IAV vehicles that are based on one common chassis. The 10 vehicles are based on 2 variants, the Infantry Carrier Vehicle (ICV) and the Mobile Gun System (MGS). The ICV has 8 additional configurations: Mortar Carrier, Anti-Tank Guided Missile, Reconnaissance Vehicle, Commander's Vehicle, Fire Support Vehicle, Engineer Squad Vehicle, Nuclear Chemical Biological Reconnaissance Vehicle, and Medical Evacuation Vehicle. Each configuration and variant serves individual combat and combat support functions on the battlefield.

The BCT effort is rooted in several previous Army development attempts, but succeeds where previous attempts at transformation had failed. The BCT succeeded in that it was the first medium weight, combat vehicle system that the Army accepted for production on the basis of very limited experimentation. The Army had learned from the previous attempts at transformation such as the 9th Infantry Division (Motorized) and the Strike Force concepts and picked up where these previous attempts had stalled in developing medium weight combat systems. The IAV development also went beyond just vehicles expanding into a transformation including people, equipment, doctrine, and leadership. The BCT is the first program established to "buy" the ability to deliver a strategic response as opposed to experimentation and studies of how to do it. The Army is learning as it transforms with simultaneous and iterative applications of technology, training, tactics, and procedures that are employed in three major efforts.

The first effort is the Initial Brigade Combat Team that initiates the transformation process. Units at Ft. Lewis, Washington have transitioned to a Medium Weight force structure and are training on surrogate and "in-lieu-of" systems that are predecessors of the Interim Brigade Combat Team weapon systems.

The Interim Brigade Combat Team, the second effort, is spearheaded by the acquisition of the Interim Armored Vehicle. The IAV will be fielded to the units at Ft. Lewis to replace the surrogates and in-lieu-of systems once significant production quantities exist.

The final effort is the Objective Force. The Army's Objective Force will have Future Combat System (FCS) combat platforms that will replace the Interim Armored Vehicles and be operational in the year 2020. The Objective Force is still early in its development.

What makes the BCT unique is that the previous programs were unable to exit the experimentation stage and proceed into development and production. The Army Chief of Staff, GEN Shinseki, directed the Army to procure the BCT and field it as quickly as possible. The Army acquisition community went through a massive transformation effort to develop a program to meet his vision; this included many acquisition reform initiatives. Streamlined processes had to be used to meet the CSA's schedule. The Army has employed an intensive and iterative management effort to develop the IAV requirements from off-the-shelf capabilities with plans for eventual technology block improvements. GEN Shinseki also set in motion a transformation of the Army light and heavy combat brigades to make them strategically responsive while still meeting the National Military Strategy.

**2. What attributes of acquisition reform are relevant to the BCT?**

I answered this research question in detail in Chapter II, Part A. In summary, I first researched to determine what acquisition reform was and realized that there was no single source document that fully described acquisition reform. Two explanations, however, highlighted the tenets, initiatives, ideas, and tips that make up acquisition reform. Through analysis of recent DoD and Army guidance, a connection emerged

between the DoD focus areas and the Army's Streamlining Tips. Both references are available in the Defense Acquisition Deskbook.

While not all encompassing, the significant DoD acquisition reform focus areas include the following:

- Reliance on an integrated civil-military industrial base
- Reliance on price and schedule in design development
- Logistics on demand; agile and reliable logistic processes
- Reduced DoD acquisition infrastructure overhead
- Enhanced DoD workforce training
- Continuous improvement with systematic change management

To this more recent list are added a few more focus areas that are that reflect best practices and common sense applications of acquisition reform:

- Communication with industry
- Performance Based Requirements
- Teaming
- Minimum number of key performance parameters

The above focus areas are supported by the Army's top 20 tips for streamlining of which are shown below as applicable to major systems acquisition:

- Eliminating Specs and Standards
- Electronic Commerce (E-commerce)
- Single Process Initiatives
- Multi-year Agreements
- Streamlining Contract Requirements
- Commercial Test Equipment
- Single Acquisition Management Plan
- Procuring Commercial Items
- Commercializing Contract Requirements
- Alpha Contracting
- Partnering
- New Uniform Contract Format
- Power-down Authority

- Cost as an Independent Variable (CAIV)

Part of the thesis effort was then to analyze how well the Army's streamlining tips fir the DoD focus area. Obviously there was much overlap as many "tips" supported more than one focus area. This was illustrated with a connection diagram (Ref. Figure 7).

