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THE RIDE OF YOUR LIFE – ENABLING THE URGENT UNIVERSAL NEEDS STATEMENT PROCESS

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Biography

Colonel Gabri was previously assigned to the Second Marine Division G4, Second Marine Expeditionary Force, Camp Lejeune, North Carolina where he served as Chief of Logistics (G4) for the Division. He was commissioned through the Officer Candidate Class in 1986. Colonel Gabri earned a Bachelor of Science Degree in Accounting from Clarkson University and a Masters Degree in Strategic Studies from the Naval War College in 2001. Colonel Gabri has also served in the Exercise Directorate (G7) at Joint Force Command, as Commander of the Marine Ground Supply School, and numerous other operational billets.

Introduction

> "Second Lieutenant Saenz USMC had just spent hours leading his platoon through one of the most excruciating battlefield jobs — inching a convoy along the crumbling streets of Fallujah, searching for homemade bombs planted in the asphalt or dirt. The night before had proved dangerous. Two bombs had blown up underneath Saenz's convoy, including one beneath his vehicle. As Saenz turned through the gray blast walls protecting the base, he says he couldn't help but think if he had been riding a HMMWV, he wouldn't be alive now. Earlier that month, his platoon in the 6th Marine Regiment Combat Team had replaced its HUMMWVS with MRAP vehicles. The two blasts produced just one injury, a Marine whose concussion put him on light duty for a week. Saenz stated that he was probably in the safest vehicle ever designed for military use. During three months of duty, Saenz and his platoon encountered eleven bomb attacks with no fatalities."[1]

Second Lieutenant Saenz had just experienced the ride of his life. According to last count, four thousand two hundred thirty nine (4,239) US lives were lost in Iraq and six hundred forty one (641) US lives were lost in Afghanistan with many more thousands wounded in both locations. Perhaps as a surprise to many, approximately seventy five percent of the US combat casualties in Iraq and Afghanistan were attributed to improvised explosive devices (IEDS), rocket propelled grenades, explosively formed penetrators, and land mines.[2] In 2003, the United States Marine Corps attempted to mitigate the threat of these weapons by acquiring a new armored vehicle called the High Mobility Multi-Wheeled Vehicle (MRAP) using a "tailored" acquisition process the Marine Corps referred as the *Urgent Universal Needs Statement (UUNS) Acquisition Process*.[3] While the *UUNS Acquisition Process* facilitated the production of a very capable armored vehicle in months rather than years, there were serious issues associated with the acquisition particularly as it

[1] USA Today, "Pentagon Balked at Pleas for Safer Vehicles," http://www.usatoday.com/news/military/2007-07-15-ied-cover_N.htm 22 August 2007, p. 8
[2] Defense Casualty Report 2008, www.defenselink.mil/news/casualty.pdf 1 February 2009
[3] Each service uses a different acronym to define the new acquisition process. The Army refers to this type of acquisition as the Rapid Equipping Forces/Operational Needs Statement; the Navy as Capability Rapid Deployment, Air Force as the Combat Capability Document, and SOCOM as Combat Mission Needs Statement.

applied to manufacturing, asset visibility, sustainability and maintenance. To mitigate future challenges with this acquisition process, an "enhanced" *UUNS Acquisition Process* should be developed. The enhanced process should incorporate the best qualities of the current *Evolutionary* and *UUNS Acquisition Processes.* Once instituted, contracting officers, financial managers, and program managers must institute additional management controls, oversight measures, including a metrics and a feed-back mechanism. Equally critical, program managers must complete a comprehensive Doctrine Organization, Training, Material, Leadership, Personnel, and Facilities (DOTMLPF) study prior to, or conjunction with, a significant equipment acquisition.

Background/Historical Perspective

Conceived in 2002, the *UUNS Acquisition Process* provided a means for operating forces to identify and forward new requirements for weapons and equipment through a service or joint chain of command. Quickness was the key advantage of this process. In as little as 90 days a requirement was reviewed, approved, and delivered to the operational unit. Compared to the more commonly used E*volutionary Acquisition Process*, the *UUNS Acquisition Process* provided a product in months rather than a decade for the end user.[4]

While an operational commander may find the timliness of the *UUNS Acquisition Process* difficult to resist, it has limitations. First, an *UUNS Acquisition Process* may only be used in unit operations where the absence of the equipment unduly increases the chances of casualities or adversely affects the outcome of a mission. Second,

[4] GAO Testimony Before the Committee on Armed Services, US Senate, "Better Weapon Program Outcomes Require Discipline, Accountability, and the Fundamental Changes in the Acquisition Environment" GAO-08-782T 3 June 2008 p. 8

the *UUNS Acquisition Process* tended to create unintended supportability concerns severe enough to negatively impact mission readiness and the direction of a true military transformation. Ultimately, the type of acquisition process used often depends on the amount of risk the Marine Corps desires to undertake. The *Evolutionary Acquisition Process* often incorporates new technologies, fields a new product over a longer duration, however it allows for new innovations to be incorporated throughout development, and usually with a well developed plan for sustaining the capability over its expected life. The *UUNS Acquisition Process* typically focuses on mature technologies, delivers the equipment in months versus years, but rarely has a well developed life-cycle plan.

Methodology

This research project will highlight inherent strengths and weakness of the *UUNS Acquisition Process* using one of the Marine Corps and the Department of Defense's (DoD) largest military equipment acquisitions, the MRAP. To accomplish this task, I will highlight the current Marine Corps acquisition options, as well as identify the challenges the Marine Corps and DoD must overcome in order to be more efficient, effective, and a more transformational military force.

