

*EVALUATION OF THE MANAGEMENT OF THE DEPARTMENT
OF DEFENSE'S WHOLESALE AMMUNITION STOCKPILE*

THESIS

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Captain, USAF

AFIT/GLM/LAR/95S-15

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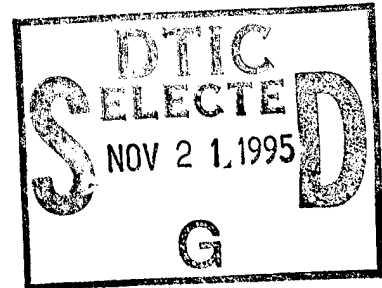
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EVALUATION OF THE MANAGEMENT OF THE DEPARTMENT OF DEFENSE'S
WHOLESALE AMMUNITION STOCKPILE

THESIS

Presented to the Faculty of the School of Logistics and Acquisition Management

Air Education and Training Command

In Partial Fulfillment of the Requirements for the Degree of

Master of Science in Logistics Management

David J. Rega, B.S.

Captain, USAF

September 1995

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Preface

This research evaluated how well the Single Manager for Conventional Ammunition manages the DoD wholesale ammunition. Experts from the military services were surveyed twice regarding four areas of responsibility the sponsor believed most important to SMCA operations. These areas of responsibility within the SMCA were storage of ammunition, demilitarization of ammunition, the tiering program for depots, and customer support. Conclusions were drawn based upon the feedback provided by the respondents on the two surveys.

Many thanks are offered to my thesis advisors, Dr. David Vaughan and Lieutenant Colonel Wayne Stone, who had the unenviable task of advising me. Thank you for your patience and understanding. Also, many thanks are offered to the sponsor of this research, HQ AFMC/XRW, especially to Mr. Bill Campbell and all those in XRW who offered advice and were patient with my constant requests for information. Special thanks and appreciation to the Air Force Liaison Office at HQ AMCCOM, Rock Island Arsenal, Illinois, including Chief Master Sergeant Clifford Mitchell, Lieutenant Colonel Dave Schwenning, and Mrs. Sylvia Just, all who provided a wealth of support and information. Additional thanks to Colonel Tom Maguire and Major Dave Noble--I greatly appreciate all your advice.

Finally, the most important thank you is forwarded to my wife Danielle and our son, Jacob. Without your support, understanding, and love I would not have been able to complete this thesis.

David J. Rega

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Abstract

This research was designed to solicit expert opinions regarding how well the Single Manager for Conventional Ammunition (SMCA) manages the DoD wholesale ammunition stockpile. Members of the Army, Navy, Air Force, and Marine Corps, as well as members of the Executive Director for Conventional Ammunition and the SMCA, were surveyed twice. The first survey contained four statements, each referring to a different area of responsibility for the SMCA. These four areas of responsibility were SMCA storage of ammunition, SMCA demilitarization of ammunition, SMCA tiering program for depots, and SMCA support of customers. The respondents were asked to provide positive and negative aspects for each area, as well as recommendations for improvements. The second survey sought to revalidate and summarize the expert opinions provided in the first survey regarding problem areas or areas for improvement. Additionally, the second survey contained a section designed as a preference tool to select the best method of managing DoD wholesale ammunition. By evaluating how the respondents responded to each statement or question on the second survey, conclusions were drawn as to what the experts believed were the positive and negative aspects of the SMCA, as well as areas the experts believed could be improved. The study concluded that SMCA does well storing ammunition and managing demilitarization, that the tiering plan, conceptually, is a good idea and that SMCA customer satisfaction is an area that requires additional attention.

EVALUATION OF THE MANAGEMENT OF THE DEPARTMENT OF DEFENSE'S WHOLESALE AMMUNITION STOCKPILE

I. Introduction

Subject

Prior to the mid-1970s, the Department of Defense (DoD) allowed individual services to manage their own conventional ammunition stockpiles during peacetime. But during World War II, the Korean War, and the Vietnam War, the DoD centralized management of conventional ammunition to fulfill wartime tasking more efficiently. After the Vietnam War, the DoD decided to begin centrally managing ammunition during peacetime. Therefore, in March 1975, the DoD directed the Department of the Army to develop a centralized ammunition management agency for all services. The resulting organization, the Single Manager for Conventional Ammunition (SMCA), was fully implemented as part of Army Material Command in fiscal year 1977 (12:1).

Congressional hearings and General Accounting Office (GAO) reports have evaluated how effectively the SMCA manages ammunition. In 1979, the GAO conducted a review of the efficiency of SMCA operations. The GAO found the SMCA needed more control and a stronger organization position than provided by the Army under Army Material Command. GAO further stated there were several problems with the current organization of the SMCA that hindered further centralization of ammunition (14:5).

The GAO cited that the SMCA organization lacks asset visibility, has limited communication channels, and competes for resources against other Army, non-SMCA programs. Additionally, the GAO criticized the Army because the office of the SMCA is

staffed primarily by Army personnel and is viewed by other services as an Army organization rather than a DoD-wide organization as planned.

In 1982, GAO conducted a follow-up study of SMCA operating efficiency. In this report, the GAO noted that the DoD did make some improvements. However, the GAO found little progress in further strengthening the centralization of ammunition management (4:9). The services were still reluctant in fulfilling GAO's requirement of providing a centralized inventory control point. Additionally, the non-Army services experienced problems with the SMCA regarding proper maintenance, renovation and storage of service-specific, SMCA-managed wholesale stocks. Finally, lack of inventory accountability had decreased the services' readiness posture. Inspections of all items stored by the SMCA routinely identified mis-placed or mis-matched items, resulting in wasted manpower and money.

Questions concerning what is stored in the SMCA and where it is stored continue. This perpetual problem was addressed as recently as May 1993. A Wholesale Ammunition Stockpile Program (WASP) joint service team inspected three SMCA-managed ammunition depots. The results were not positive. The following are a few of the WASP findings.

The lack of inventory accuracy has doubled the number of times an order can not be completed correctly (issue denial rate). The issue denial rate in turn delays the release of ammunition at depots, which during a wartime environment can seriously affect service readiness. Maintenance requirements are increasing while maintenance personnel and facilities decrease. Condition code data may not be realistic or executable. Southwest

Asian returns forced installations to accept ammunition without a storage plan, causing improper storage, unknown inventory, and increased costs while degrading readiness. Overall, lack of accountability and accessibility increases manpower requirements, delays shipments, and increases costs while degrading readiness. By the end of fiscal year 1995, significant tonnage will be stored outside, subjected to accelerated deterioration, and fragmented lots will cause delayed response time and increased shipping costs. Confidence in the stockpile is diminishing; accidents could result from reduced visibility (3:1-2).

Problem Statement

The Single Manager for Conventional Ammunition has difficulty meeting all requirements necessary to manage the DoD wholesale ammunition stockpile to the complete satisfaction of all the military services, resulting in a potential decrease in DoD readiness.

Objectives

There are two objectives the sponsor of this research, HQ AFMC/XRW, wishes to accomplish. The first objective is to gather data from experienced personnel in each of the military services and the SMCA to find common issues relating inventory problems with the DoD wholesale ammunition stockpile. The experienced personnel will be asked to offer positive and negative comments, as well as potential improvement areas, for four

areas pertaining to wholesale ammunition and the SMCA--storage, demilitarization, the SMCA's tiering plan, and customer service.

The second objective is to propose improvements based upon the results of the consolidated data. These proposed improvements will increase efficiency and manageability of the three services' wholesale stockpiles. Commonality among the responses will form the basis of the conclusions.

Limitations of Scope

Because the SMCA manages items for all the services, to evaluate all aspects of the SMCA would be exhaustive if not impossible for one person. Therefore, this research will address only the areas of depot storage, demilitarization, the SMCA tiering plan, and customer support within the SMCA. Other aspects of the SMCA, such as procurement, will not be addressed.

II. Literature Review

Introduction

The DoD has had a long-standing problem managing ammunition during peacetime. Though the individual services wished to be autonomous in managing their own ammunition stockpile, the DoD found that wartime centralization of ammunition management resulted in many efficiencies, such as large-scale procurement of common-use items and consolidated shipments (14:1).

The DoD eventually centralized the management of ammunition for peacetime as well as wartime. Though the centralization of ammunition has improved the management of ammunition, a continuing problem is the health of the DoD stockpile. This chapter provides an overview of the development of the SMCA and identifies problems in inventory accountability and maintainability.

Review

During World War II, the Korean War, and the Vietnam War, the DoD centralized management of conventional ammunition to fulfill wartime tasking more efficiently. Wartime centralized management of ammunition differed from peacetime ammunition management. The DoD allowed individual services to manage their own conventional ammunition stockpiles in peacetime. The services were able to retain the autonomy and, therefore, priorities as deemed necessary (13:8-9).