### 3. What areas of acquisition reform are being employed to execute the program?

The next task was to identify which of these integrated initiatives had been applied to the BCT acquisition. The following initiatives were employed by PM-BCT to support the RFP preparation and the source selection processes. The goals were reduced cycle time and enhanced communications with prospective contractors, anticipating the additional payoffs in system performance and reduced total ownership costs.

The PM office relied heavily on the four initiatives announced in the 9 November 2000 Commerce Business Daily. The four initiatives established the intent to complete a market survey, to request industry White Papers, to hold an Advanced Planning Brief to Industry, and to compete the IAV contract. The multiple acquisition reform initiatives were addressed in detail in Chapter IV and are summarized here.

The first initiative, market survey, involved two exhaustive efforts, one with industry and one within the Army. The first effort was the Platform Performance Demonstration. Industry delivered 35 vehicles to Ft. Knox Kentucky and demonstrated them in January 2000, just two months after the program announcement. These demonstrations were conducted in the systems' intended environments. Seventy experts

from the Army's combat vehicle community evaluated operations and made assessments both from an operational standpoint to help refine the operational requirements, but also from a technology insertion standpoint. The second point is critical. The Army knew that in order to achieve the current transformation effort, it had to accept the capabilities of the vehicles without performing a protracted engineering and development effort. Through time-phased system development, developers could devise block improvements to the systems and insert technology that the systems did not initially possess. This supported the Army's desire to deliver a capability rapidly, revise its doctrine and war fighting plans, and then reset the needs of the objective force.

The second initiative was the Advanced Planning Brief to Industry. This was essentially a notice to industry of what the Army was going to do and what help it needed. While difficult to assess quantitative improvements to the acquisition process, the qualitative improvements were seen in the cooperation received from industry and the quality of the proposals received.

The third initiative, White Papers, provided affirmation of the Army's requirements as an output of the process. More significant, though, was the outcome of the process, the significant improvement in the proposals received. The White Paper process was not "explosively" revealing as the PM had hoped. The PM had a team review the papers and found the following eight substantive comments: obvious schedule risks due the speed at which the program was moving, the lack of a clear logistics concept, the appearance of skewed requirements towards wheeled vehicle solutions,

complex requirements that precluded off-the-shelf vehicle solutions, the misunderstanding of the bid sample event as part of the source selection process, establishing industry Government partnering, the need for a system integrator, and the lack of a good definition of First Unit Equipped.

As the White Paper process occurred before the release of the second Draft RFP, the PM office addressed each of the eight comments and incorporated relevant changes into the RFP.

The fourth initiative involved the use of full and open competition. There seemed to be hesitation by the offerors to discuss the schedule changes and counter to normal practice, contractors did not immediately ask for more time to develop their proposals. This was partly due the obvious emphasis that GEN Shinseki had placed on the schedule but also partly due the competition. The PM did not receive one statement, during two rounds of question and answer, that an offeror could not meet the Army's requirements or timeline.

In addition, the PM office also built strong ties with its TRADOC counterparts. Together, they employed intensive and iterative management to generate the operational requirements in less than six months. This is normally a drawn out process that involves various TRADOC schools and numerous iterations of the requirements documents. The requirements were supported by TRADOC's own analysis that it performed at several

locations using multiple analytical and modeling and simulation software tools. They developed and validated the Key Performance Parameters (KPPs) and met acquisition reform goals at the same time by only requiring 5 KPPs.

Through intensive involvement of industry and TRADOC, the PM office simultaneously developed the performance requirements for the IAV at the same time that TRADOC was refining the operational requirements. Both of these efforts were supported heavily by what industry told the Army they could deliver off-the-shelf within the desired program schedule.

As the process neared the release of the formal RFP, prospective offerors were provided more Q&A opportunities up to the point of the submittal of proposals. This kept communications channels open while TRADOC refined the operational requirements and validated the KPPs. After proposals were submitted, the Source Selection Evaluation Board continued to communicate with the offerors both in writing as well as orally via teleconference and face-to-face discussions.

**4. What are the advantages and disadvantages that acquisition reform brings to the BCT?**

Of the available acquisition reform initiatives, the PM office found the following to be the most useful to develop the RFP: extensive market surveys, Draft RFPs with Question and Answer sessions, White Papers, advanced planning briefs to industry, full and open competition, streamlined acquisition, model contracting, extensive discussions

including face-to-face as well as written, a performance-based Statement of Work, performance-based requirements, and electronic commerce.