Weighing the Options

To appreciate the acquisition dilemma, it is important to understand the frame-work of each acquisition process and the perspective of the individual requesting the equipment. Both the *Evolutionary* and *UUNS Acquisition Process* contain desirable elements for a commander, a financial manager, an elected government official, and the general public. Consideration for one option being preferred over another may be based on many factors. For example, the *Evolutionary Acquisition Process* is more desirable

than another when initial procurement costs and life cycle management is high and the technologies being introduced into the product are immature. However, if the equipment is needed quickly, the technologies being introduced to the new product are mature, and life cycle management is not heavily emphasized, the *UUNS Acquisition Process* is more desirable. Unfortunately, the best elements of the *Evolutionary* and *UUNS Acquisition Process* have not been incorporated into a single DoD acquisition program.

Evolutionary Acquisition Process

The *Evolutionary Acquisition Process* is the first (and ideal) choice for a majority of the DoD equipment acquisitions. The key characteristic of this process is a long lead time between initial product requirement and product delivery. Typically, delivery of a product can take a decade or more to produce however there are several opportunities to test proto-types through various phases of development and to import new technologies. The process contains six separate phases and incorporates an extremely detailed acquisition structure, multiple opportunities for technologies to mature, a lengthy timeline to access alternative options, a constant awareness by numerous senior level program managers through delivery of the equipment, and generally requires a sizable investment.[5]

During the Concept Refinement Phase, a contracting officer reviews the initial request and provides an Initial Capabilities Document (ICD) resulting from analysis of potential concepts across the DoD. The phase is completed when the Milestone Decision Authority (MDA) approves a solution and the associated Technology Decision Strategy.[6]

[5]Requirements and Acquisition Depiction, https://akss.dau.mil/dag/DoD5002/DoD5002-3.3.asp Sect.3.3.2.1 through 3.3.2.2.2,

[6]Requirements and Acquisition Depiction, https://akss.dau.mil/dag/DoD5002/DoD5002-3.3.asp sect. 3.5.1 through 3.5.5

During the Technology Development Phase, a determination is made to the appropriate set of technologies to be integrated into the overall system. For example, it is common to have multiple technology development demonstrations before the user and the developer where both agree that a proposed technology solution is affordable, military useful, and based on evolving technology.[7]

Upon conclusion, the requirement moves into the System Development and Demonstration Phase. It also marks the beginning of Milestone "B." During this phase incremental or full system capabilities are typically developed and operational supportability of components are assured. Also included is the entrance criteria and system integration where approved requirements are matched with the technology, and subsystems are integrated with the detailed design. Typically, there is a demonstration of prototype articles or engineering development models.[8]

Once a prototype is approved, the acquisition moves into the Production and Deployment Phase. Milestone "C" also begins at this phase. The purpose of this phase is to achieve an operational capability that satisfies mission needs. Also, careful scrutiny is made to ensure the operational capability of the equipment continues to match the overall mission needs. If the operational capability meets the mission needs then the DoD will financially commit to the project.

Upon completion of the proceeding phase, the acquisition moves into to the Entrance Criteria Phase. One of the main highlights of this phase is a determination the system is affordable throughout its entire programmed lifecycle. Additionally, a low rate of initial production is begun where the requesting service receive the first prototype. Eventually,

[7] Ibid, sect 3.7.1 through 3.7.6.6
[8] Ibid, sect 3.7.5 and 3.7.6

full rate production is begun where requesting units are provided the necessary equipment to attain Initial Operation Capability which is typically defined at approximately 75% of the desired quantities [9]

In the Operation and Support Phase, a support program is executed to ensure the system is produced in the most cost effective manner. This phase also includes the sustainment effort where supply maintenance, transportation, sustaining, engineering, data management configuration management, training, survivability, and disposal efforts are coordinated.[10]

A recent example for the *Evolutionary Acquisition Process* is the Army Bradley Fighting Vehicle. From conception of requirement to the fielding of the vehicle, the acquisition process lasted approximately twelve and one half years. Fortunately, the fielding requirement for the Bradley Fighting Vehicle was less critical than the MRAP, otherwise a significant number of lives would have been jeopardized awaiting the vehicle delivery. Based on the steps identified above, the *Evolutionary Acquisition Process* lacks the agility to meet the changing war-fighter demands and is poorly suited for meeting urgent requirements during ongoing operations.[11]

Urgent Universal Needs Statement Process

The second option is the *UUNS Acquisition Process*. Conceived in 2002, the *UUNS Acquisition Process* receives overwhelming praise for its ability to quickly meet wartime equipment needs of the operating forces. The key elements of this four phase process includes a short-term focused review which validates a requirement, prototype

[9]Ibid, sect. 3.8.1 through 3.8.5
[10] Ibid sect 3.9.1 through 3.10.4
[11] GAO Testimony Before the Subcommittee on Seapower and Expeditionary Forces Committee on Armed Services, House of Representatives, "Rapid Acquisition of Mine Resistant Ambush Protected Vehicles" GAO-08-884R 15 July June 2008 p. 12-13

development, and a finished product using funds not programmed in the Planning, Programming, Budgeting and Execution (PPBE) Process.[12]

The first phase of the *UUNS Acquisition Process* is the Needs Identification Phase. During this phase, a senior Marine Expeditionary Force (MEF) Commander identifies a capability gap and submits an acquisition request to the Marine Forces Command (MARFORCOM) staff for review. Once the staffing of the request is completed, the request is forwarded to the Maine Force Commander for final review and approval.[13]

