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An Analysis of the United States Marine Corps' Family of Ballistic Protective Systems Acquisition Strategy

16 November 2009

by

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Abstract

Recent congressional and media inquiries have highlighted questions regarding the protection provided to today's Marine Corps. The purpose of this research is to analyze the current Family of Ballistic Protective Systems (FBPS) Acquisition Strategy of the United States Marine Corps. The FBPS consists of individual protective items such as ballistic vests, individual armor plating, helmets, and eye and ear protection. Currently, the Marine Corps adheres to the (Department of Defense) DoD policy to use one-year appropriations to finance the procurement and sustainment of these items. Critics of the policy believe a separate three-year appropriation specific to the acquisition of these individual components better serves the customer and the acquisition process delineated in the DoD Instructions. The research examines current government regulations, policy environment, and acquisition precedents. Additionally, the research compares a previous FBPS acquisition to a theoretical procurement under three-year appropriations. The research demonstrates that the three-year obligation period of procurement funding better serves the acquisition process. Furthermore, three-year appropriations provide a better value for the Marine Corps in terms of cost savings and a better product. Finally, the research provides specific recommendations for the Marine Corps in the area of future procurements in the FBPS.

Keywords: Marine Corps, Body Armor, Family of Ballistic Protection

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About the Author

Major Freeby was born July 15, 1974 in Houston, Texas, and enlisted in the Marine Corps in November 1993. Upon completion of recruit training, he joined 3rd Platoon, Company B, 4th Amphibious Assault Battalion, where he received a meritorious promotion to Corporal. He graduated from Texas A&M University in December 1997 with a Bachelor of Science degree in Mechanical Engineering Technology.

In January 1998, he attended the Officer Candidate Course and commissioned a Second Lieutenant on April 4, 1998. After completing The Basic School in October 1998, he attended the Field Artillery Officer Basic Course at Fort Sill, Oklahoma.

Upon graduating from Fort Sill in April 1999, he reported to M Battery, 3rd Battalion, 11th Marine Regiment, where he served as a Forward Observer until August 1999. From August 1999 to February 2000, he served as Headquarters Platoon Commander/Fire Direction Officer for M Battery. In February 2000, he deployed to Okinawa, Japan as part of the Unit Deployment Program and assigned as the S-1/S-4 of the Jungle Warfare Training Center. Upon return from Okinawa in August 2000, he became the Executive Officer, M Battery, 3rd Battalion, 11th Marines, where he served until February 2001. From February 2001 until November 2001, he served as the Assistant Fire Support Coordinator for 7th Marine Regiment.

In November 2001, he reported to the 11th Marine Expeditionary Unit, where he served as the Target Information Officer, Fire Support Officer and Assistant Operations Officer. He conducted a Western Pacific Deployment from June to December 2002, which included support to Operation ENDURING FREEDOM in Djibouti, Africa and Humanitarian Assistance in East Timor. He conducted two additional deployments with 11th MEU in support of Operation IRAQI FREEDOM, from February to May 2003 and from May to December 2004.

Upon completion of his tour with the 11th MEU in December 2004, he attended Field Artillery Captains Career Course in Fort Sill, Oklahoma, graduating as the Distinguished Honor Graduate in June 2005. Upon completion of his courses at Fort Sill, he reported to 2nd Battalion, 11th Marine Regiment as the Assistant Operations Officer/Battalion Fire Direction Officer, where he served until October 2005. In October 2005, he assumed command of Headquarters Company, 5th Marine Regiment, where he deployed in support of Operation IRAQI FREEDOM. In May 2007, he relinquished command at 5th Marines and assumed command of Fox Battery, 2nd Battalion, 11th Marines, where he served until October 2007. From October 2007 to June 2008, he served as the Senior Watch Officer for Regimental Combat Team 1, where he deployed in support of Operation IRAQI FREEDOM. Upon return from deployment in June, he assumed his current rank, transferred to the Naval Postgraduate School, and commenced an MBA Program in Financial Management, where he currently serves.

Major Freeby's personal decorations include the Navy and Marine Corps Commendation Medal with two gold stars in lieu of third award and Combat Distinguishing Device, Navy and Marine Corps Achievement Medal and the Combat Action Ribbon.

He is married to the former Daylyn Bishop of Houston, Texas, and they have one child, Vivian.

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List of Acronyms and Abbreviations

ALICE	All-purpose Lightweight Individual Carrying Equipment
CMC	Commandant of the Marine Corps
DoD	Department of Defense
FBA	Family of Body Armor
FY	Fiscal Year
FBPS	Family of Ballistic Protective Systems
FMR	*Financial Management Regulation*
HQMC	Headquarters, Marine Corps
MCCDC	Marine Corps Combat Development Command
MCMP	Marine Corps Master Plan
MCSC	Marine Corps Systems Command
MEP	Marine Enhancement Program
MWG	MEP Working Group
MEU	Marine Expeditionary Unit
NRDEC	Natick Laboratory Army Research, Development, and Engineering Center
O&MMC	Operations and Maintenance, Marine Corps
ORD	Operational Requirements Document
OTV	Outer Tactical Vest
PASGT	Personal Armor System Ground Troops
PMC	Procurement, Marine Corps
PM, ICE	Program Manager, Infantry Combat Equipment
RDT&E	Research Development Test & Evaluation

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I. Introduction

A. Background

The *Merriam-Webster Dictionary* defines war as "a struggle or competition between opposing forces" ("War," 2009). In order to achieve victory in war, the struggle frequently requires men and women to use deadly force. Carl Von Clausewitz, a Prussian military strategist, extended this idea when he stated, "Warfare is merely a continuation of politics by other means" (as cited in Bassford, 2009). Therefore, in the protection of its national interests, the United States developed the requirement for individual ballistic protection.

The United States Marine Corps has a long history in individual ballistic protection. The nickname "Leatherneck," given for the distinctive leather collar that 18th century Marines wore to protect their necks in battle, is one early example. Today, the Marine Corps has consolidated each of these protective items into the Family of Ballistic Protective Systems (FBPS). The FBPS consists of individual items such as ballistic vests, armor plating, helmets, and eye and ear protection. Historically speaking, the service life of these items has decreased due to technological advances and increased operational tempo.

Currently, the Department of Defense (DoD) has characterized all items comprising the FBPS as consumable items that require frequent replacement because of deterioration. Therefore, the funding to both procure and maintain these items has consisted of primarily operations and maintenance funding or one-year appropriation. Additionally, the Department has also publicly stated that the FBPS does not represent a durable, investment-grade item requiring procurement funding or three-year appropriation.

Recent acquisitions of FBPS items have highlighted an opinion that one-year funding is not suitable to the acquisition process. The current FBPS acquisition timeline typically consists of four distinct phases: first, a six-month requirements generation and staffing phase; second, a twelve-month research and development phase; third, an eighteen-month acquisition phase; and finally, a six-month testing and evaluation phase, conducted concurrently with the acquisition phase.

Also, congressional and media inquiries have raised questions regarding the FBPS—specifically, in regard to the timing and quality of products provided to today's Soldier, Sailor, Airman and Marine. One must believe that both the media outlets and political leaders are acting on behalf of the concerned American taxpayer. However, as with any significant modification of national policy, such as DoD FBPS funding policy, the political environment must also support the change.

The transition of funding lines for the FBPS may allow for a more manageable process concerning financial management, but it may also create a better value for the Marine Corps. Consequently, this research will attempt to examine the different aspects of this compelling question and provide a recommendation for the Marine Corps to employ. However, since this type of equipment provides life-saving protection for America's most valuable national security asset, this analysis will not attempt to quantify the value of individual Service members.

B. Purpose

The purpose of this research is to analyze the current FBPS acquisition strategy of the United States Marine Corps. Currently, the Marine Corps adheres to the DoD policy to use one-year appropriations to finance the procurement and sustainment of these items. The policy does provide flexibility to financial managers when faced with competing fiscal requirements; however, the question

remains, does the customer receive the best value? Critics of the policy believe a separate three-year appropriation specific to the acquisition of these individual components would better serve the customer, the acquisition process, and the associated timelines delineated in the DoD Instructions.

C. The Research Question

1. Primary Research Question

The primary question the research seeks to answer is should the Marine Corps use three-year appropriations to fund the procurement of items in the FBPS? Each year, Congress appropriates funding for the DoD to purchase a myriad of items such as investments and repair parts. Typical DoD purchases are ships for the Navy or aircraft for the Air Force. On the other hand, operational funding supports the daily operations of the Department such as the repair of a vehicle's transmission. As the Marine Corps plans for and conducts future procurements in the FBPS, should the Corps establish a new funding line for the FBPS? The question requires examination from many different perspectives.

2. Secondary Research Questions

Prior to answering the primary research question, the research must answer a couple of secondary research questions. Specifically:

- Is it fiscally appropriate to use procurement funding to purchase the FBPS?
- Which funding type provides the best value to the USMC?

Several documents govern the administration of the DoD's funding. Primarily, the DoD *Financial Management Regulation (FMR)* determines the fiscal legality of how the Department and the component Services spend its money. However, if the research can establish that the Marine Corps can use

procurement funding to purchase items in the FBPS, then the research can compare each type of funding to analyze which provides the best value to the Marine Corps. The comparison will ultimately serve to answer the primary research question.