One of the goals of thesis was to identify and discuss both the advantages and disadvantages of acquisition reform: the good and the bad. However, in completing the research, it was evident that although there seemed to be many advantages there were no apparent disadvantages. Therefore, the analysis of the good and bad results of applying acquisition reform emerged as two main observations. First, acquisition reform initiatives were being used to improve the entire acquisition process, but did not necessarily apply in all instances. The negative outcome of this, elongation of the source selection, was not due to applying acquisition reform as much as it was due to the complexities experienced in acquiring a very complicated major program. Second, some acquisition reform initiatives improved the RFP and supported the source selection process qualitatively without making improvements in the acquisition cycle time. This is a positive outcome, a qualitative improvement. I will describe these two observations in more detail below, in an unusual order: first, the reasons for the elongation of the process (i.e., disadvantages), and second, the qualitative improvements to the process (i.e., advantages).

The three primary reasons for the elongation of the source selection process were the complexity of the IAV procurement, the complexity of some RFP attachments and changes late in the source selection process. First, the IAV procurement was more complex than the typical wheeled medium weight systems that TACOM has procured.

Further, the RFP contained multiple award options that caused the offerors to deliver up to three proposals each. This became more burdensome with the total number of proposals received.

Second, the RFP contained several complex attachments with issues such as determination of GFE versus CFE for major items. These issues were difficult for the offerors to resolve and made the source selection more difficult, too. The use of GFE, although intended to help the offerors, actually constrained them and, in truth, ran counter to acquisition reform. The problems of GFE were compounded since nearly every amendment to the RFP included changes to the GFE list.

Third, the PM office made finite changes to the RFP late in the source selection process: that is, within three months of the award. Although broad communications are a hallmark of acquisition reform and this program, these late changes contributed to delays of up to one month in the source selection process.

The PM office made qualitative improvements to the source selection process that tended to offset some of the disadvantages that were identified above. The five primary qualitative improvements that the PM office made relative to acquisition reform were: a simplified Statement of Work with detailed attachments, the inclusion of contractual incentives, the inclusion of credit for exceeding the threshold and objective specification requirements, a Table LM connecting Sections L and M, and the continued use of discussions. The five primary changes made are described in more detail as follows.

First, The PM simplified the scope of work by including multiple detailed attachments. Although some of these were described as complex and contributed to the elongation of the source selection, the clarity to the RFP that the attachments provided far out weighed any complexities.

Second, The PM made qualitative improvements in the procurement competition by including contractual incentives within each contract type and purpose. Some of the incentives were to avoid negative performance such as the late delivery dis-incentive but most were to reward positive performance such as the incentive fee and award fee portions.

As a third qualitative improvement, the offerors were given credit in the source selection for exceeding the required or increasing the likelihood of meeting desired performance requirements. Depending on how much they exceeded the requirement and the priority of the requirement itself, the offerors were given credit as having performance advantages.

The final two initiatives that qualitatively improved the source selection were the PM's creation of a new Table LM and the continued use of discussions. The new Table LM cross-walked proposal formatting requirements of Section L with the source selection evaluation aspect of Section M. The offerors were better able to read and understand how to prepare their proposal and how the Government would evaluate it, all

in one readable document. The continued use of discussions during source selection enhanced the common understanding of the RFP requirements by the offerors and the Government.

**5. What conclusions and follow-on recommendations can be drawn from applying acquisition reform to the BCT?**

Finally, I have concluded that the only way that the BCT effort could have been accomplished in the time frame was through the use of acquisition reform; barring the availability of an off-the-shelf exact match to the known requirements.

In addition, the use of acquisition reform initiatives by the PM provided for a straightforward evaluation by the SSEB. The SSEB provided the basis for a sound decision by the SSA. This fact is most significant. The SSA pointed out that the two leading offerors were nearly balanced between performance with supportability and schedule with price/cost. Weighing in some of the qualitative differences, the SSA chose the proposal with the best value. These qualitative differences were part of the applied acquisition reform initiatives such as performance credit and commonality between the ICV and MGS variants. Therefore, in spite of the fast pace at which the whole program moved, which brings on the higher probabilities of error, the GAO supported the Army's production award decision.