Upon approval by the Marine Force Commander, the request moves into the Requirements Determination Phase. During this phase the request is forwarded to Headquarters Marine Corps Combat Development and Integration Board (HQMC, CDIB) for review and approval. If the request is approved with little/no modifications, HQMC, CDIB will forward the request to the Marine Requirements Oversight Committee (MROC) for approval, then to Headquarters Marine Corps Program and Resources (HQMC, P&R) to determine how the equipment will be resourced.[14]

The last phase is the Acquisition Phase, and it is managed by the Marine System Command (MCSC). In theory, MCSC will determine the appropriate procurement quantities, propose a fielding schedule for Marine Corps units to receive the equipment, and then develop a means to sustain the equipment over its anticipated life cycle, or until it is no longer desired by the Marine Corps operational forces.[15]

Listed in figure 1 is a schematic for the *UUNS Acquisition Process*.

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[12]Inspector General of the Marine Corps, " 2008 Iraq Readiness Assessment, 30 May 2008, p. 13-15

[13]CMC Washington DC Message R 261600Z, "Urgent Universal Needs Statement (UUNS) Process, p. 1
[14] CMC Washington DC Message R 261600Z, "Urgent Universal Needs Statement (UUNS) Process, p. 2
[15] Ibid, p. 3

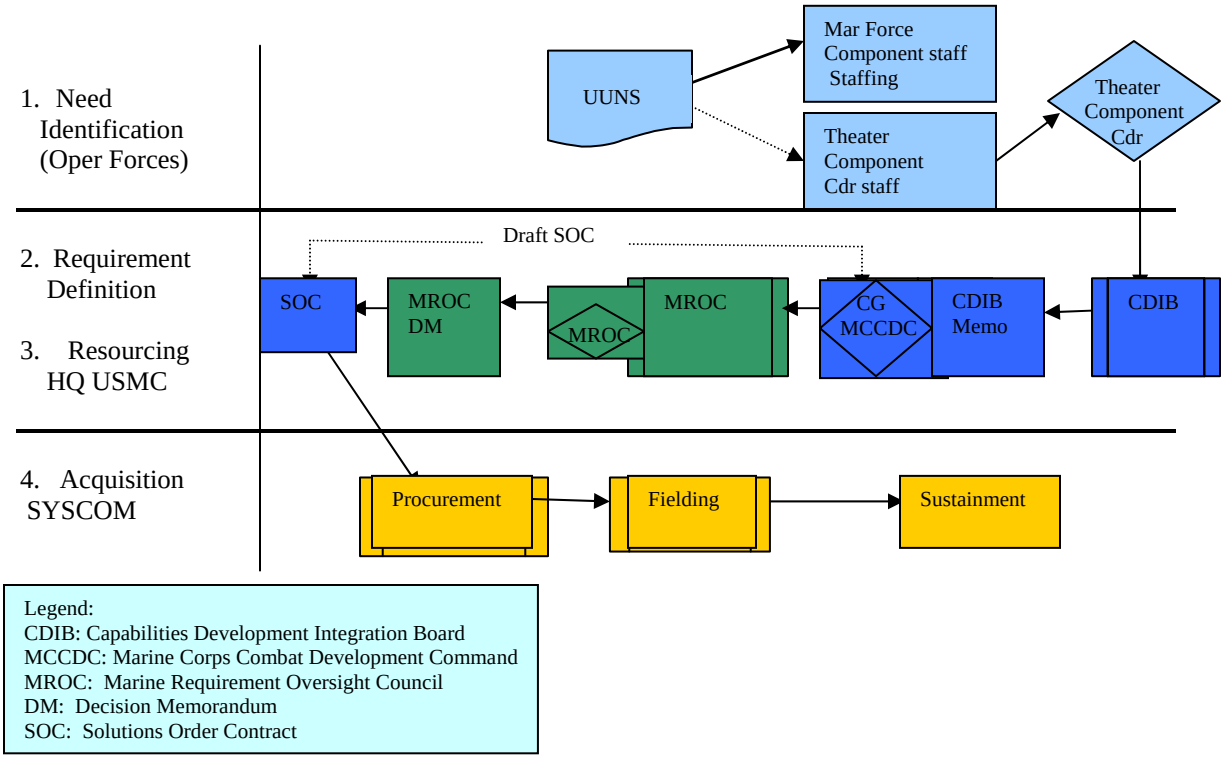

Figure1. Sample UUNS Acquisition Process [16]

The most significant equipment acquisition for the USMC using the *UUNS Acquisition Process* is the Mine Resistant Antipersonnel Protection (MRAP) vehicle. Unlike the Bradley Fighting Vehicle which took over a decade to design, develop, and field, the entire process for the MRAP acquisition took approximately ten months.[17]

Criticality of the MRAP

The MRAP was conceived to replace the venerable HMMWV. For nearly three decades, the HMMWV performed its prescribed personnel transportation and command and control mission admirably during Desert Storm, Bosnia, and through the early phases of Operation Iraqi Freedom and Enduring Freedom. However, its relatively lightweight

[16] Inspector General of the Marine Corps, " 2008 Iraq Readiness Assessment, 30 May 2008
[17] Gayl, Franz J., " Mine Resistant Ambush Protected Vehicle (MRAP)" Information Operations and Space Integration Branch (PLI), Headquarters, United States Marine Corps 22 January 2008 p. 41

construction and thin skinned design limited it as a support vehicle to a benign environment, where asymmetric warfare was not actively conducted. As US and coalition military casualties mounted in Iraq, initial efforts to up-armor the vehicles with reinforced steel plating met with mixed results. While personnel survivability increased slightly from the vehicle reinforcement, the lifespan of the vehicle decreased dramatically as the HMMWV engines, suspension systems and structural fatigue became increasingly prevalent.[18] In 2004, the Marine Corps pressed for a more survivable and robust tactical vehicle. Designers and engineers responded and quickly developed the MRAP.