D. Scope

The research focuses on assessing the current USMC acquisition strategy for the FBPS. Since this transition from a one-year to a three-year appropriation must meet specific legal guidelines, the research analyzes which guidelines pertain to the FBPS. The assessment presents a historical recount of the latest deliberate body-armor acquisition for the Marine Corps by utilizing one-year appropriation, and then it presents a theoretical model of an FBPS procurement using three-year appropriation. Finally, the research analyzes the costs and benefits associated with each appropriation, one-year and three-year, to provide a recommendation to the Marine Corps for future FBPS acquisitions.

E. Organization of the Study

Chapter II, Literature Review, provides a brief history of the FBPS and an overview of how the DoD and the Marine Corps currently fund body-armor acquisition. Furthermore, Chapter II provides a synopsis of the Marine Enhancement Program (MEP), which plays an important role in the acquisition of the FBPS.

Next, Chapter III examines the fiscal legalities of procurement funding. Specifically, this chapter answers the question whether the FBPS represents a DoD investment or an operating expense. Moreover, Chapter III examines recent budget history to determine if the DoD has set a precedent concerning this issue and whether the current political environment will support such a budget request.

Chapter IV, Current USMC FBPS Funding Strategy, examines the acquisition of the Outer Tactical Vest (OTV) through the acquisition framework in order to provide a benchmark by which to compare a theoretical case. Coincidently, the OTV acquisition was the last formal acquisition of body armor by the Marine Corps in the FBPS prior to the current trend of urgent-need acquisitions.

Chapter V presents a theoretical acquisition in the FBPS under procurement funding. The final chapter, Conclusion, compares the two types of appropriations and attempts to answer the research questions. The analysis includes an examination of the cost savings and product improvements that each type of appropriation provides while providing recommendations for future FBPS acquisitions.

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II. Literature Review

A. History of the Marine Corps FBPS

Historically, individual body armor has always been cumbersome—heavy and offering limited flexibility—and, consequently, not used in the early forms of combat. In the last half century, the Marine Corps capitalized on the development of many new products for individual ballistic protection, and, collectively, the sum of those components makes up the FBPS. Serving as both a general force in readiness and providing forces for the joint environment, the Marine Corps has developed several specific FBPS requirements. For this historical perspective, the research focuses on the equipment used by the entire population as opposed to equipment used by a specific community, such as force reconnaissance.

The Marine Corps considers all aspects of personal ballistic protection to comprise a complete system. In other words, a Marine must wear all components of the FBPS to achieve complete protection from the myriad of battlefield threats. The next section provides a quick synopsis of the development of two components of the FBPS with the longest service life: body armor and helmets.

1. Body Armor

During World War II, United States military officials introduced troops to the "flak jacket," a protective outer garment worn to guard against damage from low-velocity projectiles known as flak (Global Security, 2009). In May 1943, amid calls for industry to produce a light armor plate, the Dow Chemical Company "laminated a fibrous glass fabric and plastic in a special manner that provided encouraging ballistic values" (King, 1953). The Naval Research Laboratory constructed plates out of the resulting material, called Doron, and developed the first individual armored vest. Two Navy Officers conducted a demonstration for

the Marine Corps in Camp Lejeune, North Carolina. One officer donned the vest while the other fired a .45 caliber pistol at him, and the results were amazing. The Doron plating stopped the bullet, and the result was the commencement of the Marine Corps program to purchase body armor (King, 1953).

In the final stages of the Battle of Okinawa, Congress approved the Marine Corps' budget request to purchase enough body armor to equip an entire infantry battalion. Then, in 1948, the Marine Corps formally established a Body Armor Section under the Medical Research Laboratory in Camp Lejeune. The director, Lieutenant Commander Fred Lewis, coordinated on behalf of the Marine Corps with the Office of the Quartermaster General and Naval Research Laboratory to determine the most suitable body-armor materials. The result was a contoured Doron plate inserted into a vest known as the M-1951 (see Figure 1) (King, 1953). The M-1951 was:

> 7.75 lbs. and was a zippered sleeveless jacket constructed of water-resistant nylon containing two types of armor. The first was a nylon basket-weave flexible pad, which covered the upper chest and shoulders. The other consisted of overlapping curved Doron plates which covered the wearers lower chest, back and abdomen. The M-1951 vest also featured an exterior breast pocket and a reinforced eyeleted waist band. This allowed equipment which had the M-1910 hook fasteners to be attached to it, instead of a pistol belt. (Olive Drab, 2008a)

The Marine Corps used the M-1951 extensively during the Korean War. Ultimately, the success of the vest led to a recommendation from the operating forces to procure enough to outfit an entire Marine Division for testing. Subsequently, the operational employment of the Division changed, and the Marine Corps never purchased enough vests to conduct the test (Medical Department, 1984).

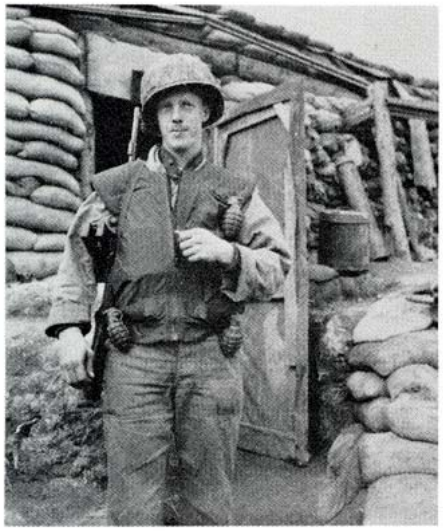

Figure 1. Marine Wearing the Marine Corps M-1951
(From Medical Department, 1984)

The next evolution in Marine Corps body armor was the M-1955 (see Figure 2). The M-1955 had the same technical characteristics of the M-1951, but the vest also featured "a rope ridge fitted to the right shoulder so as to retain a slung rifle while on the march" (Olive Drab, 2008b). The vest remained in the Marine Corps inventory from 1953–1983. Compared to the technology of today, the vest "offered limited fragmentation protection but was better than the alternative of no vest at all" (Marine Corps Systems Command ICE, 2008, June 16, p. 3).

Figure 2. Marine Corps M-1955
(From Special Warfare, n.d.)

In the 1970s, a breakthrough in individual body armor occurred when the DuPont Corporation developed Kevlar. In 1981, the Marine Corps specified that its personnel must wear protective apparel, most of which contained Kevlar (DuPont, 2008). Subsequently, in 1983 the United States Marine Corps adopted a Kevlar-based flak jacket called the Personnel Armor System for Ground Troops (PASGT) (see Figure 3).

Figure 3. Marine Corps PASGT
(From Techmark Enterprises, n.d.)

The PASGT offered "improved fragmentation protection and comfort over its predecessor but was limited in direct fire protection and load carriage capability" (Marine Corps Systems Command, 2008). The vest's technical characteristics include:

> 13 plies of 14 oz/yd water repellent treated Aramid (Kevlar 29) fabric. The inner and outer cover, shoulder pads and front closure flap of the vest are water repellent treated 8 oz/yd2 (271 g/m2) ballistic nylon cloth. The vest has a 3/4 collar, pivoting shoulder pads, two front pockets, two grenade hangers and rifle butt patches at the front shoulder area. The front flap and pocket flaps have hook and loop fastener tape closures. The side

> overlaps are made flexible through the use of 1–1/2 inch (3.8 cm) wide elastic webbing. […] When the PASGT Vest is worn in combat areas, an 18–53 percent decrease (threat dependent) in all fragmentation caused casualties is predicted. (Global Security, 2006b).

The PASGT remained in the Marine Corps inventory until 1998, when the Marine Corps pursued the development of the next evolution in individual ballistic protection, known as the Family of Body Armor (FBA).

The FBA consisted of three separate components, referred to collectively as the Interceptor System. The concept of the system provided flexibility to Marine Commanders to vary the level of protection based on the perceived threat. The FBA included an inner vest worn next to the body, an outer vest known as the OTV (see Figure 4), and ballistic plates that a Marine could insert in the front and back of the OTV (Marine Corps Combat Development Command, 1995).

Figure 4. Marine Corps OTV
(From "Interceptor Body Armor," n.d.)

The OTV improved fragmentation and 9mm direct-fire protection and utilized armor-plate inserts for rifle direct-fire protection. The web strapping located on the outside of the vest improved the load carriage capability, and nylon side straps allowed for an adjustable fit (Marine Corps Systems Command,

2008). The FBA acquisition was the last formal body-armor acquisition conducted by the Marine Corps; therefore, the Interceptor remains the program of record for Marine Corps body armor. Chapter IV of this research provides a detailed account of the OTV acquisition. The Marine Corps procured two other vests in response to the urgent needs of battlefield commanders, but for the purposes of this research, the focus will remain on programs of record.