Finally, I recommend that the Army add this case to the Defense Acquisition Deskbook as an example of a positive outcome stemming from the use of acquisition reform. One can clearly see how acquisition reform was used across the whole spectrum

of initiatives. From a highly trained acquisition workforce listening to their industry partners to a detailed Statement of Work attachments and novel Table LM, the PM developed a program that delivered a commercially available product that was executable within the given time constraints that meets the users needs. This was all accomplished while maintaining a sight on the end-state, which was to deliver integrated off-the-shelf technology as an interim solution to the Army's present needs. The acquisition schedule should be the model by which future programs can mold themselves.

The unusual spirit of cooperation between the senior Army management, combat developer, materiel developer, tester, and offeror/contractor surely made this program a success. The only limitation might be trying to apply this model to programs needing longer development time; it appears to be too speedy to support a drawn out development process.

## C. RECOMMENDATIONS FOR FURTHER RESEARCH

I therefore recommend the following for further research:

1. Conclusively determine if the capabilities delivered by the IAV vehicles meet the Army's need for a strategically deployable force. This includes the deployability, mobility, survivability, and lethality that are inherently necessary for the BCT to be effective in its role.

2. After fielding, reinvestigate the effects of acquiring the IAV vehicles using acquisition reform and accelerated acquisition. Two to three years after

fielding, the effectiveness of the LAV III, to meet the Army's needs, will be more clear. This will reevaluate the basic question; Did the Army move too fast?

3. Document the deployment of off-the-shelf vehicles and how they have affected the Army's Future Combat System. That is, since off-the-shelf combat vehicles were acquired in 2001 and the technology break point for FCS is only 2003, should the Army delay the FCS program to achieve a larger leap ahead in technology?

4. Operation and support savings (i.e., decreased supportability) predictions were a contributing factor in the source selection process of the IAV. What O & S savings has the Army really achieved by buying a medium weight, wheeled vehicle system?

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## LIST OF ACRONYMS

**-A-**

| | |
|---|---|
| ACAT ID | Acquisition Category ID (DoD level approval) |
| ACR | Armored Calvary Regiment |
| ADEA | Army Development and Employment Agency |
| AGMS | Armored Ground Mobility System |
| AGS | Armored Gun System |
| AMC | Army Materiel Command |
| AoA | Analysis of Alternatives |
| APBI | Advance Planning Brief to Industry |
| APS | Army Posture Statement |
| ASARC | Army Systems Acquisition Review Council |
| ATC | Aberdeen Test Center |
| ATEC | US Army Test and Evaluation Command |
| ATGM | Anti-Tank Guided Missile vehicle |
| AUSA | Association of United States Army |

**-B-**

| | |
|---|---|
| BCT | Brigade Combat Team |
| BMDO | Ballistic Missile Defense Office |
| BRAC | Base Realignment and Closure |

**-C-**

| | |
|---|---|
| C4ISR | Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance |
| CAIV | Cost as an Independent Variable |
| CBD | Commerce Business Daily |
| CBTDEV | Combat Developer |
| CD | Compact Disc |
| CE | Comparative Evaluation |
| CFE | Contractor Furnished Equipment |
| CLS | Contractor Logistics Support |
| COL | Colonel, Army |
| CONUS | Continental United States |
| CPAF | Cost-Plus-Award-Fee |
| CPIF | Cost-Plus-Incentive-Fee |
| CSA | Chief of Staff of the Army |
| CV | Commander's Vehicle |

**-D-**

| | |
|---|---|
| DAB | Defense Acquisition Board |
| DoD | Department of Defense |

**-E-**

| | |
|---|---|
| EMI | Electromagnetic Interference |
| ESV | Engineer Squad Vehicle |
| EXSUM | Executive Summary |

**-F-**

| | |
|---|---|
| FAR | Federal Acquisition Regulation |
| FCS | Future Combat System |
| FFP | Firm Fixed Price |
| FMTV | Family of Medium Tactical Vehicles |
| FSV | Fire Support Vehicle |
| FUE | First Unit Equipped (FUE) |
| FY | Fiscal Year |

**-G-**

| | |
|---|---|
| GAO | General Accounting Office |
| GFE | Government-Furnished Equipment |
| GEN | General (Army Four Star) |
| GIGO | Garbage In Garbage Out |
| GM | General Motors |
| GM/GDLS | General Motors/General Dynamics Land Systems, L.L.C. |
| GO | General Officers (One Star and above) |