Unlike the HMMWV, the MRAP is designed to provide protected ground mobility for US military forces. The vehicle is capable of safely operating in a non-linear threat environment involving ambushes, mines, improvised explosive devices, rocket propelled grenades, explosively formed penetrators, and small arms fire which are responsible for most casualties in Iraq and increasingly in Afghanistan. One of the key design characteristics of this vehicle is the "v" shaped hull. The unique hull deflects blasts away from the undercarriage of the vehicle and away from the occupants. Its sheer size, and intimidating contours matches the general size of its distant cousin, the Medium Tactical Vehicle Replacement (MTVR), but unlike the MTVR all variants of the MRAP are heavier (14,000 to 46,000 pounds) and offer better protection to occupants. The extra weight of a MRAP also contributes to its cost. Depending on the MRAP variant, the vehicle cost is somewhere between $500K to $1M per vehicle, or approximately four to eight times the cost of a HMMWV. With that stated the fielding of the MRAPS to U. S. military forces in forward operating areas have been extremely positive as mine related

[18]Center for Strategic and Budgetary Assessments, "Of IEDS and MRAPS: Force Protection in Irregular Operations, 2007, p. 2

injuries have been reduced over 70% and fatalities have been virtually eliminated.[19] In fact, one report suggests the casualty rate while riding in the MRAP is currently about 6% making it the most survivable vehicle the US has in its arsenal by a multitude. By comparison, the M1 Abrams Tank is said to have a casualty rate of 15% and the up-armored HMMWV a casualty rate of 22%.[20]

Awarding the MRAP Contract

The MRAP contract was not just another acquisition program within the DoD. Recent estimates value the MRAP contract at approximately 7.61 Billion Dollars; and include little extras other than transportation costs and approximately one year worth of Contracted Logistics Support (CLS). Based on FY 2007 statistics, it is the third largest acquisition program behind the missile defense program and the Joint Strike Fighter. Equally important, the MRAP program was perhaps the most significant rapid acquisition program the Marine Corps and DoD conducted since the end of World War II according to the Under Secretary for Defense for Acquisition and Director of the Pentagon's MRAP Task Force.[21]

Initial orders for the MRAP were generated by the I MEF Commander in late 2003. However, relative inexperience of the *UUNS Acquisition Process* within the Marine Corps Tactical Vehicle Directorate and the questionable delegation to the Marine Corps Installations and Logistics (I&L) Directorate to serve as the lead advocate for the MRAP vice the Ground Combat Element (GCE) Directorate created months of

[19] Gayl, Franz J., " Mine Resistant Ambush Protected Vehicle (MRAP)" Information Operations and Space Integration Branch (PLI), Headquarters, United States Marine Corps 22 January 2008 p.3
[20] Congressional Research Service (CRS) Report For Congress, "Mine Resistant Ambush Protected (MRAP) Vehicles: Background and Issues for Congress, 6 June 2008, p. 3
[21] Congressional Research Service (CRS) Report For Congress, "Mine Resistant Ambush Protected (MRAP) Vehicles: Background and Issues for Congress, 21 August 2008, p. 6

unnecessary delays. Further challenges such as a risk adverse civilian middle management who lacked technical and operational currency and a naïve attempt to include the MRAP requirement within a set of disparate HMMWV follow-on Joint Light Tactical Vehicle (JLTV) initiatives unnecessarily delayed the acquisition for months eventually causing the initial request to be cancelled and later re-initiated.[22] Once the process was clarified, the MRAPS began arriving to the Marine Corps in mid-2005.

During the spring of 2006, IED problems in Iraq continued to negatively impact other U.S. military forces serving in-country besides the Marine Corps and necessitated additional means to obtain MRAPS. The Combined Joint Task Force Head Quarters Multinational Forces West (MNFI-W) Commander determined the joint variation of the *UUNS Acquisition Process*, referred as the Joint Universal Operational Need Statement (JUONS), would be used to assure availability of MRAPS for the other military services. A total of 15,705 MRAPS were subsequently ordered. By 2006, other US military services began receiving their allotment of vehicles which included twelve thousand (12,000) vehicles for the Army, two thousand two hundred twenty five (2,225) vehicles for the Marines, and the remainder of the vehicles going to the Air Force, Navy and Special Operations Command.[23] During the latter part of that year, the Secretary of the Defense designated the Joint MRAP program the top procurement initiative in the DoD.[24]

[22] I Marine Expeditionary Force Presentation to OSD, DDR&E, "I MEF Forward: Science and Technology Observations6 February 2007, p. 6

[23] GAO Testimony Before the Subcommittee on Seapower and Expeditionary Forces Committee on Armed Services, House of Representatives, "Rapid Acquisition of Mine Resistant Ambush Protected Vehicles" GAO-08-884R 15 July 2008 p. 4

[24] Gayl, Franz J., " Mine Resistant Ambush Protected Vehicle (MRAP)" Information Operations and Space Integration Branch (PLI), Headquarters, United States Marine Corps 22 January 2008 p. 14-18