However, the idea of centralized management of ammunition during peacetime continued to be debated. Procurement and shipment complications experienced during the

Vietnam War clearly displayed a need for centralized management of ammunition at all times, wartime or peacetime. By the late 1960s, ammunition production plants were not well maintained, delays in production were frequent, and there was much duplication of effort among the services (12:1).

In 1968, the DoD tasked the Logistics Management Institute (LMI) to develop a plan for updating ammunition production facilities. Two years later, LMI recommended that improved coordination between the services would increase efficiency and reduce duplication among the services' production facilities. By 1973, the DoD tasked the services to develop a coordination plan for management of the defense production base (2:6). This tasking led to the formation of the Joint Conventional Ammunition Production (JCAP) Coordinating Group. The mission of the JCAP Coordinating Group was to coordinate and upgrade the management of the ammunition production base. However, many inefficiencies continued to hamper how the services managed their ammunition (12:2).

In December 1973, the GAO issued a report recommending the centralization of all ammunition activities into one organization. By 1975, the DoD had established the Single Manager for Conventional Ammunition, to be managed by the Department of the Army (7:2-1). In October 1977, the SMCA became operational (4:4-8). Implementation of centralized management for DoD ammunition was now complete. However, implementation did not mean that all the problems associated with the prior management of ammunition were solved.

In 1979, the GAO issued a report titled "Centralized Ammunition Management-A Goal Not Yet Achieved." The report noted that progress was being made toward the centralization of ammunition management. However, the GAO recommended placing the SMCA at a higher level in the DoD organization and giving it the necessary control over all conventional ammunition items. Additionally, other areas requiring further attention included management of facility and procurement programs, accountability of ammunition inventories, and the transitioning of service-owned conventional ammunition items to the SMCA (14:5).

The DoD agreed only in part with these recommendations and never fully implemented the requested changes. Two recommendations were not fully implemented. The first recommendation not implemented was the placement of the SMCA in the Army chain of command; the GAO proposed to have the SMCA report directly to the Secretary of the Army, while the services agreed to have the SMCA report to the Material Development and Readiness Command commander. The second recommendation not fully implemented was the amount of control the services retained over certain ammunition items; the GAO proposed that the SMCA control all ammunition, while the services wanted to retain control over certain ammunition items and, in some cases, to have an input to production facility decisions (14:5). Reasons for continued control were increased visibility and flexibility of these service-specific items.

Additionally, the non-Army services had reservations about losing control over retail stocks (items individual services own and store themselves) (11:1994). Field operating commanders believed losing control of these stocks to the SMCA would

directly impact their war fighting capabilities by allowing an organization outside their service to decide how the commander's ammunition would be managed. These reservations were strong enough to limit the Congressionally-suggested change of centralized management of all ammunition items.

An important aspect of the single manager concept is inventory accountability of the stockpile. The SMCA was established to provide efficiencies to the management of DoD ammunition (8:1; 9:1). However, as the Congressional and GAO reports state, the SMCA has had problems in the past maintaining and accounting for the ammunition it stores. Many of the problems persist.

Two large studies completed in the last two years--the Red Team and the Wholesale Ammunition Stockpile Program (WASP)--provided an in-depth evaluation of how the SMCA currently operates. The Army initiated the Red Team in December 1992 to address mission impacts on the ammunition stockpile resulting from funding shortfalls. The specific purpose of the team was to find ways to reduce cost of managing ammunition by standardizing as many depot receipt, storage, and issue processes as possible (10, 2).

The Red Team inspected six depots. Though the team found many internal inefficiencies the depots were responsible for, such as duplication of previous inspections and mis-routed shipments, little significant financial savings resulted. However, what the team found to be the biggest problem for the depots to handle and, therefore, had a great effect on the depot financial situation, was the retrograde (or return) of ammunition from overseas. Unfortunately, the SMCA has little control over external events. Limited

external control can result in the SMCA's being forced to accept unforecasted shipments, thereby reducing limited funds programmed specifically for forecasted shipments.

Items coming back from overseas were often received with improper condition codes, incorrect markings, and in mixed lots. Additionally, the volume of ammunition coming into the depots was much more than the depots could process and store. The outcome was an inability to inspect and assign permanent condition codes for all items prior to storage. Consequently, the SMCA's inventory problems were significantly increased by the retrograde of overseas units.

Though the military services and the SMCA knew the large retrograde due to European base closures would be difficult for the Army depots to process and store, each of the services had little choice but to send its overage ammunition back to the U.S. Compounding this problem was a round of base closures in the U.S. that threatened to close or restrict the use of the few remaining Army depots. An additional hurdle for the depots was that many were reaching their covered storage capacity limits.

The large amount of overage ammunition being pushed into depots that were almost full, without the proper paperwork, was the main reason why the services were apprehensive about the storage of their wholesale stockpiles. This apprehension resulted in the formation of the WASP, or Wholesale Ammunition Stockpile Program, in May 1993. The WASP was formally tasked to review the condition of the DoD wholesale ammunition stockpile within the SMCA storage base (15, ES-1).

The WASP conducted visits to three installations during July and August of 1993. Overseas retrograde, amount of unserviceable material in storage, and fragmented lots

were just a few of the many selection criteria used by the WASP to choose the three specific depots. To further clarify potential readiness, quality, and safety issues, the WASP requested and received from each service a Top 20 list of items the services deemed most in need of inspection from a readiness/safety standpoint. The status of the Top 20 list became the focus of the WASP.

What the WASP found during their evaluation of the three installations was no surprise, given the number of hurdles the SMCA had faced over the previous two years. The accuracy of the inventory posture was 13% below standards. Data indicated that accountability would continue to degrade if funding levels continued as forecasted. By 1996, the WASP Team determined it would be "difficult to know what we have, where it is located, and what condition it is in" (15, ES-17).

The depots were found to be almost at covered storage capacity. The WASP estimated the overall depot storage capacity would be breached by the end of Fiscal Year 1995. If any items were to be shipped to a full depot, the depot would store the items outside. Exposure to the weather increases the amount of degradation each item would undergo, resulting in increased future maintenance and the wasting of valuable assets.

The WASP summarized that sustainability of stored items was declining, as were inventory accountability and stockpile confidence. The WASP predicted that readiness would continue to decline if inventory and storage problems persisted. Recommendations included the re-warehousing of stored items using an automated Storage Space Utilization program (15, ES-23). The re-warehousing suggestion helped lead the Army to the proposed tiering of its ammunition depots.

The Integrated Ammunition Stockpile Management Program provides a methodology for restructuring the current wholesale ammunition storage base for all services. The plan also addresses changes in stockpile management methodologies for distribution, storage, inventory, surveillance, maintenance, and demilitarization. As a result of the changing world political environment, force reductions, and decreased funding, streamlining the storage base into an efficient and effective operations has become imperative to maintain a high level of readiness (6, 1-3).

The final objective is to have a smaller, safer stockpile on fewer installations using less manpower. Figure 1 provides a breakout by service of the quantity of ammunition the SMCA stores. The method of accomplishing the final objective is to create a tiering system based on the Army's eleven primary wholesale stockpile storage installations (Figure 2, all depots except Pine Bluff).

The tiering system is segregated into three levels:

- **Tier I Active Core Depots.** Normal activities include daily receipts/issues of training stocks, storage of war reserve stocks required in contingency operations <C+30 (contingency start date plus 30 days), and additional war reserve stocks >C+30 to augment lower level tier installation power projection capabilities.
- **Tier II Cadre Depots.** Activities include static storage of follow-on war reserve requirements >C+30, store production offset stocks, and limited non-required demilitarization stocks. Daily activities are minimal for receipt/issues, while workload is primarily focused on maintenance, surveillance, inventory, and demilitarization.