2. Helmets

During World War I, the Marine Corps developed the M-1917 Helmet (see Figure 5). Based on a British design, the M-1917

> was made of 13 percent pressed manganese steel alloy, 0.035 inch thick, and could be ruptured only by a blow of 1,600 pounds or more. […] The ballistics specifications of the M1917 helmet required it to resist penetration by a 230-grain caliber .45 bullet with a velocity of 600 f.p.s. (Medical Department, 1984, p. 642)

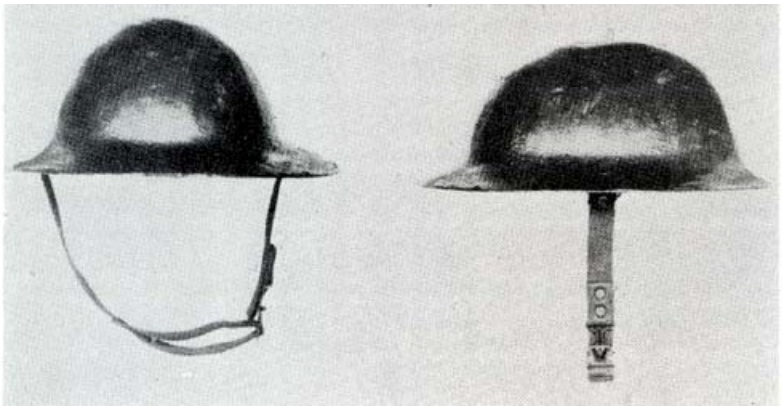

Figure 5. Marine Corps M-1917
(From Medical Department, 1984)

Although the M-1917 proved effective during combat, helmet research continued to develop a better alternative. Then, in 1941, the Marine Corps adopted the M1 "steel pot" Helmet (see Figure 6) (Medical Department, 1984).

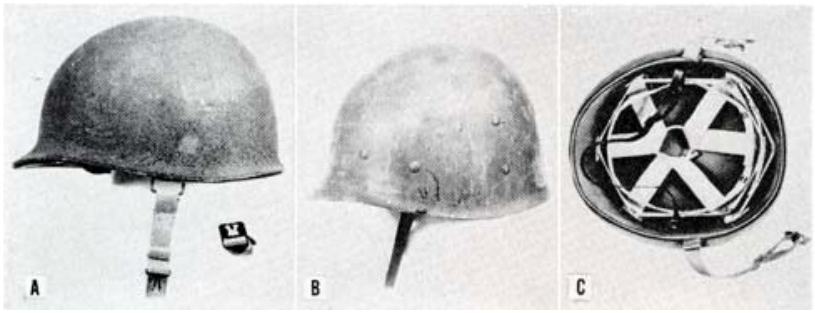

Figure 6. Marine Corps M1
(From Medical Department, 1984)

The M1 weighed about three pounds and "would resist penetration of 230-grain caliber .45 bullet with a velocity of 800 f.p.s." (Medical Department, 1984, p. 644). The M1 would remain in the Marine Corps inventory until approximately 1983. With the invention of Kevlar, the same technology that applied to body armor also applied to helmets. Consequently, the Marine Corps developed the PASGT Helmet (see Figure 7).

Figure 7. Marine Corps PASGT Helmet
(From Global Security, 2006a)

The PASGT provided better head stability with an improved retention system (chinstrap) and headband design. Additionally, the helmet came with a cover that allowed for better concealment during combat operations. The PASGT remained in the inventory until 2003, when the Marine Corps replaced it with the Lightweight Helmet (LWH).

The LWH (see Figure 8) "retains the PASGT design but makes use of lighter materials made available by new technologies" (Marine Corps Systems Command, 2008).

Figure 8. Marine Corps LWH
(From BAE System, n.d.)

B. DoD Funding of FBPS

As alluded to in the previous section, the Marine Corps often capitalizes on joint ventures into the research and development of the FBPS. Due to closely related mission needs, the Marine Corps and the Army often conduct joint ventures into both the research and development and the procurement of such products. As an example, the M1 Helmet was a joint venture, led by the Army, and adopted by the Marine Corps (Medical Department, 1984). A joint venture amongst the Services proves to save the DoD money by capitalizing on the economies of scale. Since the Marine Corps and the Army use some of the same products, the DoD can negotiate a lower unit price for a combined purchase vice a single service purchase. Many acquisition professionals also

refer to this combined purchase quantity as an economical order quantity since this practice decreases the ordering costs associated with the procurement.

C. The Marine Enhancement Program

During the hearings for the *National Defense Authorization Act for Fiscal Years 1990 and 1991*, the Senate reported that:

> the Army and the Marine Corps emphasize research and development of sophisticated weapons systems at the expense of weapons and equipment for the individual soldier and marine. The committee believes that the effectiveness of our Nation's foot soldiers can be significantly increased through more aggressive efforts to identify and purchase, as well as develop, better weapons and equipment for our soldiers and marines. These efforts should include surveying foreign armies and commercial sources for items that can be procured off the shelf.
>
> We do not have to invent everything and have Army specifications or Marine specifications for every piece of equipment. We need to go ahead and make decisions and get some good equipment out there to the people who have to do the fighting if there ever is a war.
>
> The committee authorized $30 million in research and development funds for the Army and Marine Corps to develop lighter, more lethal infantry weapons; better, lighter antiarmor weapons; and improved field gear and equipment. (Global Security, 2005)

The money provided by Congress to the Marine Corps during fiscal years 1991 and 1992, $12 million collectively, established the Marine Enhancement Program (MEP). The initial years of the program focused on the research and development of MEP items.

In fiscal year 1993, Congress authorized an additional $6 million for research and development and $8 million for procurement of MEP items. The Marine Corps was required to report to Congress on the use of the funds, including an assessment of how the items increase the effectiveness of the individual Marine. Also in the report to Congress was a prioritized list of items

and a funding profile for each item. Finally, Congress directed the Marine Corps to coordinate efforts with the Army's Soldier Enhancement Program to eliminate any duplication of effort (United States Marine Corps, 1994).

Because of the establishment of the MEP, the Marine Corps published a Mission Needs Statement for the program. It stated that the program "responded to two foundations of National Defense Policy: Forward Presence and Crisis Response" (United States Marine Corps, 1993). The statement also delineated the initial operational capability in FY96 with full operational capability in FY00.

Subsequently, the Marine Corps established a process for compiling, prioritizing and procuring items from the MEP (see Figure 9).

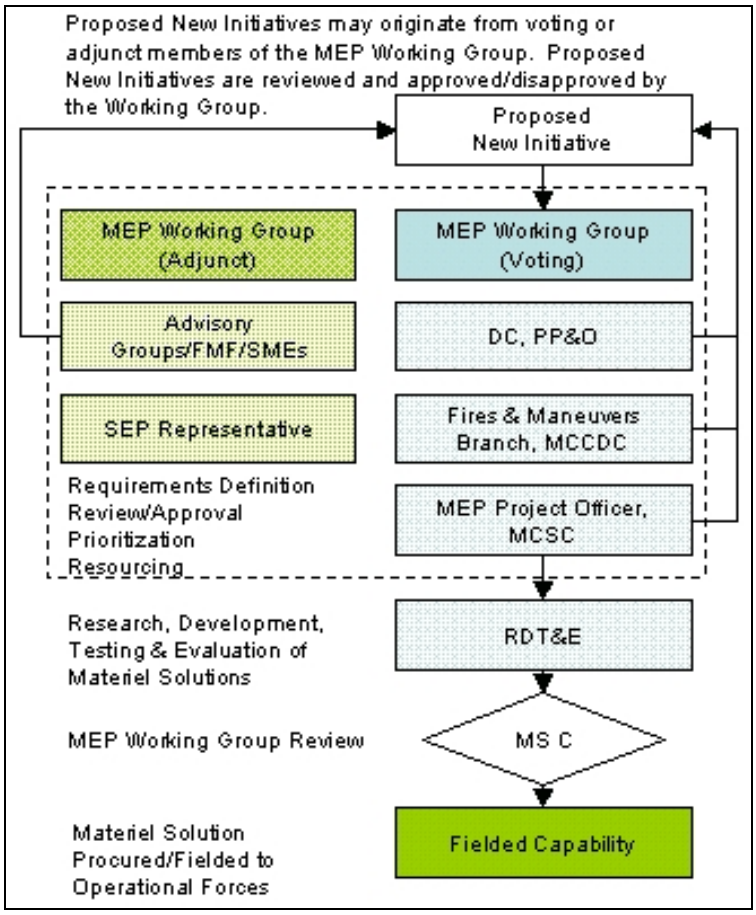

Figure 9. Marine MEP Process Diagram
(From Marine Corps Combat Development Command, n.d.)

The process begins with a proposed new initiative. The initiative can come from a number of sources, such as operational units, subject-matter experts or advisory groups. Quarterly in the fiscal year, the MEP working group (MWG) meets to review and approve or disapprove each new initiative. The MWG comprises members from various Marine Corps Commands who are responsible for supporting the MEP and a member from the Soldier Enhancement Program. The MWG approves, prioritizes and funds the initiatives for a material solution. Ultimately, the program eliminates many of the required acquisition documents since the funding and preapproved statements exist for the entire program.