Differing Positions

There were two widely held positions concerning the *UUNS Acquisition Process* for the MRAP. First, the quick response to procure MRAP'S has saved countless lives and reduced injuries to military forces in theater. Another group asserts the cost, scheduling and performance failures associated with the MRAP acquisition created significant budget strains on the services and maintaining serviceability of its 10 year expected life would be problematic. Despite the criticism, the Marine Corps leadership decided move forward and replace all up-armored HMMWVS in theater with MRAPS beginning in February 2007.[25]

Challenges for USMC and DOD

In order to accomplish the ambitious MRAP requirement, the Office of The Secretary of Defense (OSD) initiated a JUONS to supplement the Marine Corps UUNS acquisitions. A bi-product of the joint effort was to add more MRAP vendors to ensure increased quantities of MRAPS were produced in the timeframe desired. Each vendor received limited design parameters from the DoD, and each vendor produced models they believed were most desirable. Unfortunately, the various models were often incompatible between MRAP vendors, they lacked commonality of repair parts, and in-transit visibility for the MRAP was virtually non-existent once the MRAPS left the assembly line. The limited visibility had a cascading affect to the program managers who struggled to coordinate timely installation of sensitive Government Furnished Equipment (GFE) in theater. MRAPS in theater often experienced mechanical breakdowns in the harsh operational environment. However, Field Support Representatives (FSR) and

[25] Congressional Research Service (CRS) Report For Congress, "Mine Resistant Ambush Protected (MRAP) Vehicles: Background and Issues for Congress, 24 January 2008, p.2

Marine Corps Maintenance personnel quickly discovered repairs would be challenging due to a shortage of repair parts from either the vendor or the DoD Supply System. Finally, formalized military training did not exist thus leaving critical gaps in the maintenance of this vital piece of military equipment.

A good visual is provided below in figure 2 to explain the challenges that can occur when production, quality, cost, scheduling, or performance shifts.

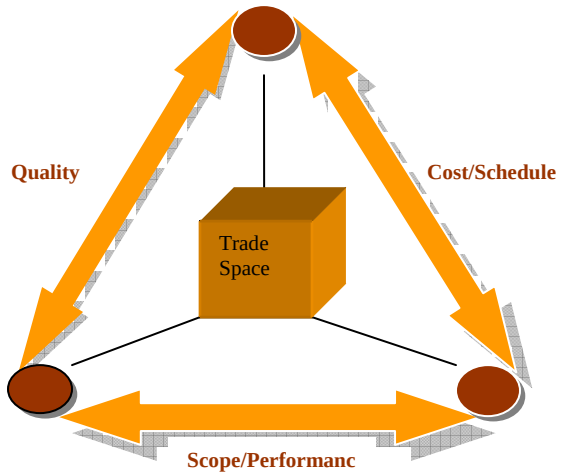

Figure 2. The Triple Constraint System[26]

For example, if vendors produce MRAP models slightly different from another vendor, the scope/performance axis extends causing the other (quality and cost/schedule) axis to extend as well. Therefore, it was important to note that modifying any single element (i.e. quality, cost, schedule, scope, or performance) would almost assuredly increase/decrease the cost and delay the equipment. The actual acquisition process was so precarious that a Marine Corps Science and Technology Advisor "stated before a

[26] Defense Acquisition Journal, "Lessons Learned in Acquisition Management", Summer 2007, p. 386

Congressional Acquisition Oversight Committee that "the entire *UUNS/JUONS Acquisition Process* was wrought with serious challenges and conveys an appearance that it is less reactive and slower than the conventional (evolutionary) acquisition process."[27]

Manufacturing

The *UUNS Acquisition Process* for the MRAP requires multiple vendors because a single vendor was unable to provide the quantities of MRAPS in the time required. The Marine Corps eventually received MRAPS from five different vendors, with each MRAP being slightly different from another vendor, and each vendor produced one or more of the twenty seven different MRAP variants. Naturally, this dilemma created a severe burden to the equipment maintainers, financial managers, and to the Marine Corps Supply System particularly when high usage repair parts had to be maintained on the supply shelves. Finally, contracting officials received little or no feed-back from the maintainers or users on the effectiveness of the gear that was fielded creating potential short-falls on what was actually needed. Clearly, a better feed-back method was required before resources were expended. [28]

In-Transit Visibility/Transportation

Maintaining visibility of the MRAPS throughout the inter-transportation and intra-transportation process proved challenging. During MRAP shipments within the continental US, the limited MRAP visibility was attributed to the failure of MRAP transporters to effectively report exact locations and transit times to Marine Corps Program Managers and Contracting Officials through a web-based Purchase Request

[27] Defense.com, "Process For Handling Marines Urgent Needs Deemed Ineffective," http://www.insidedefense.com/public/Navy-20-42-6.asp, 7 Oct 2008 p. 1
[28] Stars and Stripes, "Corps Says it is Working to Address Procurement Issues," http://www.leatherneck.com/forums/archive/index.php/t-61674.html, 27 February 2008, p. 1

(PR) Builder. PR Builder was the Marine Corps web-based tool that provided functionality for routing and interfaces with the Marine Corps financial system. In multiple occasions as MRAPS were transported by rail or tractor trailers to intermediate staging areas, contracted transporters frequently failed to notify appropriate the program managers to the current location of MRAP while in-transit. Visibility challenges continued once the MRAPS were shipped outside the US from a major sea/air port of debarkation (e.g. Charleston SC) to Kuwait. When the MRAPS arrived in Kuwait, they were typically placed into a staging lot where further inspections and modifications were conducted on them. From this point, the MRAPS locations were identified to the forward-based Marine Corps commanders and staff via the Warrior Open Purchase Request Router (WOPRR). The WOPRR operates similar to the PR Builder, although with less overall capability. WOPRR was used exclusively in forward operating areas but it does not interface with PR Builder. Consequently, the limited visibility provided by the two systems created unnecessary challenges to FSR/CLS as they tried to coordinate the installation of mission essential equipment such as communication, situational awareness systems, and other specialized components to the MRAPS arriving in theater. With the unnecessary delays associated with limited in-transit visibility, approximately 30 days were added to the delivery process.[29]