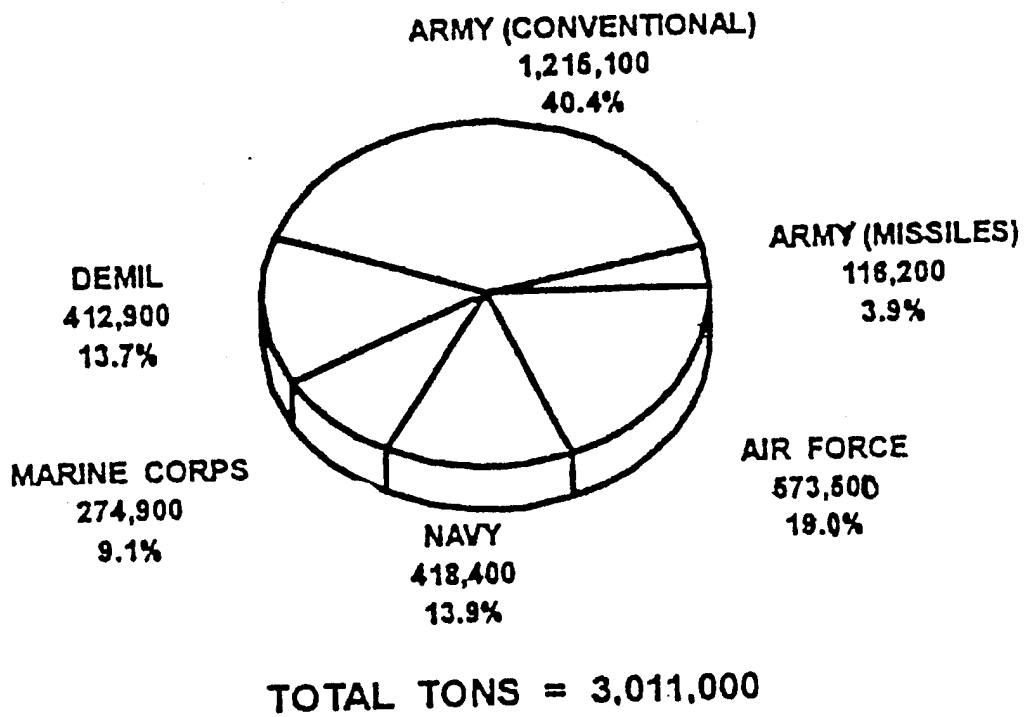


Figure 1

SMCA Wholesale Ammunition Storage Base (6: 7)

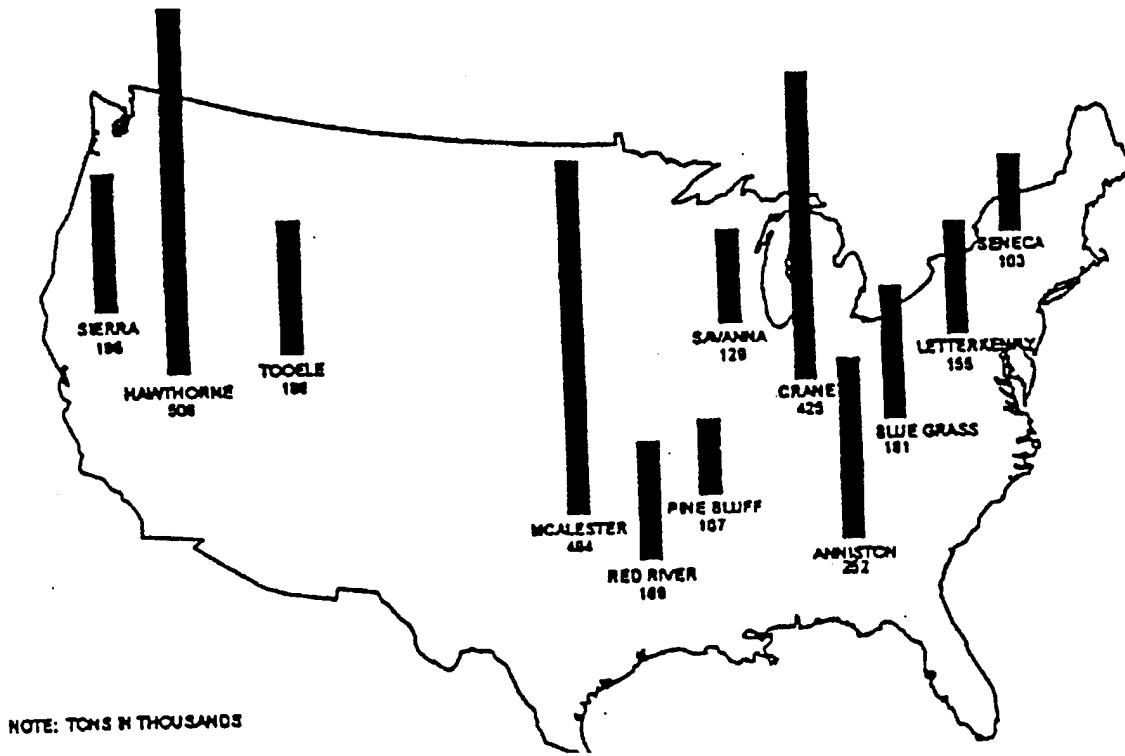


Figure 2

Army's Primary Wholesale Ammunition Storage Installations (6: 7)

required demilitarization stocks. Daily activities are minimal for receipt/issues, while workload is primarily focused on maintenance, surveillance, inventory, and demilitarization.

- **Tier III Caretaker Depots.** These installations are minimally staffed and contain static non-required stocks in static storage until disposition can be made (6:11-12).

A tier depot analysis was performed February through March 1994 to identify and assign appropriate tier levels for each of the eleven primary storage installations. This qualitative and quantitative analysis coupled with the necessity of meeting power projection requirements of the two Major Regional Conflicts (MRCs), as outlined in Defense Planning Guidance, resulted in a realignment of the CONUS wholesale storage infrastructure. Table 1 and Figure 3 display the depots of the tiering plan (6: 13-15).

The Army is still developing and streamlining the Integrated Ammunition Stockpile Management Plan. The plan's tiering system will affect the Air Force wholesale stockpile. Optimistically, the tiering system will clear from the depots much useless material such as the large backlog of items awaiting demilitarization, thereby freeing up needed covered storage space. Additionally, high-priority war reserve stocks will be more accessible and better maintained. The processing and shipment of ammunition needed to support two MRCs will be simplified.

Many experts who supported this research wondered how the Army will be able to fund this program. The required funding needed to implement the entire plan is \$206 million of Operations and Maintenance money above the normal requirements for fiscal

Table 1

Regional Depots per Tiering Plan

Tier	East	Central	West
I	Tooele Army Depot	McAlester Army Ammunition Plant	- Crane Army Ammunition Activity - Blue Grass Army Depot
II	Hawthorne Army Ammunition Plant	Red River Army Depot	- Letterkenny Army Depot - Anniston Army Depot
III	Sierra Army Depot	Savanna Army Depot Activity	Seneca Army Depot Activity

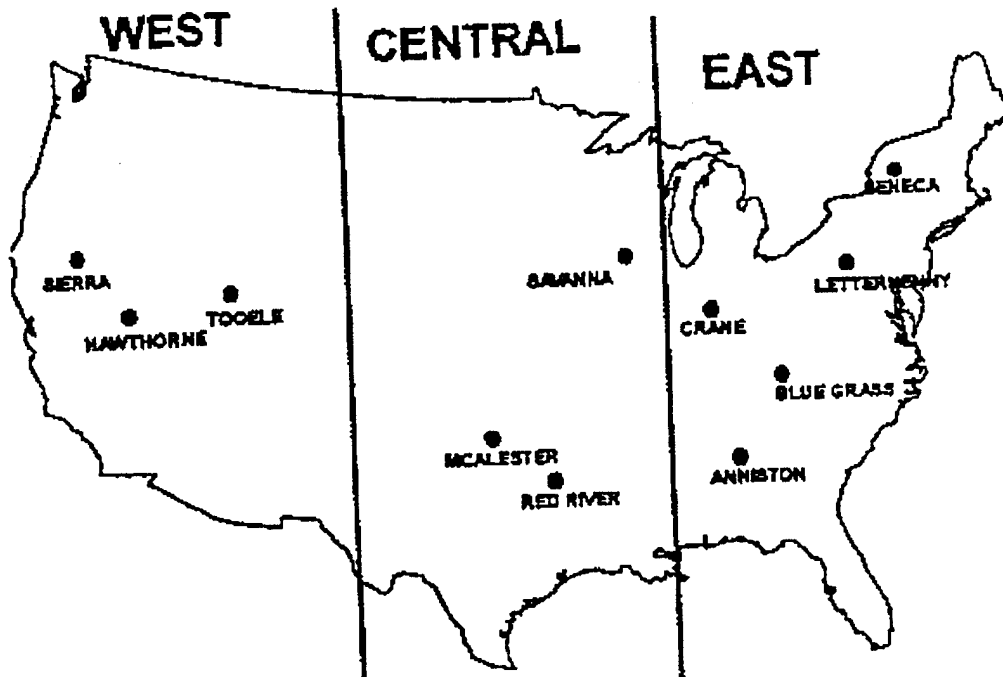


Figure 3

Tiering Plan's Breakdown of Depots by Region (6: 13)

years 96-98. Though this investment is anticipated to save \$56.5 million in FY99 and \$70 million per year cost avoidance in FY99 and beyond, many experts fear that if the tiering program is not fully completed, the state of wholesale ammunition may continue to degrade.