D. Chapter Summary

The chapter provides an overview of the history, development and acquisition of the FBPS. Since the major items in the FBPS are body armor and helmets, the historical context focused on those items specifically. Furthermore, the chapter explained that the DoD attains the best value of FBPS acquisitions by standardizing equipment to meet both USMC and Army service requirements, purchasing in a joint manner to decrease the total unit cost. Finally, the chapter provided a brief overview of the establishment and operation of the MEP. The MEP serves as the primary means by which the Marine Corps initiates many FBPS acquisitions.

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III. The Fiscal Legalities of Procurement Funding

A. Introduction

In most cases, the DoD classifies FBPS items as an expense cost and, therefore, provides funds using one-year appropriations. Does the FBPS actually represent a DoD expense cost? The DoD *FMR* gives a basic distinction between expense and investment costs by stating:

> The criteria for cost definitions consider the intrinsic or innate qualities of the item such as durability in the case of an investment cost or consumability in the case of an operating[1] cost and the conditional circumstances under which an item is used or the way it is managed. […] All costs are classified as either an expense or an investment. (DoD, 2009, pp. 1–13)

In the case of the FBPS, the Marine Corps adheres to the current DoD policy, but some critics believe the FBPS actually represents a DoD investment cost. As with many policies, the environment often changes, causing the policy to become outdated. Some believe the FBPS have become outdated, and an opportunity exists to reevaluate the existing policy. In order to properly answer whether the FBPS is an expense or an investment, the research must analyze the current DoD financial management regulations, consider if any DoD precedent exists, and understand the current policy environment.

B. Is the FBPS An Investment Or An Expense?

The *FMR* provides specific guidelines in determining the type of cost incurred by the purchase of an item. Table 1 is the *FMR* cost determination flowchart.

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[1] The *DoD Financial Management Regulation* uses the terms “operating cost” and “expense” interchangeably.

Table 1. Expense/Investment Cost Determination
(From DoD, 2009, pp. 1–18)

Expense/Investment Cost Determination						
Is the item a	**If**	**Then**	**If**	**Then**	**If**	**Then**
Centrally Managed/Asset Controlled Item?	Yes	Is the item purchased from DWCF?	Yes	Is the item part of a full funding effort? *	Yes	Classify as Investment
					No	Classify as Expense
			No	Classify as Investment		
	No	Is the unit cost more than $250,000?	Yes	Classify as Investment		
			No	Classify as Expense		
* When intended for use in weapon system outfitting, government furnished material on new procurement contracts or for installation as part of a weapon as part of a weapon system modification, major reactivation or major service life extension.						

1. Does the USMC Centrally Manage FBPS?

The first step in answering the question is to examine whether the DoD or one of the Services centrally manages the item in question. The *FMR* defines centralized item management and asset control as:

> The management in the central supply system or a DoD-wide or Service-wide acquisition and control system in which the manager has the authority for management and procurement of items of equipment. This includes such functions as requirement determination, distribution management, procurement direction, configuration control and disposal direction. Asset control includes the authority to monitor equipment availability and take such actions as necessary to restock to approved stockage levels. (DoD, 2009, pp. 1–51)

A DoD-wide system for acquisition and control does not exist in the case of the FBPS. Essentially, each Service has the authority to budget, purchase and manage a specific product in order to conduct their mission.

In the case of the Marine Corps, a service-wide acquisition and control system does exist. Marine Corps Systems Command (MCSC) is the "Commandant of the Marine Corps's principal agent for acquisition and

sustainment of systems and equipment used by the operating forces" (Marine Corps Systems Command, 2007, March). As a subset of the MCSC, the Program Manager Infantry Combat Equipment (PM, ICE) established an armor and load-bearing team that "is responsible to provide timely, high quality individual ballistic protection" (Marine Corps Systems Command, 2009). PM, ICE serves as the Marine Corps FBPS manager and procurement authority. The office establishes and implements policies on the distribution management, procurement direction, configuration control and disposal direction of all items in the FBPS.

In an effort to assist MCSC in the central management of FBPS, the Marine Corps contracted Lion-Vallen Industries in 1992 to establish and maintain an Individual Combat Clothing and Equipment Consolidated Issue Facility (CIF). The USMC authorized the construction of twenty separate warehouses in the United States and overseas to support the individual combat equipment requirements for the active component USMC. The primary mission of the CIF is to ensure the Marines and Sailors "are issued serviceable Individual Combat Equipment" (United States Marine Corps Consolidated Issue Facility, n.d.). The CIF website goes on to state that Lion-Vallen Industries is "also responsible for managing the inventory and maintaining each individual account" (United States Marine Corps Consolidated Issue Facility, n.d.). Furthermore, the contract allowed the MCSC to maintain real-time assets control using an automated database known as Total Asset Visibility. Prior to the establishment of the CIF, the USMC relied upon each individual unit to account for, issue, repair and dispose of individual items. Now, with the Lion-Vallen Industries contract, the MCSC can maintain central management of the FBPS from acquisition to disposal and all processes in between.

The MCSC's central management of FBPS slightly degraded with the commencement of the Global War on Terror. Although the MCSC established a strategic business model in 2000 to deal with the challenges of a changing

environment, the events comprising the Global War offered many new challenges. Several Marines deployed in support of Central Command to conduct Operations ENDURING and IRAQI FREEDOM. As with any conflict, the enemy situation changed, and the threats posed to Marines evolved as well. As a result, several DoD personnel purchased commercial body armor for use in combat. In the wake of the public outcry over the shortage of body armor, the USMC published *Marine Administrative Message (MARADMIN) 262/07* on the purchase of individual body armor. The MARADMIN stated that Marines and Sailors "may not use commercial PPE[2] in lieu of government tested, approved and issued PPE" (United States Marine Corps, 2007). The new policy, announced by the Commandant of the Marine Corps (CMC), essentially reinforced the MCSC's control of the FBPS in light of the recent media attention. Individual commanders enforced the policy, and the USMC has maintained centralized item management and asset control over the FBPS ever since.

2. Is the FBPS an Expense or an Investment?

The *FMR* defines an expense as the "costs of resources consumed in operating and maintaining the Department of Defense" (DoD, 2009, pp. 1–14). As delineated in Table 1, the *FMR* provides specific guidelines to determine cost types, and the regulation even goes so far as to give several examples, such as stating that clothing is an expense. Traditionally, many have viewed the FBPS as a clothing item and, in keeping with the *FMR,* have classified it as an expense. In addition, individual unit cost of the items in the family is below the DoD investment threshold of $250,000, despite the fact the Marine Corps expends several million dollars throughout the product lifecycle to procure and maintain the FBPS. Both of these notions lead many to believe the Marine Corps should classify the FBPS as an expense.

[2] Personal Protective Equipment

The *FMR* defines an investment as "the costs that result in the acquisition of, or an addition to, end items. These costs benefit future periods and generally are of a long-term character such as real property and personal property" (DoD, 2009, pp. 1–13). Does the FBPS benefit future periods? This is debatable since some components of the system do benefit future periods. Specifically, individual ballistic vests, individual armor plating, and helmets can last several years, depending on use and contact with the enemy. Eye and ear protection are consumable items—they degrade very quickly—and do not generally benefit future periods. However, since some components of the family can benefit future periods, the Marine Corps can consider the entire family to benefit future periods, despite the fact that some items in the FBPS are consumable.

In following the guidelines provided in Table 1, the *FMR* establishes the steps in determining whether FBPS is an expense or an investment. The Marine Corps centrally manages FBPS and does not purchase the FBPS using the Defense Working Capital Fund. Therefore, according to the *FMR*, the FBPS is an investment, and the unit cost threshold of $250,000 is not a decision variable in determining whether FBPS is an expense or investment.

C. Has the DoD Set a Precedent in the Procurement of These Types of Systems?

In breaking an existing policy or establishing a new policy, one often poses the question of precedents. The DoD, specifically the Marine Corps, has used procurement funding to purchase items within the FBPS. The Marine Corps established this precedent during the acquisition of the Full Spectrum Battle Equipment (FSBE).

On December 9, 1999, the 15th MEU conducted an amphibious training exercise in order to complete a special operations certification program. During the mission, a CH-46 helicopter crashed off the coast of San Diego, California. The crash killed seven of the eighteen individuals on board the aircraft (Piper,

2008). The investigation of the crash highlighted several factors as the cause of death of these Marines and Sailors, one of which was the style of body armor used in these types of missions. The body armor was heavy, non-buoyant, and not designed for quick removal in the case of an emergency. As a result, the MCSC recognized the need for new body armor in support of Marines conducting special-operations missions. According to Exhibit P-40 of the Procurement Marine Corps Budget Estimate for FY 2003, the Marine Corps budgeted a total of $7 million for FSBE. The incremental purchase was to occur in FY03 and FY04 in the amounts of $4 and $3 million respectively (DoN, 2002). Consequently, the Marine Corps completed the procurement in FY 2004, and the MCSC spent $6.8 million for 2,915 vests (DoN, 2004).