Maintenance

Because the *UUNS Acquisition Process* failed to include a traditional support frame-work, the maintenance for MRAPS was handled exclusively by a civilian cadre referred as FSR or CLS contracts. As MRAPS arrived in theater from the various vendors, FSR'S

[29] GAO Testimony Before the Subcommittee on Seapower and Expeditionary Forces Committee on Armed Services, House of Representatives, "Rapid Acquisition of Mine Resistant Ambush Protected Vehicles" GAO-08-884R 15 July 2008 p. 4

from one of the five vendors prepared the MRAP for the end-user. Often, the process of preparing an MRAP differed depending on the vendor, the type of vehicle, and the military service using the vehicle, and it was not uncommon that a lack of standardization existed with placing GFE on the MRAPS. Adding to the challenges, the uncertainty of when vendor arrived in theater further delayed the use of the vehicle by days, weeks, or months. Relating to this delay, two separate DoD reports concluded the geographical assignments of the FSR/CLS were inadequate to meet the needs of the geographically disbursed units. "FSR's were grouped heavily at a port of entry, but were sometimes deficient or altogether absent at an operational unit where MRAP maintenance was required. The key explanation to this oversight suggested limitations imposed when the contract was established and the command relationship assigned to the contractor (s) overseeing the MRAP acquisition."[30]

Long-term life cycle maintenance was an additional concern. As FSR/CLS contracts in Iraq were beginning to expire, military personnel assumed the sole responsibility for sustaining the MRAPS despite a lack of formalized training. Adding to that challenge, administrative errors were being reported as a growing amount of MRAP repair parts were erroneously being assigned a National Stock Number (NSN) and Table of Allowance Material Control Number (TAMCN) without regard to MRAP vendor, variant, or the service support unit. Finally, in the few instances where an MRAP sustained extensive damage, the *UUNS Acquisition Process* did not support the theater requirement to dispose of assets as they became unserviceable and no longer needed. [31]

[30] Inspector General of the Marine Corps, " 2008 Iraq Readiness Assessment, 30 May 2008 p.12-13
[31] Inspector General of the Marine Corps, 30 May 2008, p. 7

Contractor Command and Control

The FSR/CLS were administratively controlled by the contracting division at MARFORCOM but operationally controlled by the Multi National Force-Iraq/Multi National Force-West (MNF-I/MNF-W) commander. While the assignment of administrative and operational control to separate organizations were perhaps necessary, the arrangement posed challenges for the MNF-I/MNF-W staff because of the number of contracts being supported and the number and dispositions of FSR/CLS in the Iraqi area of operations. Additionally, the continuity of personnel suffered as FSRS only remained in theater a few months at a time. Once they departed, the efficiency and effectiveness within that unit became temporarily degraded.[32]

Program Affordability

While the UUNS contracting strategy helped maximize vehicle production for the short-term, funding issues continued to be an issue. Beginning with transportation costs, military air or sealift was not readily available and costs for transporting MRAPS were not programmed into a services budget. For example, depending on the sense of urgency, movement of MRAPS into theater, via contracted sea movement costs approximately $18,000 per unit and for air travel approximately $135,000 per unit.[33] Once MRAPS arrived in theater, they required additional customization before being assigned to the user. Additionally, the Marine Corps funded the MRAP program through a supplemental appropriation or reprogramming of funds already appropriated for other programs. Over the long term, life cycle costs for the MRAP will significantly affect the Marine Corps

[32] Aldrich, Michael, "Senior Officer Visit to FPI FSR's in Active Theater of Operation," Event Report 29 April -19 May 2008, p.2-4

[33] Congressional Research Service (CRS) Report For Congress, "Mine Resistant Ambush Protected (MRAP) Vehicles: Background and Issues for Congress, 21 August 2008, p. 4

future budget because the costs to develop and produce the MRAP account for only 28% of the total ownership costs. The remaining (72%) operating and support costs typically represents the highest portion of the total ownership cost of a MRAP because it includes the cost to operate the system and keep it ready for action for many years. In a July 2008 study, the Government Accounting Office (GAO) reported the estimated acquisition costs needed to complete the MRAP acquisition program increased almost 120% while the actual funding for the program only increased 57%. The net result is that a fiscal "bow wave" may be unsustainable particularly if the MRAP approaches or exceeds an estimated fifteen year life-span.[34]

DOTMLPF

A universally known product assessment referred as DOTMLPF was normally completed upon a major fielding of equipment, specifically to determine if there were any shortfalls of the product provided to the operational unit. In the case of the MRAP, the DOTMLPF assessment was completed in a cursory fashion, and consequently failed to provide adequate information and guidance to the MCSC. For example, when the MRAP was considered for the Marine Corps inventory a comprehensive study to determine the expected life of the equipment and the cost associated with maintaining it until the end of its life-cycle, expeditionary capability was not fully considered. Additionally, the MRAP did not enter the Marine Corps inventory with an adequate spare parts, maintenance, performance sustainability, training, and cost risks. In Iraq, some special equipment items