Another fear of some experts who supported this research was whether the depots under the tiering system will be able to meet outload requirements for two MRCs. The tiering system is designed to focus the outload of ammunition during wartime scenarios to tier I depots for <C+30 requirements. Experience during Operation Desert Storm identified a problem of trying to move too much out of all the Army Depots at once. Under the tiering system, ammunition will initially be outloaded from only the tier I depot that is aligned with that particular MRC. For instance, if the Air Force needed to ship war reserve items to PACAF, the tier I depot on the West coast (Tooele) would have to ship out all Air Force <C+30 ammunition. Many believe shipping this large amount of ammunition out of one depot in a short time frame is extremely difficult, if possible at all.

Summary

Ammunition management is a topic that has been discussed at length for many years. However, it was not until the Vietnam war that the DoD pushed the services to develop a peacetime centralized management plan for conventional ammunition. The resulting organization, the Single Manager for Conventional Ammunition (SMCA), was established in 1977. Over the last 17 years, the SMCA has been refined to better serve the

needs of the services. However, problems with inventory accountability and maintainability remain.

This chapter reviewed the background of how and why the SMCA was developed. Furthermore, recent initiatives evaluating the questions of inventory accountability and integrity were investigated. The next chapter, the methodology section, will describe the research tool used to elicit expert opinions from experienced people in the ammunition community.

Possible Outcomes

One possible outcome could be a better understanding of how the tiering of the Army depots will work. A follow-on question to the above possible outcome is, how would a large scale re-warehousing for the tiering proposal affect the readiness posture within each service?

Another possibility is if the three-tier proposal is implemented, the services will be able to validate what their inventory is exactly, and be able to assist in the decision-making process of where to store their items. A follow-on question for this possible outcome is, how does each service decide where to store its ammunition?

III. Methodology

Overview

This chapter explains the methods employed to fulfill two research objectives. The first objective is to gather data from experienced personnel in each of the military services and the SMCA to find common issues relating inventory problems with the DoD wholesale ammunition stockpile. The second objective is to propose improvements based upon the results of the consolidated data.

Acquisition of Data

The Delphi technique, so named because the oracle of Delphi (an expert) was questioned by King Croesus and later proven correct (1,1), was used to collect data. The technique elicits opinions from experts to obtain a group response through the use of an interactive question process. For this research, the group of experts is requested to provide their opinions twice on the status of inventory problems within the SMCA. The Delphi technique as used in this research offers three basic features that make it attractive as a method of collecting data. These features are anonymity, controlled feedback, and statistical group responses (5,4).

Sample

Another characteristic of the Delphi technique is that a large sample is not necessary to formulate significant results. This characteristic is important when applied to the DoD ammunition community. Outside the SMCA, the military services have a limited

number of experts who understand how the ammunition cycle works, from acquisition through sustainment to use by operational units.

A sample size of 30-40 people was deemed large enough to develop significant results. The representatives were spread among the military services and the SMCA. The sample included approximately 5 to 10 ammunition experts from the Army, Navy, Air Force, and Marine Corps. Additionally, approximately 10 people within the SMCA were sampled. A sample greater than this might have involved opinions of people who did not understand the full scope of the SMCA operation, and therefore, might have skewed the results of the research. Those who were asked to participate were mid- to upper-level managers, many of whom were on or involved with the Joint Ordnance Commander's Group Executive Committee or one of its sub-groups. The sponsor believed people who worked at this organizational level had the greatest amount of expertise of SMCA procedures while simultaneously being involved in day-to-day ammunition operations for their respective offices.

Instruments

The tools used to collect the data were questionnaires. Two questionnaires were given to the group of experts, each addressing areas of concern within the SMCA. The first questionnaire (Appendix A) was the most subjective. A pre-test was given to two different groups, one at HQ AFMC and one at HQ AMCCOM, with a total of five respondents. The results from this first pre-test provided vital feedback on organization, content, and topic areas suggested for the first survey. One change to the first survey that

came directly from a recommendation from the first pre-test was to ask each survey respondent to provide what the respondent liked, disliked, and how the respondent would change each of the four specific areas addressed in the first survey. Another change to the first survey that was the result of pre-test feedback was to limit the number of areas addressed in the survey. The number of addressed areas on the first survey was reduced from eight to four.

Once the revised survey was verified as being an instrument that could extract the information needed for the research, the survey was forwarded to the selected experts. The surveyed experts were given four short statements. The experts were asked to provide positive and negative aspects, and areas of improvement for each of the following four topics: SMCA storage of ammunition, SMCA demilitarization of ammunition, SMCA tiering program for depots, and SMCA support of customers. The first questionnaire was then analyzed for commonality among the respondents' answers. The answers that were repeated most frequently by the respondents from the first questionnaire formed the basis for the questions on the second questionnaire.

Additionally, respondents were asked how many years of experience they had with any DoD ammunition organization as well as which DoD organization--Army (non-SMCA), Navy, Air Force, Marine Corps, SMCA, Other--they currently work in. This information was requested for the purpose of establishing how experienced the surveyed group was. A number of respondents provided more than one organization they currently work in. This multiple listing can be explained by understanding that many organizations, including the SMCA and EDCA, have joint billets. An example of a multiple answer

would be a Marine Corps officer who works in the SMCA. The officer could answer with both the Marine Corps and the SMCA choices in response to the questions, "What organization do you currently work for?"

A second pre-test was accomplished prior to completion of the second survey. As with the first survey, two groups with a total of six different experts from those completing the first and second surveys completed the pre-test. After adjusting the wording, spacing, and alignment of the questions in each of the four sections, the pre-tested second survey verified that the second survey was easy to understand, and that it would provide information needed for the research. The questions on the second questionnaire (Appendix B) were more objective than the questions from the first questionnaire. A sample question from the second questionnaire was, "Please rate how strongly you disagree or agree with the following statement: Funding for inspections and maintenance is sufficient." The respondents were then given a five point Likert scale from which to choose an answer:

Strongly Disagree (1) /Disagree (2) /No opinion (3) /Agree (4) /Strongly Agree (5).

Final analysis was based upon how often each choice of the Likert scale was chosen.

Data Collection Plan

The sponsor of the research, HQ AFMC/XRW, helped to identify the 30-40 most experienced people from whom we could elicit help. Many of the respondents had already been contacted by XRW and agreed to help. A response rate of close to 50% was expected, because all the respondents work closely with each other and have been

supportive in the past of any information or data requests. The actual response rate was lower, a little less than 50% of surveys administered. Twenty six out of sixty eight answered the first survey, while 28 of 70 answered the second survey. An additional two surveys were forwarded for the second survey, a result of problems experienced with the first survey where responding offices lost surveys; the additional two surveys were a planned overage to cover for mis-placed surveys.

Each survey administered contained a return envelope addressed to the Air Force Liaison Office at Rock Island Arsenal, Illinois. Respondents were asked to place their names on only the front page of each survey. The Liaison Office, acting as a third party, was instructed to code each survey, throw away the cover page containing the respondent's name, and return the coded surveys to the analyst. This coding plan was expected to ensure anonymity by not allowing the analyst know who filled out each survey. However, each survey was returned to the analyst with the cover page, so the analyst completed the coding before analyzing any surveys. This retrieval method was used for both surveys.

Analysis Method, Test Criteria, and Interpretation

By using the Delphi Technique, simple comparisons of how many respondents answered a question provided adequate support for any conclusions based upon the data collected from the two surveys. For the first survey, general trends were noted, both positive and negative. For example, if 20 of 28 respondents replied that the SMCA stored

wholesale ammunition well, then this data was taken as a positive trend and generalized to show that most respondents believe the SMCA stores wholesale ammunition well.

Analysis of the second survey was accomplished differently. The first two sections of the second survey used Likert scales that determine respondents' levels of agreement and performance levels of different aspects of the SMCA. For example, if 26 of 28 respondents disagreed with the statement "Funding for inspections and maintenance is sufficient," then it was generalized that most respondents believed that funding for inspections and maintenance is insufficient. The third section of the second survey used a 100 point preference scale to determine which areas within the SMCA were most important. Analysis of this section used percentages; the area that respondents answered was most important, on the average, was generalized to be most important to most respondents.

The fourth section of the of the second survey was designed to validate a concept a number of respondents developed on the first survey. Ten of 26 respondents on the first survey replied there was a need for either a DoD-level agency to manage wholesale ammunition or a reorganized SMCA that would receive funding through channels other than those of the Army. In this section, respondents were asked to list their preference among a DoD-level agency, a reorganized SMCA, SMCA as it currently operates, or some other option not listed that the respondent could provide details for. For example, if 21 out of 26 respondents replied that they preferred the DoD-level agency to any other option, it was generalized that most respondents believed a DoD-level agency offered the best option to manage DoD wholesale ammunition.