As discussed in Chapter II, the original justification for the use of procurement appropriations for the FSBE was the MEP. Coincidently, the MEP is how the USMC supports the procurement of other items in the FBPS. Since the entire program has acquisition preapproval from Congress, the MEP eliminates some of the acquisition documentation required, such as the Mission Needs Statement. Further analysis of the FSBE program concludes that the USMC is still utilizing procurement funding for the FSBE, thus the precedent is still intact.

D. Existing Policy Environment

The legislative branch of the government has also provided ammunition to the current argument in their consistent intervention and oversight. Section 142 of the *Duncan Hunter National Defense Authorization Act for Fiscal Year 2009*[3] required the DoD to provide a response to the congressional Defense Committees on the body-armor acquisition strategy. Specifically, the law asked for "an assessment of the feasibility and advisability of establishing a separate,

[3] Public Law 110–417.

dedicated procurement line item for the acquisition of body armor and associated components for FY11 and for each fiscal year thereafter" (Under Secretary of Defense, 2009, p. 14). In response, Under Secretary of Defense for Acquisition, Technology and Logistics John Young stated that:

> The Department does not believe that establishing a separate, dedicated procurement line item for body armor is desirable. Body armor is an integral piece of the war fighter's uniform which is characterized as a consumable item along with other items such as personal protective gear, fuel, and food. Since body armor is an issued item that periodically must be replaced due to wear and tear, it does not represent a durable, investment-grade item. Therefore, purchases of body armor are consistently funded as an operational cost with Operation and Maintenance (O&M) funds by units within the military departments.
>
> Funding body armor with O&M funds provides more flexibility to shift funds and cover shortfalls or requirement changes in allocations for body armor. Procurement funds are not always as readily available as O&M funds at the beginning of a fiscal year (not receiving funds in procurement up front in some cases), thereby leaving the requirement for body armor "unfunded" for some length of time until the procurement portion of a supplemental is approved. Procurement is usually based on a fixed number of the procurement purchase line, which fails to allow for changes in required body armor quantities, should those numbers be increased beyond the appropriated amount. The type of body armor and quantity flexibility, and repetitive, consumable nature of body armor purchases, is better suited to O&M funding.
>
> Whether a program is funded out of procurement or O&M will not determine the long range strategic plan for sustaining the body armor industry. War fighter acquisition needs for body armor change from one year to the next and may require timely and near term, un-planned funding. This is consistent with U.S. Central Command's requests to raise the expense/investment threshold above $250,000 because the normal procurement funding process is too slow to meet immediate and emergent combat procurement requirements. Use of O&M funding to purchase body armor allows the military departments to maintain acquisition flexibility to meet their near term objectives to respond to emerging threats. (Under Secretary of Defense, 2009, pp. 9–10)

Subsequently, Representative Niki Tsongas, member of the House Armed Services Committee, presumably disagreed with the Under Secretary's assessment. On May 19, 2009, she introduced *HR 2473* that would take effect in FY11 and each fiscal year thereafter. The bill states, "the Secretary of Defense shall ensure that within the procurement account for each of the military services a separate, […] dedicated program element is assigned to the procurement of body armor" (US House of Representatives, 2009). Her coinciding press release states:

> Currently, our armed services draw funding for body armor from a general account that funds a vast array of military technology and equipment. By devoting specific accounts to body armor development and procurement, we can more easily address shortcomings with the current body armor program and promote the development of body armor that is best suited to protecting our soldiers against current threats. (Tsongas, 2009)

The bill is currently before the House Armed Services Committee and Subcommittee on Air and Land Forces for referral. One can infer that the DoD has not convinced all members of Congress of the argument, and the political environment supports a change in the funding of the FBPS from one-year to three-year appropriations.

E. Chapter Summary

In conclusion, according to the DoD *FMR*, the USMC meets all the specific guidelines to use procurement funding to purchase the FBPS. The Marine Corps centrally manages the FBPS and does not purchase using the Defense Working Capital Fund. Therefore, according to the *FMR,* the USMC can classify the FBPS as an investment. Furthermore, the DoD—as well as the USMC—has established precedents in this arena by purchasing the FSBE with procurement funding. The MEP provided the initial justification for the purchase of the FSBE, and this same justification supports the purchase of the FBPS. Finally, the current policy environment supports a break from the existing policy, and a bill in the United States House of Representatives is currently in referral. In a recent

60 Minutes interview, Katie Couric asked Secretary of Defense Gates what changes he wanted to make in the culture at the Pentagon. He answered by saying "I want a part of this building that comes to work every single day, asking themselves, 'What can I do to help the soldier in the field today? What can I do to make them successful in the field and bring 'em home safely?'" (Gates, 2009). A change in the procurement policy of the FBPS may just be the answer.

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IV. Current USMC FBPS Funding Strategy

A. Introduction

Traditionally speaking, defense acquisition programs comprise a series of costs: research, development, testing, evaluation, investment, operations, maintenance and disposal costs. Figure 10 gives a graphical depiction of how the DoD incurs these costs throughout the lifecycle of a system.

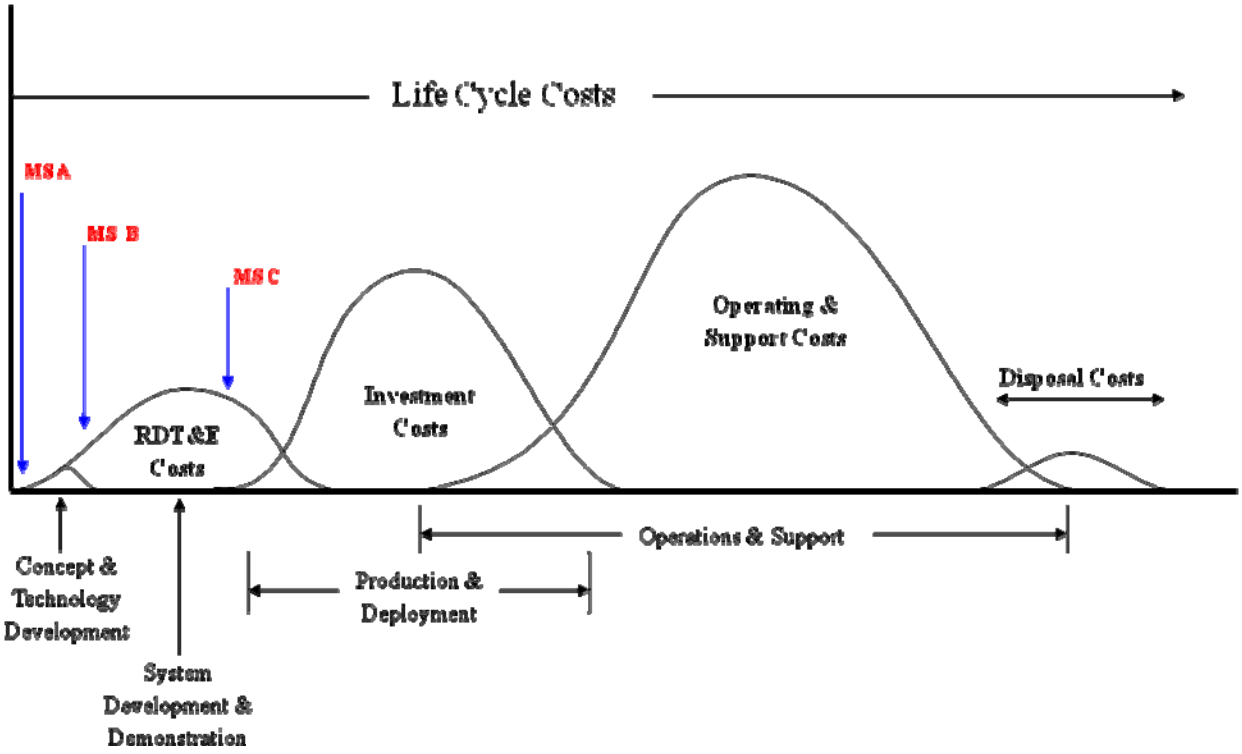

Figure 10. Lifecycle Costs of an Acquisition Project
(Mislick, 2009)

In the case of the FBPS, the investment costs are the subject of this research. Research, Development, Testing and Evaluation (RDT&E) and operation costs are inconsequential to the type of funding used to procure ballistic protection. However, as the research question states, which type of funding, one-year or three-year, provides a better value for the customer?

Since the commencement of the Global War on Terror, the Marine Corps funded the most recent FBPS purchases using supplemental appropriations. The urgent and compelling need for this equipment justified this method of funding, but in order to provide a baseline comparison, it is necessary to analyze an actual budgeted procurement versus an urgent acquisition. Therefore, this chapter presents a traditional FBPS budgeted procurement case that utilizes one-year appropriations. The FBA, known as the Interceptor System (see Figure 4), is a sufficient example for providing this baseline comparison. Although the Interceptor System comprises three distinct parts, the research will focus specifically on the acquisition of the OTV. Additionally, the production phase is of primary concern for the comparison, but the research presents the other phases of acquisition as background to the FBA acquisition.

One caveat to the presentation of the OTV acquisition is that the current DoD acquisition model is slightly different than the one authorized for use during the OTV procurement. Figure 11 provides a comparison of the OTV acquisition framework to that of the current model. Although the terminology is slightly different, the Milestones I, II, and III correlate with Milestone A, B, and C respectively.