[34] GAO Testimony Before the Subcommittee on Sea power and Expeditionary Forces Committee on Armed Services, House of Representatives, "Rapid Acquisition of Mine Resistant Ambush Protected Vehicles" GAO-08-884R 15 July 2008 p. 12

were issued without TAMCN, or multiple TAMCN's were issued by the theater intermediate support units.[35]

Culture

While the protection afforded by the reinforced MRAP'S is difficult to refute, there are "hard-core" Marine Corps expeditionary advocates who believe the MRAP is an anathema for the Marine Corps. Its sheer size, weight, unwieldy handling in restrictive environments, extensive logistical requirements, and its inability to be transported by the current amphibious fleet, maritime preposition shipping, or heavy lift tactical helicopter, the MRAPS go contrary to the Corps ethos where less is often better.[36]

Unintended Affects

Continued funding for the MRAP program may create an unintended or second order affects for other Marine Corps procurement programs. For example, the baseline un-planned expense for a fleet of MRAP vehicles represented an opportunity cost to the Marine Corps create gaps in other procurement initiatives such as the HMMWV follow-on called Expeditionary Fighting Vehicle (EFTV), Joint Light Tactical Fighting Vehicle (JLTV), or the Reconnaissance Surveillance Targeting Vehicle (RSTV) if program costs for the MRAP were not programmed properly.[37]

There were physical challenges associated for this vehicle while operating in an urban environment. The vehicle's weight and their limited agility prevent access in narrow city streets as well as off-road terrain. In numerous instances, MRAPS reportedly damaged adjacent properties trying to extricate themselves from tight city streets and there were

[35] Inspector General of the Marine Corps, 30 May 2008, p. 13-15
[36] Congressional Research Service (CRS) Report For Congress, "Mine Resistant Ambush Protected (MRAP) Vehicles: Background and Issues for Congress, 21 August 2008, p. 4
[37] Center For Strategic and Budgetary Assessments, "Of IEDS and MRAPS: Force Protection in Irregular Operations, 2007, p. 41

also examples where MRAPS had to be retrieved by M88 Tank Retriever, other MRAPS, or more multiple smaller vehicles from soft sand and other uneven road surfaces. Additionally, the heavily armored MRAP does not lend itself well to COIN operations where face-to-face interaction was required. Specifically, a "fright factor" was attributed to the MRAP because many local Iraqi's reportedly were intimidated by the sight of MRAPS within their community or among their general population.[38] The sheer size of the MRAP also caused OIF/OEF planners to reconfigure fuel usage and convoy movement routes. As MRAPS are two-to-five times heavier than HMMWVS, it naturally translates to greater fuel requirements, and therefore more fuel convoys on the road.[39]

Comparing the Approaches

Using the criteria listed above, a side-by-side comparison of the *UUNS* and *Evolutionary Acquisition Process* was projected in the chart below.

DESIRABLE EVENT	EVOLUTION ACQUISITION	UUNS ACQUISITION	ADDITIONAL COMMENTS
Contracting			
Prior experience	High	Medium/Low	Experience with acquisition process
Speed of processing	Low	High	Concept to delivery time
Manufacturing			
Single Vendor	High	Low	Versus multiple vendors
Single model prototype	High	Low	Versus multiple variants
MEE* installed	Medium	Low	Mission Essential Equipment installed
Parts in supply system	High	Low	Repair parts available in DOD system
Controlled delivery	High	Low	Planned delivery by manufacturer
Visibility/Transportation			
Visibility of Product	High	Medium/Low	During initial delivery
Costs Programmed	High	Low	Transportation costs to user
Maintenance			
Organic capability	High	Low	Maintained by using unit

[38] Gayl, Franz J., " Mine Resistant Ambush Protected Vehicle (MRAP)" Information Operations and Space Integration Branch (PLI), Headquarters, United States Marine Corps 22 January 2008 p. 45
[39] Center For Strategic and Budgetary Assessments, "Of IEDS and MRAPS: Force Protection in Irregular Operations, 2007, p. 3-4

DESIRABLE EVENT	EVOLUTION ACQUISITION	UUNS ACQUISITION	ADDITIONAL COMMENTS
Life Cycle Maint Incl	High	Low	Anticipated costs planned in contract
Feed-back provided	High	Limited	By user to contract officer/vendor
Contractor C2			
In theater	High	Medium/Low	Ability to shift contractor locations
Program affordability			
Anticipated	Medium	Medium/Low	Anticipated vs actual costs
Life cycle affordability	High	Medium/low	Throughout life of vehicle
DOTMLPF			
Doctrine	Medium-high	Low	Operation/maintenance regulations
Organization	N/A	N/A	
Training	High	Low	Organic maintenance capability
Materiel	Medium-High	Low	Excess products/repair parts
Leadership	N/A	N/A	
Personnel	N/A	N/A	
Facilities	Medium	Low	Eg. available maintenance bays
Culture			
Vision and strategy fit	High	Medium/low	Reduced expeditionary capability
Unintended affects			
On related programs	Low	Medium	Eg. EFTV,LTV, RSTV

Figure3. Comparison of Acquisition Processes

For the events listed in the chart above, a simple measure of probability was assigned ranging from "low to "extremely high." Events that were identified as a "low" indicated a small probability of occurring, while events identified as "medium," "high," or "extremely high" indicated an increased probability of occurring. As the chart depicts, there was a greater probability of desirable events occurring using the *Evolutionary* vice *UUNS Acquisition Process* in all but two categories. For the uninformed, that may indicate the overwhelming merits of the *Evolutionary Acquisition System* when directly compared to the *UUNS Acquisition System*. That opinion might be true with many situations but in a few situations the assessment would be erroneous. In the case of the MRAP, operational commanders determined the most important criteria as speed of production. If the "speed of processing element" is the sole (or most important) criteria then the *UUNS Acquisition Process* is easily the winner