Conclusion

Using the Delphi method, a group of ammunition experts from the military services and the SMCA was sampled to gather data pertaining to the research problem statement. Two different questionnaires were administered, the first more subjective than the second. The data was consolidated and evaluated for commonality of answers among respondents. Recommendations were proposed based upon analysis of the evaluated data.

IV. Results and Analysis of Survey 1

Introduction

The first survey of ammunition experts sought general, objective viewpoints from the experts in regards to how the SMCA was operating. The second survey, based upon answers from the first survey and administered to individuals in the same sample who answered the first survey, was more subjective. Respondents replied with levels of agreement or performance to certain subject areas. This methodology was designed to elicit expert opinions on what areas of the SMCA operated adequately or inadequately, and what improvements could be made.

This chapter evaluates and analyzes the responses from the first survey. The organization each respondent works in and the level of experience each has in the ammunition field is analyzed first, followed by a separate analysis of each of the four questions on the first survey. An analysis of the results of the first survey as a whole follows. Any comment or response referred to as “positive” is a comment or response that supports how the SMCA currently operates. On the other hand, a “negative” comment or response refers to one that perceives a problem with how the SMCA operates or may offer an area for improvement.

Results and Analysis

Results of organizations and experience levels. Surveys were distributed to selected experts in the following organizations: Army (non-SMCA), Army (SMCA), Army (Executive Director of Conventional Ammunition (EDCA)), Navy, Air Force, and the

Marine Corps. Specifically, surveys were sent to the members of the Joint Ordnance Commander's Group (JOCG) Executive Committee for each service as well as the Air Force, Navy, and Marine Corps Liaison offices for the SMCA. Additionally, two other offices within the SMCA were issued surveys: the Demilitarization and Defense Ammunition sections of the SMCA.

The offices selected to receive surveys offered different perspectives on how the SMCA operates. It was believed that by adding the service Liaison offices for the SMCA as well as responses from the EDCA and the SMCA itself to the individual services, that a diverse sample would be drawn. Table 2 displays three sections pertaining to organizations that received the first survey: how many each organization received, how many each organization returned, and the level of ammunition experience of the respondents. Of 68 surveys sent, 26 were returned, for a response rate of 38%.

Results and analysis of question 1, survey 1. The first question of the first survey asked for the respondents' views of the good and bad aspects of SMCA storage of ammunition as well as potential improvement areas. Of 26 responses, three claimed to have no experience with SMCA storage, five were completely positive, seven were completely negative, and eleven listed some positive and negative aspects in regards to SMCA storage. Positive comments included:

- "Ammunition stored in responsible manner; magazines well maintained; security closely monitored. Army depots diligent and responsible for high-priority ammunition within funding constraints."
- "Storage facilities and accountability good to excellent; much storage is static, therefore, efficiency is high."

Table 2

Survey Organizations and Levels of Experience

DoD Organization Listed	# of Surveys Sent	# of Surveys Returned	Ave # of Years of Experience
Army(non-SMCA)	10	0	0
Army (non-SMCA)/A.F.		1	28.5
Navy	10	0	0
Air Force	10	4	16.25
A.F./Liaison Crane Depot		1	2
Marine Corps	10	4	19.5
EDCA	5	1	17
EDCA/Marine Corps		1	26
EDCA/Army		1	11
SMCA	17	7	20.43
SMCA/A.F.	3	3	10
SMCA/Marine Corps	2	2	22.5
SMCA/Navy	1	1	1
Total	68	26	446.5 for an average of 17.17

- "Good for the most part. Generally very responsive as long as forecasted and funded. Good effort with Requested Delivery Dates."

- "Extremely effective, efficient, and economical."

Most responses were positive in nature; more than half of the responses contained a positive comment or suggestion.

However, most responses contained some negative comments. Of 26 responses, three claimed to have no experience in the area of SMCA storage of ammunition and five were all positive. The rest contained some negative aspect or area for improvement for the SMCA. Negative comments included:

- "Less than desirable storage practices; has stored new or recently-refurbished items out doors. Jam igloos to the extent that inventory/inspections not possible. Could improve by increasing funding--inaccurate forecasts by services does not help."

- "Done very well. Funding shortfalls forcing periphery functions--rewarehousing, surveillance, inventories--to not be completed to acceptable levels. Army needs to sell requirement as a DoD not Army shortfall. Services need to forecast needs more accurately."

- "Generally O.K. but lack of funding causes problems in maintaining high level of readiness. Standard inventory /supply management procedures have been discarded to meet minimal regulatory and customer needs."

- "Storage not at peak levels. Results from changing service requirements, lack of funds, small/fragmented lots. Improve by funding surveillance and rewarehouse at adequate levels."

Overall, most respondents agreed that the SMCA stores ammunition well when two considerations are taken into account. They are:

1) Lack of funding - Lack of funds adversely impacts required inventories and inspections.

2) Inaccurate forecasts - The services contribute to the SMCA's storage problems by shipping items that are unforecasted and contain mixed lot numbers.

In terms of bias based on organization, none was detected. Of 26 responses, 18 contained some negative aspect, five were all positive, and three claimed to have no experience with SMCA storage. Every organization that participated had at least one response with negative inputs. Of the five completely positive comments, two were made by respondents from the SMCA, one by a member of the Army, one by a member of the Marine Corps and one by a member of the Air Force.

Results and analysis of question 2, survey 1. The second question of the first survey asked for the respondents' views on the positive and negative aspects of SMCA demilitarization of ammunition as well as potential improvement areas. Of 26 responses, four had no comments or were unfamiliar with SMCA demilitarization, five comments were completely positive, six were completely negative, and eleven listed both positive and negative aspects. Positive comments included:

- "Continues to be a high priority. Drive to move away from open burning/open detonation to more environmentally-friendly means is strong. Through the Demilitarization Technology office and the JOCG subgroup for demilitarization, SMCA actively pursues solutions."
- "Everything seems on even keel. Funding at level to match capability and capacity of system. Obsolete and unserviceable munitions being disposed of with a good degree of efficiency."
- "Fencing of funds for demilitarization has moved problem area in right direction."
- "Good example of what teamwork can accomplish (military and industry). Funding must be maintained at \$70 - \$100 million--anything less looks like financial risk to industry. Without funding, will lose industry as partner. Industry must be given incentive to stay involved with demilitarization and advance technologies."

Demilitarization was viewed by most respondents as a positive area for the SMCA. Most responses were positive in nature; those responses that contained both positive and negative aspects were mostly positive.

On the other hand, six responses out of 24 were completely negative, as well as eleven responses that contained some negative comments. Negative comments included:

- "Future not rosy. Funding for demilitarization will decrease in 3-4 years. EPA requirements for demilitarization and transportation are increasing costs greatly. EPA misinterprets requirements for hazardous waste. Waivers and exemptions from EPA requirements should be pursued more aggressively by DoD."

- "SMCA has done too little to rid itself of worthless assets. Assets have been collecting for years and now funding and environmental considerations do not allow for inexpensive demilitarization. Assets now assume critical storage space which hinder novel storage management decisions."

- "Problems have abated to some extent because funds are "fenced" only for demilitarization and SMCA has over-estimated amount of demilitarization in B5A account. Problems with weights and measurements in catalogue system. EDCA requested a financial audit of SMCA demilitarization--should reinforce idea of fencing money for programs."

- "None of the elements are truly optimized. Need personnel to optimize. Progress lags behind funding until there are more personnel. After FY96, funding drops off to a level that will support only organic base workloading at a very reduced level. Benefits of contracting lost."

In regards to demilitarization, most agree that SMCA's management of the demilitarization of ammunition is going well. The underlying reason for effective demilitarization is that demilitarization has become a priority and funding has been raised to 100 percent of its requested amount. Potential problem areas raised included that funding for FY97 will drop to <50 percent of the forecasted need and that the backlog of items awaiting demilitarization is still too large, resulting from years of neglect. This

backlog in turn wastes needed storage space. Again, no organizational bias was noted. Of the five completely positive responses, two were from SMCA, one from the Army (non-SMCA), one from the EDCA, and one from the Air Force. Of six completely negative responses, three were from the Air Force, one was from the Marine Corps, one was from the Navy, and one was from the SMCA.