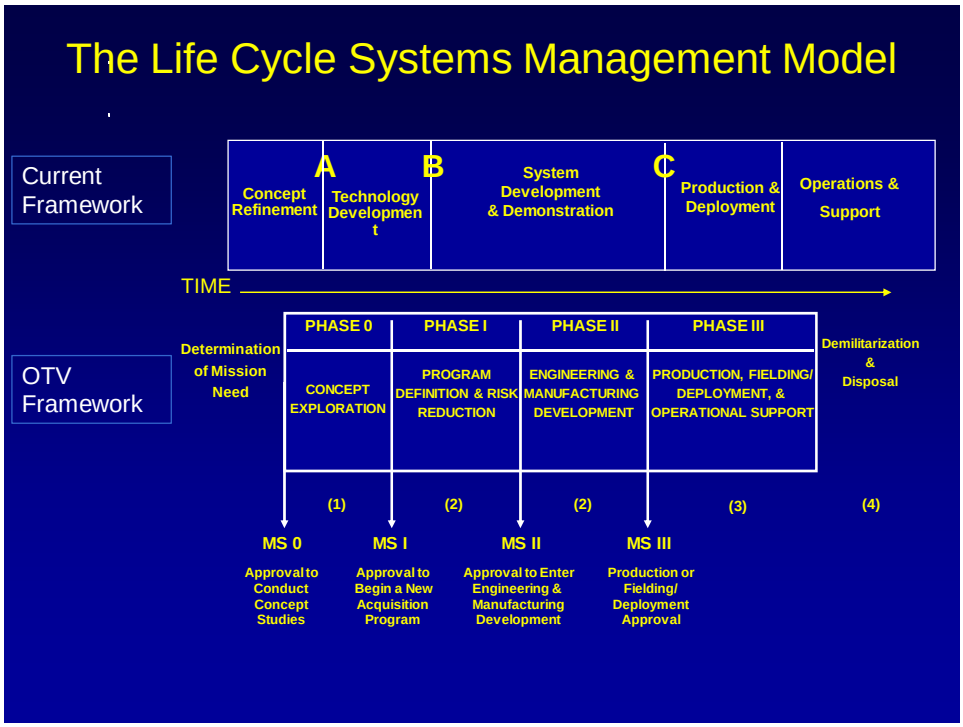

Figure 11. Comparison of OTV Acquisition Framework to Current Acquisition Framework
(After Petross, 2009)

B. Requirements Generation and Staffing Phase

Several strategic documents outline the major operational requirements for the FBA acquisition. These documents include the *National Defense Policy*, *National Military Strategy*, and the *Marine Corps Master Plan (MCMP) 1994–2004*.

According to the *OTV Operational Requirements Document (ORD)* the procurement "responds to two elements of National Defense Policy: Forward Presence and Crisis Response" (Marine Corps Combat Development Command, 1995, p. 1). Intrinsically, these two elements require Marines to defend national interests with the use of deadly force in areas in which individuals are susceptible to small arms and light machine-gun rounds. Furthermore, the threat of artillery and tank-delivered shrapnel rounds exists as well.

The *United States National Military Strategy* called for each Service to "provide forces that are capable of responding to crises involving the entire operational continuum" (Marine Corps Combat Development Command, 1995, p. 1). For Marines, the concept of the "Three Block War" would best explain the operational requirement described above. General C.C. Krulak, the 31st CMC, described the modern battlefield as one in which a "Strategic Corporal" leads his small unit in full-scale combat, peacekeeping, and humanitarian assistance operations in three contiguous city blocks (Krulak, 1999). The combination of these operations represents the entire operational continuum.

Finally, the *MCMP* established a "roadmap" for the USMC in the years ahead, and "It defines objectives and required capabilities to support the National Military Strategy and meet our global requirements" (Headquarters, 1993, p. 1–1). The *MCMP* established a list of actions to implement in accordance with the twenty DoD mission areas. Specifically, Mission Area 23, Close Combat called for the fielding of "an integrated suite of lightweight individual equipment which improves the survivability and comfort in all environments" (Headquarters, 1993, p. II–21).

The Marine Corps Combat Development Command (MCCDC)—the Marine Corps command responsible for drafting the *ORD* for the FBA—established three key performance parameters for the OTV: weight, fragmentation protection, and area of coverage. The *ORD* established objective and threshold values for each parameter. In the case of weight, the objective was 2.27 kilograms (5 pounds), and the threshold was 3.85 kilograms (8.5 pounds). The MCCDC based the objective values for the protection parameter on the existing battlefield threat. The area-of-coverage objective was similar to the PASGT, or 6.75 square feet for a medium vest (Marine Corps Combat Development Command, 1995).

The MCCDC also established some additional thresholds regarding the wear and use of the OTV. These included:

- Fit a Marine falling within the 5th and 95th percentile of height and weight,
- Fit and provide continued protection when wearing chemical protective clothing,
- Not prevent a Marine from performing normal tasks, to include effective employment of infantry weapons,
- Capable of being worn under the All-purpose Lightweight Individual Carrying Equipment (ALICE) system and future load bearing equipment,
- Made of non-corrosive materials with a dull/non-reflective finish,
- Fungus resistant,
- Not degraded by petroleum, oil and lubricant,
- Require no user maintenance other than normal care and cleaning,
- Not require an increase in support personnel or maintenance levels,
- Fully capable under all environmental conditions including tropical, desert, temperate, arctic, maritime, rain, snow, fog, dust, sand, high relative humidity, high temperature, and ice, and
- Capable of being donned and adjusted to fit in 30 seconds (threshold), 15 seconds (objective). (Marine Corps Combat Development Command, 1995, pp. 3–4)

Initially, the Marine Corps planned to purchase 122,382 OTVs in support of the active component using Operations and Maintenance, Marine Corps (O&MMC) funds; but MCCDC published a change to the *ORD* in 1998 that increased the requirement to 172,200. The Marine Corps later settled on 150,328 as the acquisition objective in 2004 (Marine Corps Combat Development Command, 1995).

C. Research, Development, Testing and Evaluation Phase

As is common among the Services, the Marine Corps capitalized on an emerging Army project to develop a modular body armor and load-bearing vest. Concurrently, the Marine Corps tasked the Natick Laboratory Army Research, Development, and Engineering Center (NRDEC) to develop an improved PASGT—complete with armor plating—as a low-risk secondary option to the Army modular vest. The NRDEC conducted a field user evaluation with prototypes of each vest, and although the users did not completely endorse one vest over the other, the users did desire certain components of each vest. Consequently, the Marine Corps diverged from the Army vest and tasked the NRDEC to develop a hybrid vest that captured the desired features of each vest (Townes, 2009).

The NRDEC completed the development of the prototype hybrid vest and presented the vest to industry for a possible government contract. Concurrent with the request for an industry proposal, the NRDEC conducted another user evaluation to validate the design. A driving force behind the swift development of the OTV was General Krulak's improvement initiative. General Krulak, the CMC from 1995 to 1999, made the vest one of the top priorities for the Marine Corps, and it moved quickly through the initial stages of the acquisition process. At this point, the Army became interested in the hybrid vest, and they proposed a joint acquisition. Although the joint venture will take some cooperation by both Services, this would allow for some overall program savings due to the economical order quantity (Townes, 2009).

The OTV was designated an ACAT IVT program, which is defined as "does not meet the criteria for ACAT III or above and requires operational test and evaluation, RDT&E total expenditure of less than $140 million in FY 2000 constant dollar" (Marine Corps Systems Command, 2007, p. 30).

In the case of body armor, military specifications, such as *Mil-A-46100D*, establish criteria for thickness ranges and test projectiles for first article testing. For the OTV, V50 protection ballistic limit is used. The V50 test limit is:

> the average of 6 fair impact velocities comprising the three lowest velocities resulting in complete penetration and the three highest velocities resulting in partial penetration. A maximum spread of 150 feet per second shall be permitted between the lowest and highest velocities employed in determination of ballistic limits. (DoD, 2007, p. 19)

A series of fragment masses, ranging from 2 to 64 grains, established the parameter threshold. The threshold established a minimum velocity at which the OTV would protect an individual from fragmentation. The Marine Corps conducted multiple tests in both the development and production of the OTV.

The operational requirements document addressed the scheduling considerations of the OTV acquisition by stating:

> Initial Operational Capability (IOC) is desired during FY 96, required during FY 97. Priority of fielding is to the active forces, other active forces, schools and training organizations, reserve forces, and other supporting establishments. IOC will be attained when fielding has been completed to one regiment in each Marine Division. Full Operational Capability is desired by FY 99, required by FY 00 and will be attained when fielding to the active forces and schools and training organizations has been completed. (Marine Corps Combat Development Command, 1995, p. 5)

The MCSC was the milestone decision authority for the OTV acquisition. The Assistant CMC approved the operational requirements document on January 5, 1995. Acquisition Milestones I and II occurred on the same day, December 30, 1996. Furthermore, a low rate initial production decision occurred on July 15, 1998. The Marine Corps awarded Point Blank Body Armor "a five year, firm fixed

price contract with indefinite delivery/indefinite quantity options" (Program Manager, Combat Support and Logistics Equipment, 1998, p. 5). The program manager originally designated the performance, cost and schedule risks as low. Additionally, the OTV could see as much as a 20% price reduction with a waiver of the Berry Amendment or the requirement to use domestic materials. The price reduction correlated to a $27.5 million savings through the life of the contract (Program Manager, Combat Support and Logistics Equipment, 1998). As is typical in these types of contracts, the Marine Corps designated both a minimum and maximum quantity of vests for procurement. Immediately upon awarding the contract in July, a contractor protest occurred. The situation was not resolved until the GAO ruled in the government's favor in October 1999. Finally, in April 1999, Milestone III occurred (Townes, 2009).