. Conclusion and Recommendations

"If you always do what you always did, you always get what you always got.
If you do not want what you got, do not do what you did.
If you like what you got, do it again."
Anonymous

The desire for the MRAP vehicle coincided with the development of the *UUNS Acquisition Process* and facilitated the production of a very capable and highly survivable armored vehicle in months rather than years. Documented reports indicate mine and IED related injuries have been reduced over 70% and personnel fatalities have been virtually eliminated. However, it quickly became apparent there were serious challenges associated with aspects of the acquisition process particularly as it applied to manufacturing, asset visibility, sustainability and maintenance. Since 2005, the Marine Corps has redirected a significant amount of funding to sustain the MRAP equipment. Mostly, the funding has come jointly from DoD supplemental funding and redirected funds obtained from the Marine Corps Operation and Maintenance (O&M) budget.[40] While every challenge associated with the UUNS acquisition of the MRAP may not be present in significant future Marine Corps UUNS acquisitions, an additional effort should be completed to provide an "enhanced" *UUNS Acquisition Process.* The "enhanced" process should incorporate the best qualities of the current *Evolutionary* and *UUNS Acquisition Processes.*

Validating the Process

For the contracting officer and/or the program manager, specifications for equipment and repair parts must be standardized from one vendor to another. This effort

[40] Congressional Research Service (CRS) Report For Congress, "Mine Resistant Ambush Protected (MRAP) Vehicles: Background and Issues for Congress, 24 January 2008, p. 6

will require more than just the contracting officer's and the program officer's attention, it will require the attention of all the deployed and home-based intermediate supply units who typically provide universal TAMCN's and NSN's to a repair part.

Second, visibility of newly acquired equipment should be improved using the existing Marine in-transit visibility programs already in-existence, or by incorporating system used by other organizations inside or outside the DoD. Until there is a system replacement or repair, increased intervention should occur with the Marine Corps PR Builder and the WOPRR to ensure the reports interface with one another. Whatever method is used, it is imperative that constant visibility of equipment is given along with an ability to recommend design improvements are regularly flowing to contracting officials and to the program managers.

Third, the UUNS contract should stipulate, up-front, the contracted requirements toward life-cycle maintenance rather than exercising on-going year-to-year contracts. Short term CLS/FSR support tends to be expensive, inflexible, and does little to build an organic maintenance capability within a military unit.

Fourth, a formalized maintenance training program must be implemented in conjunction with the equipment requirement. In order to fulfill this requirement maintenance manuals must be expedited and forwarded to the Training and Education Command for implementation in appropriate tactical vehicle maintenance schools.

Finally, it is incumbent on designated Marine Corps leaders to complete a comprehensive DOTMLPF study. Specifically, issues, roles and responsibilities should be better mapped at the various reviewing and approving authorities within the Marine Corps, and directorates need to be properly staffed with knowledgeable personnel.

Additionally, a formalized Standard Operating Procedures (SOP) must be drafted to ensure efficient operations. Additionally, personnel training must be on-going, not immediately prior to an UUNS request being forwarded.

Generating the Momentum

The bottom line is that DoD'S basic acquisition policies and directives are fundamentally sound. What is truly needed is for Marine Corps active duty and civilian personnel to understand and learn the errors committed with the MRAP acquisition. In doing so, they will hopefully become more familiar with the *UUNS Acquisition Process* as many major acquisition decisions, including that for the MRAP, do not reflect adherence to the process. Who knows, the next UUNS acquisition may also provide the ride of your life.

Abbreviations

CDIB……...Capabilities Development Integration Board
CLS……Contracted Logistics Support
DoD…….....Department of Defense
DOTMLPF……Doctrine Organization, Training, Material, Leadership, Personnel, Facilities
ETFV……..Expeditionary Tactical Fighting Vehicle
FSR…….…….....Field Support Representatives
GAO…….Government Accounting Office
GFE…….…….....Government Furnished Equipment
GCE……..……...Ground Combat Element
HMMMV……...High Mobility Multi-wheeled Vehicle
HQMC ……....Head Quarters Marine Corps
ICD……..Initial Capabilities Document
IED……Improvised Explosive Devices
I&L……..……...Installations and Logistics
JLTV…….....Joint Light Tactical Vehicle
JUONS……Joint Universal Operational Needs Statement
MARFORCOM ……Marine Forces Command
MCCDC……..Marine Corps Combat Development Command
MCSC …….……...Marine Corps System Command
MDA……..…….Milestone Decision Authority
MEE ……Mission Essential Equipment
MEF……..Marine Expeditionary Force
MNF-I…….……Multi National Forces- Iraq
MNF-W……..Multi National Forces-West
MRAP……..Mine Resistant Ambush Protected
MROC ……...Marine Requirement Oversight Committee
MTVR……..Medium Tactical Vehicle Replacement
NSN ……..National Stock Number
O&M ……Operations and Maintenance
OEF …….Operation Enduring Freedom
OIF …….Operation Iraqi Freedom
OSD ……Office of the Secretary of Defense
PPBE……...Planning Programming Budgeting and Execution Process
PR Builder……...Procurement Request Builder
RSTV……Reconnaissance Support Tactical Vehicle
TAMCN……Table of Authorized Material Control Number
WOPRR……...Warrior Open Purchase Request Router
UUNS…….…….Urgent Universal Needs Statement

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