Results and analysis of question 3, survey 1. The third question of the first survey asked for the respondents' views of the positive and negative aspects of the SMCA tiering program for depots as well as areas that could be improved. Of 26 responses, three had no comment or lacked experience in this area, and three responses were completely positive. There were no responses that were completely negative. Positive comments included:

- "Tiering concept a brilliant deduction. Initial data collection thorough, comprehensive, and overwhelming. If implemented, believe all objectives will be met."
- "Tiering program needed. SMCA has been in existence since 1977 without any distribution management policy. Tiering program is a distribution management policy. Methodology a good first effort."
- "Essential to downsize to redefine the mission and become more cost effective. System used to assign facilities within each tier was well designed to meet future requirements but politics and service inputs may have changed the outcome."
- "Program has merit only if right resources and commitment to program is applied by not only the SMCA but the other services as well."

The tiering program was viewed by most respondents as having some positive value. Most agreed that if properly implemented, the tiering system would add value to how ammunition is stored.

Though most respondents provided positive comments concerning the tiering system, many also had reservations about how the tiering system would be implemented or the potential dangers if the tiering system is only partially implemented. Negative comments include:

- "Probably neither good or bad for services outside the Army. Potential bad is not being able to meet outload requirements for tier I (1 or 2 MRCs). Needs to be tested with an exercise of rather significant proportions. Paperwork exercise not enough."

- "Shortcomings--insufficient time spent analyzing data prior to implementation. Large amount of money required up-front to accomplish its targets. End state target dates have been changed which adversely impact current operations. Too many personal views allowed to be incorporated. Lack of technical and detailed insight to be pushing forward so soon. SMCA attempting to implement tiering concept on a "pay as you go" basis. Numbers change, which discounts tiering plan's integrity and casts doubts on overall project. Apparently not done with same goals as BRAC."

- "Tiering should have been explained better to customers up-front and customers allowed to provide input to process to determine the stratification levels."

- "Need to keep customer fully apprised. For any future changes, customers need to be fully involved, not just kept aware. Tiering will expedite the death of the depots due to BRAC."

Overall, almost all respondents agreed that the SMCA's tiering plan was a good concept, and that the Army needed to be proactive as downsizing continues. Though agreeing that there was merit in the idea in general, respondents stated reservations concerning the large amount of funding required over a number of years to complete the stratification, the possibility of not completing the program which may increase SMCA storage problems, and the lack of a large-scale test including service involvement to ensure that the concept is physically possible. No organizational bias was noted. Of the three

responses that were completely positive, one was from the Army (non-SMCA), one was from the Air Force, and one was from the Marine Corps. There were no completely negative responses for this question.

Results and analysis of question 4, survey 1. The fourth question of the first survey asked for the respondents' views of the positive and negative aspects of SMCA support of customers (individual services) as well as areas the SMCA could improve its customer service. Of 26 responses, one claimed to have no experience, three were completely positive, and four were completely negative. The other 18 responses contained both positive and negative responses. Due to the length and depth of the responses as well as the inferred importance of customer support to the respondents, five positive and negative examples of each will be given. Examples of positive responses are:

- "One of the stronger aspects of the SMCA. Though services feel this is weak, overall customer service is very good. Item managers go beyond normal duties. Downsizing hurts mission; however, believe this area has not suffered from underage due to dedication and excellent relationships with services."
- "Believe support to Marine Corps has been very good lately and have good working relationship."
- "Services probably get the support they work for. Those that are most closely involved day-today get the best overall support. Is give and take--customers and SMCA have to understand that each can not get everything they want."
- "In most cases, support is very good. Because SMCA managed by Army, Army priorities are sometimes SMCA priorities. Within last year, great strides have been taken to improve customer support. in such a large dynamic organization, it is impossible to solve everyone's problems."
- "Obvious answer is excellent. No other service has the responsibility for attempting to satisfy requirements of customers like the SMCA. SMCA has attempted to consider large numbers of service requirements and incorporate them. SMCA bends over backwards with little or no gratification for efforts. SMCA is

dual hatted as Army and other organizational representative. Biggest problem is to positively promote accomplishments.”

Most responses had a comment stating that customer support was generally good, then offered many examples of problem areas or areas for potential improvement.

Negative responses that were provided were in-depth and to the point. Examples of negative responses include:

- “Depots do not have customer service orientation. Problem is staff structure within SMCA--they cause many problems (simulate the enemy). Detected sense of arrogance at JOCG Executive Committee. Customers perceived as uninformed and unwanted critics of expertly-run system. Diplomacy and decorum of JOCG lost on Executive Committee, which sets the agenda for JOCG and, therefore, wields much power. Why should SMCA be customer oriented? Stuck with unenviable mission. SMCA is chronologically under-funded by the Army; they can not do their job properly because fiscal fate is beyond their control. SMCA not resourced or aligned to perform mission; this frustrates competent workers.”

- “This is an area that needs most money and attention. One service can not fund enough money to provide for all services. Either money must be “fenced” to ensure joint service ammunition is in top condition, at right place, and easily transported or another system must replace what exists. One service can not apply TQM methods to the SMCA and be a customer of itself. If it helps itself, it shortchanges customers. If it helps customers, it shortchanges itself. Being both a supplier and a customer is too big a challenge.”

- “SMCA not good ambassador. Concept of organization is good. As an organization, SMCA does not have enough joint service (purple) representation in the right places to influence day-to-day operations. Specific areas for support are in Supply Depot Operations and in Maintenance.”

- “Services appear to get what they want. Much bickering because of Army versus SMCA funding. SMCA funding decisions always questioned due to having Army as host organization.”

- “Decided trend to exclude services from some aspects of SMCA management and policy-making decisions. IOC resulted in changes to the SMCA process without coordination with the services. IOC team established to conduct organizational study of SMCA leading to possible SMCA reorganization had no non-Army service members on team. Increased incidence of poor quality accepted

by SMCA for delivery to services. Loss of ammunition while being reworked has negative impact on meeting transportation requirements.”

Industrial Operations Command (IOC) is the combination of the former Armament, Munitions, and Chemical Command (AMCCOM) and Depot Systems Command (DESCOM). IOC is the Army organization under which the SMCA is aligned. Though many of the negative responses regarding customer service were lengthy in comparison to positive and negative responses for other questions, most respondents agreed that generally customer service was good overall when considering the restraints which the SMCA must function within

Overall, the respondents believed that there is a need for change with SMCA customer service. Though the SMCA does well within the constraints of the system it operates in, there are problems of the services not receiving what they need and the Army operating the SMCA without other service involvement. A majority of the responses stated there needs to be more service involvement such that the services have greater involvement in SMCA operations. Some suggested this increased service involvement could be accomplished by providing more joint positions, especially at the highest levels of the SMCA.

Though the question of customer support offered an opportunity for much parochialism, there did not appear to be any bias by organization in the responses. Of the three completely positive answers, one respondent was from the SMCA, one was from the Marine Corps, and one was from the Army. Of the four completely negative responses, two were from members of the Air Force and two were from members of the Marine

Corps. Though these four negative responses may appear to be non-Army service bias, the SMCA and Army respondents who answered both positively and negatively on behalf of the SMCA provided much negative criticism for how the SMCA conducts its customer service or listed areas needing improvement.

Conclusion

The responses to the first survey provided a wealth of information from which to draw for the second survey. From the first survey, the responses from the first question concluded that the SMCA does well storing wholesale ammunition considering two constraints: 1) the SMCA is underfunded by the Army to complete all its required duties and, 2) the services contribute to the SMCA's problems by sending mixed lots of items to the depots and by inaccurately forecasting to the SMCA each service's requirements of what will be shipped into and out of the depots.

The second question concluded that the SMCA has done very well managing demilitarization. Areas that could be improved upon included funding for FY97 and beyond, and the necessity for the SMCA to rid itself of the large backlog of items awaiting demilitarization.

The third question concluded that the tiering concept was generally good. Respondents were apprehensive about the large amount of funding required to complete the tiering plan, about what would result if the tiering plan was only partially implemented, and about the lack of a large scale test with service involvement to prove out the tiering concept. The fourth question provided much data pertaining to the positive and negative

aspects of SMCA customer service. Though many agreed that customer service was adequate, most stated changes were needed. Problem areas identified included the services not receiving what they requested or required, and lack of service involvement in SMCA operations, a problem contributed to by the Army, the SMCA, and the services.

A common response from the fourth question that required further investigation was in regards to the development of a non-Army, joint service organization designed to manage all wholesale ammunition in place of the SMCA. Out of 26 responses, ten mentioned the need to develop a joint-service, DoD organization to manage ammunition in place of the SMCA or to reorganize the SMCA such that ammunition funding for all services will be accomplished outside Army funding channels. This common response came from the Air Force, Marine Corps, EDCA, and the SMCA respondents.