D. Production and Deployment Phase

Once Milestone III occurred, the program moved to the production and deployment phase. Table 2 shows the original budgeted cost and expenditure schedule for O&MMC Funds. The Marine Corps designated a corresponding fielding plan that coincided with costs incurred in Table 2.

Table 2. Budgeted Cost and Expenditure Schedule for O&MMC Initial Issue
(After Program Manager, Combat Support and Logistics Equipment, 1998)

AO	FY98 ($000)	FY99 ($000)	FY00 ($000)	FY01 ($000)	FY02 ($000)	FY03 ($000)	FY04 ($000)	FY05 ($000)	Total Budgeted	Total Required	Shortfall
172,200	$4430	$10398	$5448	$7725	$7895	$8441	$8213	$10922	$63472	$87822	($24350)

Although data exist for the total cost of the program, it is very difficult to corroborate the figures in Table 2 on a yearly basis by utilizing public sources. Consequently, depending upon your perspective, this is one of the advantages, or disadvantages, of utilizing one-year appropriations. O&MMC, the appropriation used for the FBPS, consists of specific budget activities. These budget activities divide into activity groups, which fund subactivity groups. For

the FBPS, the budget activity is “Operating Forces” (01), the activity group is “Expeditionary Forces” (1A), and the subactivity group is “Operational Forces” (1A1A). In all public documents, the O&MMC budget only publishes the total amount for each respective group, not the specific amount for FBPS.

The development baseline objective and threshold amounts for the OTV acquisition were $61,191,000 ($FY96) and $64,250,550 ($FY96) respectively. Due to the change in the acquisition objective in 1998, the production baseline increased to the respective amounts of $83,269,963 ($FY96) and $91,596,959 ($FY96). In 2004, the Marine Corps settled on a new acquisition objective, which changed the total costs to $69,798,132 ($FY96) and $76,777,945 ($FY96) (Program Manager, Infantry Combat Equipment, 2004). Throughout the production process, slight modifications in the product were possible.

E. Defense Funding Throughout the OTV Acquisition

Table 3 provides the dates of the various DoD Appropriations Acts from FY96-FY05, the duration of the procurement. The table highlights the laws that Congress enacted after the commencement of the fiscal year.

Table 3. Dates for the DoD Appropriations Acts Ranging from FY96-05
(After Pentagon Library, 2008)

FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
12-1-95	9-30-96	**10-8-97**	**10-17-98**	**10-25-99**	8-9-00	**1-10-02**	**10-23-02**	9-20-03	1-20-04

In the years highlighted in Table 3, Congress enacted a continuing resolution that provided funding as a rate of spending with various restrictions, such as prohibiting the start of any new programs (Potvin, 2009). The continuing resolution consistently loomed over the OTV acquisition, and several individuals noted that it was very difficult to maintain an efficient production line when the money for the program was uncertain. Accordingly, an inefficient production line

leads to a slowing of, or even a stop in, production that can lead to increased costs.

F. Chapter Summary

The OTV served as the Marine Corps' last budgeted procurement of body armor using one-year appropriations. The nature of the procurement required multiple contracts, despite cooperation from another Service. However, the funding of the procurement was difficult since several continuing resolutions of the *Defense Appropriations Act* made the funding inconsistent. Although difficult to quantify, the added challenges of using one-year appropriations are certainly evident.

V. Theoretical FBPS Funding Utilizing a Three-year Appropriation

A. Introduction

The *Practical Financial Management Guide* defines an appropriation as "the authority provided by an Act of Congress to incur obligations for specified purposes and to make payments out of the Treasury" (Potvin, 2009, p. 75). As discussed in the previous chapters, these appropriations come in many different forms based on their purpose, amount and time restrictions. Specifically, this chapter will address the theoretical acquisition of the FBPS using three-year appropriations. Figure 12 provides a graphical representation of specific appropriation terminology.

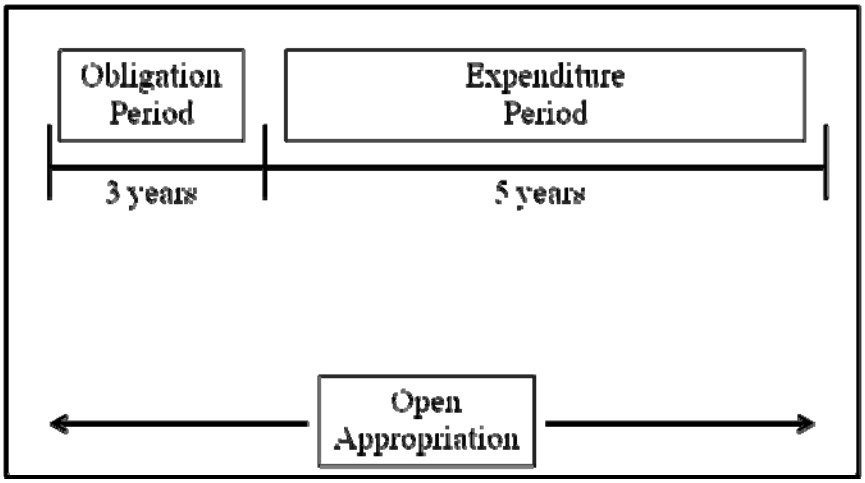

Figure 12. Procurement Terminology
(After Potvin, 2009)

B. Assumptions

The research developed a theoretical schedule utilizing procurement funding, but a few assumptions exist. First, since several components of Headquarters Marine Corps are required in order to complete an acquisition, the research assumed that the process began with the receipt of the requirement for

a new product. Specifically, the research focused on the actions of the MCSC to procure the item. These actions apply to the contracting and production of the FBPS item. In other words, the schedule commences with the reception of the requirement, in the form of a Capabilities Development Document, from the MCCDC.

Second, the research assumes that the Marine Corps is the only Service conducting the procurement. Although some cost savings may exist in a joint acquisition with another Service, the schedule does not account for the additional coordination required to conduct a joint acquisition.

C. Schedule

Figure 13 provides a theoretical Gantt chart on the acquisition of the Next Generation Body Armor System. The theoretical schedule calls for 937 days from receipt of the requirement to fully operation-capable. Specifically, items 1 through 23 will require RDT&E funding. Once Milestone C is complete, three-year appropriations are used. One should note items 25 through 37. For each one of these items, some inherent flexibility exists because the appropriation has a longer obligation period. Therefore, more detailed testing may occur, or the MCSC may extend the request for proposal to allow industry to push the capabilities of the current technology.

Another key point pertains to contracting. The contracting process is tedious, and although the chart simplifies it for graphical representation, the fact remains that the flexibility achieved using procurement funding allows for unforeseeable circumstances. For example, in the OTV, a contract protest stopped progress on the program and possibly jeopardized the fielding of the vest to the customer. While using procurement funding, some flexibility exists to deal with these unforeseen circumstances.