**-H-**

| | |
|---|---|
| HEMMT | Heavy Expand Mobility Medium Truck |
| HTTB | High Technology Test Bed |
| HQTRADOC | Headquarters Training and Doctrine Command |
| HMMWV | High Mobility, Multi-purpose, Wheeled Vehicle |

**-I-**

| | |
|---|---|
| IAV | Interim Armored Vehicle |
| IBCT | Interim Brigade Combat Team |
| ICV | Infantry Carrier Vehicle |
| ID | Infantry Division |
| IFD | Item for Discussion |
| IFB | Invitation for Bid |
| ILO | In Lieu Of (instead of) |
| IOC | Initial Operational Capability |
| IPT | Integrated Product Team |
| ITV | Improved TOW Vehicle |

**-K-**

| | |
|---|---|
| KPH | Kilometers Per Hour |
| KPP | Key Performance Parameter |

**-L-**

| | |
|---|---|
| LAV | Light Armored Vehicle |
| LAV-III | Light Armored Vehicle, third generation, General Motors of Canada |
| LRIP | Low Rate Initial Production |
| LTC | Lieutenant Colonel, Army |
| LTG | Lieutenant General (Army Three Star) |

**-M-**

| | |
|---|---|
| M&S | Modeling and Simulation |
| MAV | Medium Armored Vehicle |
| MAJ | Major, Army |
| MANPRINT | Manpower and Personnel Integration |
| MATDEV | Materiel Developer |
| MEV | Medical Evacuation Vehicle |
| MCT | Medium Combat Team |
| MC | Mortar Carrier vehicle |
| MGS | Mobile Gun System |
| MG | Major General (Army Two Star) |
| MTW | Major Theatre War |

**-N-**

| | |
|---|---|
| NBC | Nuclear Biological and Chemical |
| NBCRV | Nuclear Biological and Chemical Reconnaissance Vehicle |
| NET | New Equipment Training |
| NOTT | New Organizational Team Training |

**-O-**

| | |
|---|---|
| O&O | Operational and Organizational |
| OIPT | Overarching Integrated Product Teams |
| OPTEMPO | Operational Tempo |
| ORD | Operational Requirements Document |
| OSD | Office of the Secretary of Defense |
| OSD PA&E | Office of the Secretary of Defense, Program Analysis and Evaluation |

**-P-**

| | |
|---|---|
| PBS | Public Broadcasting System |
| PCO | Procurement Contracting Officer |
| PDOS | Production & Deployment, Operations & Support |
| PEO- GCSS | Program Executive Office for Ground Combat Support Systems |
| PLT | Procurement Lead Time |
| PM | Program Manager |
| POM | Program Objective Memorandum |
| PM-BCT | Program Manager – Brigade Combat Team |
| PPD | Platform Performance Demonstration |

**-Q-**

| | |
|---|---|
| Q&A | Question and Answer |

**-R-**

| | |
|---|---|
| RAM | Reliability, Availability, Maintainability |
| RFP | Request for Proposal |
| RV | Reconnaissance Vehicle |

**-S-**

| | |
|---|---|
| SAMP | Single Acquisition Management Plan |
| SASO | Stability and Support Operations |
| SDD | System Development and Demonstration |
| SMA | Sergeant Major of the Army |
| SME | Subject Matter Experts |
| SSC | Small Scale Contingency |
| SPI | Single Process Initiative |
| SSA | Source Selection Authority |
| SSAC | Source Selection Advisory Council |
| SSEB | Source Selection Evaluation Board |
| SOW | Statement of Work |
| SOO | Statement of Objectives |

**-T-**

| | |
|---|---|
| TACOM | US Army Tank-automotive and Armaments Command |
| TARDEC | Tank Automotive Research, Development, and Engineering Center |
| TRAC | TRADOC Analysis Center |
| TRADOC | US Army Training and Doctrine Command |
| TSM | TRADOC Systems Manager |
| TSM-IAV | TRADOC Systems Manager, Interim Armored Vehicle |
| TTPs | Tactics, Techniques, and Procedures |

**-U-**

| | |
|---|---|
| UDLP | United Defense Limited Partnership |

**-W-**

| | |
|---|---|
| WSAR | Weekly Significant Activities Report |

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