Summary

The first survey of ammunition experts sought general, objective viewpoints regarding how the SMCA was operating. The first survey contained four statements describing different areas of responsibility within the SMCA. The experts were asked to provide positive and negative aspects, as well as areas of improvement for each of the four areas of responsibility. The consolidated responses formed the basis for survey 2.

V. Results and Analysis of Survey 2

Introduction

The second survey further clarified the depth of the problems presented in the first survey. The second survey contained four sections. Each section of the second survey addressed each of the four main areas from the first survey, using a different sampling style in each section. The second survey was sent to the same organizations as the first survey. The quantity of second surveys sent was increased to 70 to cover for lost or misplaced surveys--a problem for two organizations with the first survey. Of 70 second surveys sent, 28 were returned for a response rate of 40%.

This chapter evaluates and analyzes responses from the second survey. The second survey is analyzed by its four sections, each taken as an individual entity. The overall results of the second survey are analyzed last. Any comment or response referred to as "positive" is a comment or response that supports how the SMCA currently operates. On the other hand, a "negative" response refers to a comment or response that perceives a problem with how the SMCA operates or may offer an area for improvement.

Results and Analysis

Results and analysis of section 1, survey 2. The first section of the second survey used the following Likert scale to identify how strongly respondents agreed or disagreed with nine statements regarding areas of concern for the SMCA outlined in the first survey:

Table 3

Results of Section 1, Survey 2

Section 1		Results: Likert Scale 1				
	Statement	1	2	3	4	5
A	Funding for inspections and maintenance is sufficient.	10	16	1	1	0
B	Retrograde from SWA was handled with ease.	11	7	6	4	0
C	Proliferation of lot numbers resulting from SWA retrograde is <u>not</u> a problem.	9	12	7	0	0
D	Funding of the SMCA through the Army is the best method to fund the SMCA.	10	7	6	5	0
E	The demilitarization backlog is under control.	7	12	4	5	0
F	The fact that the Army is the SMCA's largest customer has <u>no</u> effect on how well the SMCA operates.	9	11	3	4	1
G	The formation of the IOC will have <u>no</u> impact on how the SMCA operates.	11	9	6	2	0
H	Funding for demilitarization over the next 10 years will meet all requirements. (1 respondent did not answer)	14	10	3	0	0
I	The SMCA's tiering plan will help resolve the shortfall of storage space.	3	9	4	12	0

Table 5

Results of the Last Three Statements of Section 2, Survey 2

Section 2		Results: Likert Scale 3				
Statement		1	2	3	4	5
F	The number of joint billets in the SMCA is:	7	11	9	1	0
G	The number of inventory and surveillance inspections is:	11	13	3	1	0
H	The level of funding the SMCA will receive for the tiering program is:	8	10	10	0	0

Twenty four of 28 respondents replied they believed the number of inventory and surveillance inspections to be either inadequate or slightly inadequate. The statement, "The level of funding the SMCA will receive for the tiering plan is" resulted in 18 of 28 respondents scoring either a 1 or a 2 on Likert Scale 3, indicating that most respondents believed the level of funding for the tiering plan to be poor. The statement, "The level of service involvement in SMCA decisions is" resulted in 21 respondents scoring either a 2 or a 3 on Likert scale 2. Also, the statement, "The number of joint billets is" in the second section resulted in 27 of 28 respondents scoring a 1, 2, or 3 on Likert scale 3. The last two responses indicate that most respondents believed the level of service involvement and the number of joint billets to be less than excellent.

On a more positive note, twenty five of 28 respondents scored the statement, "The SMCA's tiering plan to increase the level of readiness within the depots is" either a 3 or a 4 on Likert Scale 2, indicating that most respondents believed the tiering plan to increase the level of readiness to be greater than excellent.

The majority of respondents scored each of the following three areas either a 2 or a 3 on Likert Scale 2, which can be interpreted as less than excellent. The statement, "The services' forecasting methods as a whole are" resulted in 19 of 28 respondents scoring either a 2 or a 3. The statement, "The SMCA's storage situation is" resulted in 25 of 28 respondents scoring either a 2 or a 3. Finally, the statement, "SMCA storage practices are" resulted in 20 of 28 respondents scoring either a 2 or a 3.

Results and analysis of section 3, survey 2. The third section of the second survey used a 100 point scaling system to determine respondents' opinion on the level of importance for seven factors affecting the SMCA. Each respondent was instructed to allocate 100 points, total, to the seven sections. Table 6 displays the seven statements as well as the resulting averages for each statement.

Overall, the area of SMCA storage of wholesale ammunition was graded a very important area when compared to the other areas evaluated in section 3's preference list. In section 3's preference list, three statements referring to how well SMCA stores ammunition, surveillance /inventory inspections and maintenance (21.11); services' workload forecasts (12.86); and optimization of storage space within depots (13.00) scored a total of over 46.97 of section 3's 100 points

Respondents believed that demilitarization is an important area within the SMCA; demilitarization scored 17.00 out of 100 points. This score was the second highest score

Table 6
Results of Section 3, Survey 2

Section 3		Results:
	Statement	Averages
A	Surveillance/inventory inspections and maintenance	21.11
B	Demilitarization	17.00
C	Services' depot workload forecasts	12.86
D	Optimization of storage space within depots	13.00
E	Tiering program	12.14
F	Service involvement with SMCA operational decisions	15.57
G	SMCA being an Army organization as opposed to being a stand-alone organization	8.32
	Total	100.00

for any individual statement in section 3. The tiering plan scored 12.14 points out of 100 in section 3, the second lowest of the seven areas addressed in section 3. The statement, "Service involvement with SMCA operational decisions" averaged 15.57 points on the 100-point preference scaling system, the third highest out of seven statements, while the statement, "SMCA being an Army organization as opposed to being a stand-alone

organization” averaged 8.32 points, the lowest average amongst the seven statements in section 3.

Results and analysis of section 4, survey 2. In the fourth section of the first survey, 10 respondents out of 26 suggested the development of a non-Army, joint service organization to manage all wholesale ammunition in the SMCA’s place or to reorganize the SMCA such that ammunition funding for all services would be accomplished outside Army funding levels. The fourth section of the second survey was designed to validate that these two options were indeed possible, and to determine the preference level of each option. Table 7 lists the four options offered and the respondents preferences for each option (first, second, third, or fourth best out of four options). For example, one respondent chose option A as its first preference, four chose option A as their second preference, 13 their third, and eight their fourth preference.

Fourteen of 26 respondents selected as their preferred choice the option that defined a DoD-level agency to manage all wholesale ammunition in place of the SMCA, eleven chose the option that described a reorganized SMCA that would receive its funding directly from Congress, and one chose the option describing the SMCA as it currently operates. Eight chose as their second choice the DoD-level agency, thirteen chose the reorganized SMCA, and four the SMCA as it currently operates.

Table 7
Results of Section 4, Survey 2

	Option	1st	2nd	3rd	4th
A	Wholesale ammunition managed as it currently is by the SMCA, aligned under the Army, funded through Army channels.	1	4	13	8
B	Wholesale ammunition managed by the SMCA, aligned under the Army. However, the SMCA gets funded for all ammunition responsibilities directly from Congress and there is a larger involvement by the Navy, Marine Corps, and Air Force in the day-to-day operations of the SMCA (more joint billets).	11	13	1	1
C	Wholesale ammunition managed by a DoD-level agency (such as a Defense Munitions Agency) which has 1) a separate funding line from Congress; 2) all positions equally split between services with commander position rotating among services; 3) control all storage, procurement, and sustainment of wholesale stockpiles.	14	8	5	0
D	Other.	0	0	5	9

Conclusion

The first survey concluded that the SMCA does well storing wholesale ammunition considering two constraints. The first constraint is that the SMCA is underfunded by the Army to complete all its required duties. The second constraint is that the services contribute to the SMCA's problems by sending mixed lots of items to the depots and by inaccurately forecasting to the SMCA each service's requirements for inbound and

outbound shipments to the SMCA. Data from the second survey supported this conclusion from the first survey.

Most respondents agreed that funding for inspections and maintenance is insufficient; that the SMCA had problems handling the SWA retrograde; that the proliferation of lot numbers resulting from SWA retrograde was a problem; that the services' forecasting methods, the SMCA's storage situation, and the SMCA's storage practices are generally less than excellent (21 of 28 scored SMCA's storage practices in the lower 3 of 5 choices); and that the number of inventory and surveillance inspections is inadequate.

The first survey concluded that the SMCA manages demilitarization well. Suggested areas of improvement included full funding for FY97 and beyond, and the necessity for the SMCA to rid itself of the large backlog of items awaiting demilitarization. Data from the second survey supported that demilitarization funding and backlog need some attention. Overall, the second survey concluded that demilitarization is an important area within the SMCA, though the demilitarization backlog and funding for the next 10 years are areas within demilitarization that the SMCA should address.