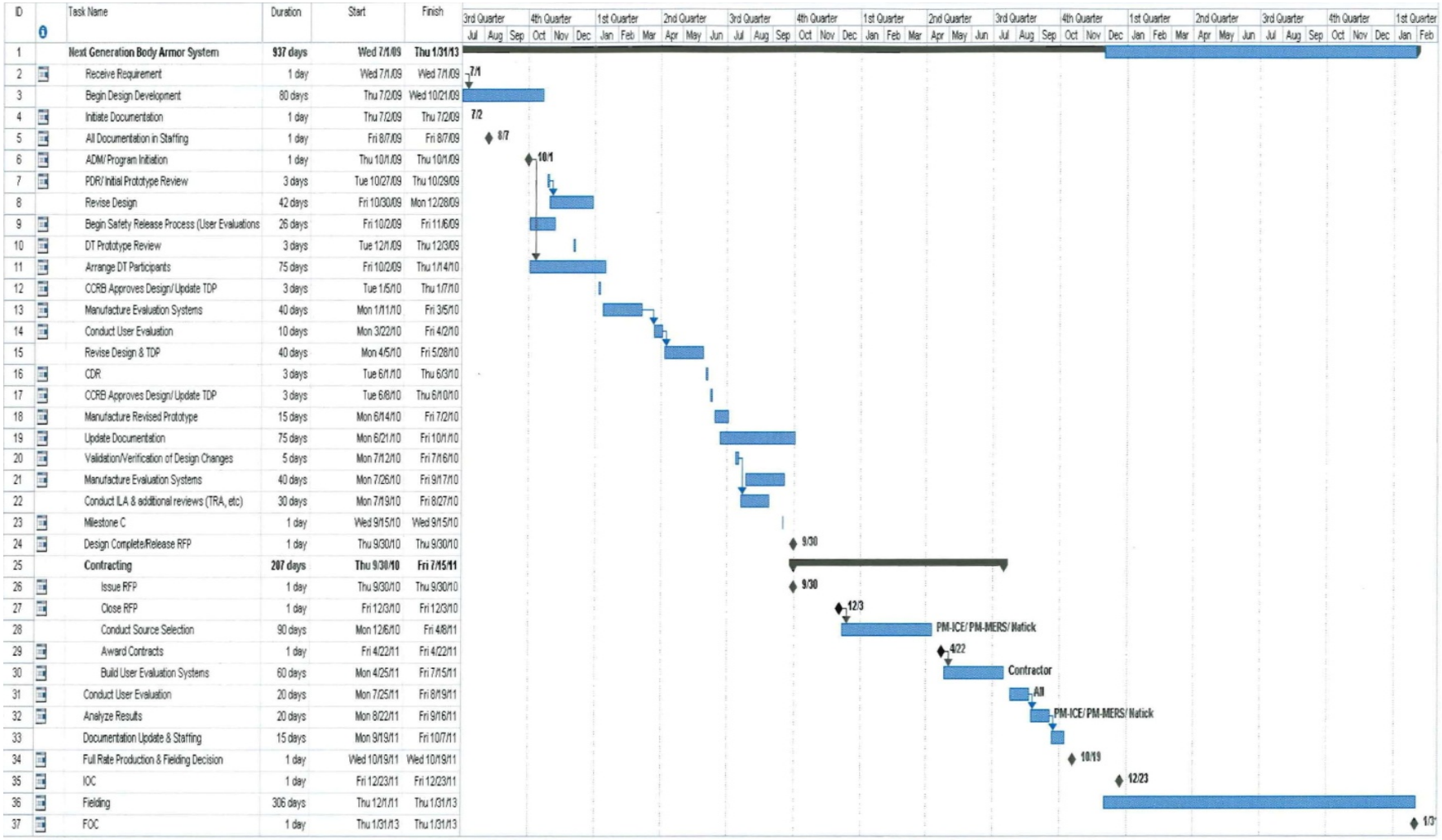

Figure 13. Theoretical PMC Acquisition Gant Chart
(From Lara & Carney, 2009, June 23)

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VI. Conclusion

A. Introduction

The purpose of this research was to analyze the issue of FBPS funding from several different perspectives to answer the primary and secondary research questions. These perspectives included fiscal law, acquisition timing, and cost savings as well as which appropriation type produced the best product. While compiling data to conduct the analysis, the researcher interviewed experts in each subject to gain a complete perspective of the issues associated with the FBPS funding. The research analyzed several public documents for evidence to support the conclusions presented. The research also developed a theoretical acquisition of the FBPS using three-year appropriations, which it compared to a previous procurement using one-year appropriations.

Ultimately, the research intended to compile all the facts regarding this complex issue into a succinct presentation to assist the nation's leadership in analyzing this issue. As stated by the Secretary of Defense, it is the responsibility of each member of the DoD to ensure that the operating forces get the best equipment needed to accomplish their mission. Although financial management of the FBPS may seem unimportant when faced with the task of fighting two wars, this type of analysis may lead to a competitive advantage over our adversaries and success on the battlefield.

B. One-year Appropriation vs. Three-year Appropriation

Other than the obvious difference of obligation periods, advantages and disadvantages exist for each type of appropriation. One advantage to annual appropriations is the flexibility in terms of the purpose of the appropriation. Typically, the DoD uses annual appropriations to operate the Department and purchase expense-type items. However, flexibility in annual appropriations translates to an ability to obligate funds from within the appropriation and to purchase another higher-priority item

within that appropriation. Conversely, procurement funding is limited in its ability to obligate money, and Congress only approves the purchase of a specific item. As in the case of the FSBE acquisition, the Marine Corps specifically designated an exact amount of vests to purchase. Consequently, Congress strictly regulates this amount and prohibits the Marine Corps from spending this money on anything other than the FSBE.

Another advantage to annual appropriations is the level of detail provided in the budget request to Congress. As stated in the acquisition of the OTV, specific documentation is not required in the budget preparation of annual appropriations. The *FMR* only requires a request for the total amount versus each specific line item. However, since body armor is such an important issue to Congress, inquiries often arise. These inquiries have led to preparation of many informal documents similar to those required for procurement-funding budget requests. On the other hand, three-year appropriations require specific documentation for how the Service intends to expend the money and for how many systems the appropriation will purchase. In some cases, a detailed work breakdown is required for the procurement. Additionally, an update is required in the subsequent budget years to document the progress in the acquisition.

An advantage to procurement funding is that the three-year obligation period better serves acquisition timing. Typically, an acquisition requires three to five years to complete. As discussed in the previous chapter, procurement funding provides the Marine Corps with more time to complete each phase of this process. Conversely, one-year appropriations can complicate the acquisition schedule, considering the time required to complete the purchase process before the money actually expires.

Another advantage to procurement funding is the risk associated with competing requirements. Once the appropriation is law, the treasury funds the program, and unless a congressional transfer or reprogram occurs, the funding will remain. For one-year appropriations, the level at which this reprogramming occurs is delegated to financial managers within the DoD.

C. Best Value

1. Cost Savings

It is difficult to quantify which appropriation provides the best value in terms of cost savings, but some assumptions on certain cost factors do exist. Since annual appropriations are not conducive to acquisition timing, some have suggested that compromises occur in order to utilize the funding before it expires. Typically, these compromises occur in the testing and user-evaluation arenas. Consequently, the Marine Corps fields a product, and then user modifications are noted. Oftentimes, the manufacturer can easily solve these problems, but in some extreme cases, a redesigned test and evaluation must occur; this is when the increased costs of using annual appropriations occur.

If the Marine Corps were to use three-year appropriations, these increased costs still may occur, but they are less likely. As noted in the procurement schedule, more flexibility exists in the schedule, and the existing pressure to obligate the appropriation decreases.

2. Better Product

As noted several times in the research, annual appropriations consistently carry an added pressure to compete within the acquisition schedule. This pressure translates into compromises in the design of the FBPS. Although the Marine Corps does an outstanding job in the current policy environment to account for schedule mishaps, unforeseen problems do occur. Additionally, as the research has noted, Congress has had a difficult time allowing the DoD the full budget year to obligate the funds.

Procurement funding, on the other hand, allows the Marine Corps to operate under a more suitable timeline concerning product acquisition. Since program managers have an extended obligation period with three-year appropriations, the

additional time translates to fewer compromises and more in-depth testing and evaluation in the earlier stages of product design. Therefore, the Marine Corps will inherently procure a better product.

D. Conclusions

The research strongly supports the proposition that legally, the Marine Corps can treat the FBPS as a DoD investment and, therefore, procure using three-year appropriations. Additionally, precedents have been set in this particular area of acquisition, and the policy environment will support this radical idea. A comparison between an annual appropriation acquisition and a theoretical three-year appropriation also concludes that procurement funding better suits the acquisition timeline.

However, several considerations regarding switching funding lines exist. First, since the Marine Corps currently funds the FBPS using O&MMC appropriations, different documentation is required in procurement funding. The documentation required is more detailed than is currently provided to Congress. Therefore, the Marine Corps must slightly modify the existing budgeting process to account for this change.

E. Recommendations for Future Acquisitions

1. The Marine Corps Should use Three-year Appropriations to Procure Future Items in the FBPS

Procurement funding provides the flexibility for acquisition professionals to provide the best value to the Marine Corps for new products in the FBPS. In addition, the visibility provided to Congress in the planning, programming and budgeting phases eliminates the additional requirements that have fallen on the Marine Corps during the execution phase of federal budgeting.

2. The Marine Corps Should Continue to Budget O&M Appropriations to Maintain the FBPS

Just as the Marine Corps would operate and sustain any other program purchased using three-year appropriations, the Marine Corps should treat the FBPS in the same way. Primarily, the sustainment would pertain to replacement parts for existing products and not procurement of new items in the FBPS.

3. The Marine Corps Should Maintain the Integrity of the FBPS

Since the FBPS comprises a system, it is imperative that the Marine Corps maintain its integrity. It would be difficult to account for each individual item in the FBPS, especially if financial managers use different funding lines for product procurement. It is the opinion of this researcher that the Marine Corps must maintain the system integrity in order to take full advantage of procurement funding for the FBPS.

F. Recommendations for Future Research

Many different opportunities exist for future research in the FBPS, particularly an analysis of new types of equipment and products available for ballistic protection. Many news articles have highlighted the increased fighting load that an individual wears during combat operations. Therefore, an investment in lighter, more durable materials benefits the individual on the ground. From a financial management perspective, a detailed cost estimation of some of the alternatives existing in the commercial market may prove valuable. Essentially, this would compare the costs and benefits of each alternative to provide a recommendation for the future of the FBPS.

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