The first survey concluded that the tiering concept was generally good. Respondents were apprehensive about the large amount of funding required to complete the tiering plan; that partial implementation of the tiering plan could lead to more problems for the SMCA than it currently has; and that there was no large-scale test to check the tiering concept for adequacy of meeting all the services' requirements. The data provided in the second survey supported most of these conclusions.

Overall, the second survey concluded that the tiering plan is not one of the more important areas affecting the SMCA. Most respondents agreed that the tiering plan will increase the level of readiness within the depots and that the level of funding the SMCA will receive for the tiering program is inadequate. These results are consistent with the results from the first survey.

However, the respondents' replies as to whether or not the SMCA's tiering plan will resolve the shortfall of storage space were split; 12 disagreed and 12 agreed. This split between agreement and disagreement is inconsistent with the data from the first survey; most respondents replied in the first survey that they believed the tiering plan to be step in the right direction in solving many of the SMCA's storage problems.

The first survey concluded that there is a need for change in regards to SMCA customer service. Though most respondents agreed that the SMCA does well providing customer support within the constraints of the system it operates in and is improving, many also stated that there are problems of the services not receiving the service they need and that the Army operates the SMCA without involving the services. Additionally, ten of 26 respondents to the first survey stated there is a need to develop either a joint-service, DoD organization to manage ammunition in place of the SMCA or to reorganize the SMCA such that ammunition funding for all services will be accomplished outside Army funding channels. The data from the second survey supported these conclusions.

Section 4 of the second survey was designed specifically to validate the responses from the first survey that stated there is a need for either a joint-service, DoD-level ammunition organization or a reorganized SMCA that would receive funding outside

Army channels. Overall, 45 of the 49 respondents who provided a first and second preference chose either the DoD-level organization or the reorganized SMCA as to how DoD wholesale ammunition should be managed. Five selected how the SMCA currently operates as their first or second preference as to how DoD wholesale ammunition should be managed.

On the other hand, having the SMCA as an Army organization as opposed to a stand-alone organization had the lowest average in section 3's 100 point preference scale. A low score on section 3's 100 point preference scale coupled with respondents' preference for either a DoD-level agency or a reorganized SMCA to manage DoD wholesale ammunition would indicate that though most believe reorganizing the SMCA would improve how the SMCA operates, this reorganization is not an important aspect of day-to-day SMCA operations. Rather, a reorganized SMCA is how the respondents believe wholesale ammunition would best be managed given an optimal situation.

Overall, the second survey concluded that funding for the SMCA through Army channels is not the best method to fund the SMCA, that the Army being the SMCA's largest customer does affect how well the SMCA operates, that the formation of the IOC will have an impact on how well the SMCA operates, that the level of service involvement in SMCA decisions is generally average to poor, and that the number of joint billets in the SMCA is less than adequate. In section 3, service involvement with SMCA operational decisions had the third highest average on a 100 point preference scale. This high score on section 3's 100 point preference scale indicates that service involvement is an important aspect of day-to-day operations of the SMCA

Summary

The second survey sought to clarify the depth of the problems outlined in the first survey. The second survey contained four sections, two sections that used different Likert scales to identify level of agreement or performance of problem areas from the first survey, one section that used a one hundred point scaling system to differentiate preferences between seven areas of the SMCA deemed important in the first survey, and one section that was specifically designed to determine preferences of how the SMCA is organized. Each section addressed each of the four main areas outlined in the first survey. The questions and statements within each section were designed to summarize and revalidate the accuracy of the experts' opinions of the problem areas identified in the first survey.

VI. Summary, Conclusions, and Recommendations

Introduction

This chapter reviews and summarizes the research completed on the efficiency and effectiveness of the SMCA operation. The chapter offers conclusions based on the inputs of the expert respondents who replied to two surveys regarding the SMCA. Finally, this chapter offers recommendations for additional research areas.

Summary

This research effort was designed to solicit expert opinions regarding how well the SMCA manages the DoD wholesale ammunition stockpile. Members of the Joint Ordnance Commander's Group's Executive Committee from each service were contacted, as well as representatives from the Navy, Marine Corps, and Air Force Liaison offices for the SMCA; the Executive Director of Conventional Ammunition (EDCA); and from within the SMCA itself. Two different surveys were sent to each respondent.

The first survey contained four statements, each referring to a different area of responsibility for SMCA. The respondents were asked to provide positive and negative aspects of each area, as well as recommendations for improvements. A total of 68 surveys was sent; 26 surveys were returned. The respondents provided a large amount of data from which the second survey was based.

On the first survey, respondents summarized that the SMCA does well storing wholesale ammunition considering two constraints. The first constraint is that the SMCA is underfunded by its owning organization, the Army, to complete all its required duties

and functions. The second constraint is that the services contribute to the SMCA's problems by sending items in mixed lots and by inaccurately forecasting each service's requirements for inbound and outbound shipments. Next, the first survey summarized that the SMCA does well managing demilitarization. Suggested areas for improvement included increased funding for FY97 and beyond, and the necessity for the SMCA to rid itself of the large backlog of items awaiting demilitarization.

The first survey also summarized that the SMCA's tiering plan was generally good, though there was some apprehension noted regarding the large amount of funding required to complete the tiering plan, about what would result if the tiering plan was only partially implemented, and about the lack of a large-scale test to prove out the tiering concept. Finally, the first survey summarized that SMCA customer service was improving. However, most stated changes were needed, including greater involvement of the non-Army services in SMCA operations as well as the services not receiving the support they requested or required.

The data obtained in the first survey became the basis for the second survey. Specifically, the second survey sought to revalidate and summarize the expert opinions regarding suggested problem areas or areas for improvement provided in the first survey. Additionally, the second survey contained a section that was designed as a preference tool, offering different organizational methods that would best manage wholesale ammunition.

The second survey summarized that the SMCA storage of ammunition is an important aspect of the SMCA operation. Most respondents agreed that funding for inspections and maintenance is insufficient; that the SMCA had problems receiving and

processing the SWA retrograde; that proliferation of lot numbers resulting from SWA retrograde was a problem; that the services' forecasting methods, the SMCA's storage situation, and the SMCA's storage practices are generally less than adequate; and that the quantity of inventory and surveillance inspections is inadequate.

The second survey validated the results of the first survey regarding demilitarization. Most respondents agreed that the demilitarization backlog is not decreasing and out of control, and that funding for demilitarization over the next ten years will not meet all requirements. Overall, demilitarization was viewed as one of the most important areas within SMCA's responsibility.

The second survey provided conflicting information regarding the SMCA's tiering plan. Most respondents agreed that the tiering plan will increase the level of readiness within the depots and that the level of funding the SMCA will receive for the tiering plan is inadequate, findings that are consistent with data from the first survey. However, respondents were split on the second survey as to whether or not the tiering plan will resolve the shortfall of storage space within the SMCA.

Most respondents replied in the fourth section of the second survey that they would prefer either a DoD-level agency or a reorganized SMCA that would receive its funding directly from Congress to manage wholesale ammunition as opposed to how the SMCA currently operates. Though this area was not considered as important when looking at all the SMCA does, it did provide some interesting insight to how the experts would organize and manage wholesale ammunition if given the opportunity to change the SMCA.

Conclusions

The SMCA does well storing wholesale ammunition for the DoD. Performance could be improved by ensuring required funding for all inspections and maintenance be provided through funding channels other than those of the Army. Additionally, performance would improve if the services more accurately forecast their inbound and outbound shipments, and if the services reduce the number of instances of mixed lots of items being sent to the depots. The problems the SMCA had handling the SWA retrograde offer an example of how the services can directly affect the efficiency of SMCA operations.

Demilitarization is currently managed well by the SMCA. The increased level of emphasis placed in the demilitarization has helped significantly. However, funding for FY97 and beyond must be increased to meet all demilitarization requirements. If not, the vast backlog of items awaiting demilitarization will continue to take up valuable storage space that could be used for other higher priority items. This backlog, in turn, retards the SMCA's ability to complete all maintenance and inspections, hinders the SMCA's tiering plan by increasing the number of items that must be managed at each depot, and, therefore, decreases the level of customer satisfaction.

The tiering plan, conceptually, is a good idea. A reduced number of depots and personnel, coupled with an increase in storage requirements and items awaiting demilitarization, results in a necessity for the SMCA to be proactive and find a solution to the growing backlog of demilitarization. The tiering plan would seem to fulfill these requirements. However, no large-scale exercise was conducted to validate that the

massive movement of items required by the tiering plan is possible and efficient, and some question whether or not the depots will be able to meet all outload requirements.

Additionally, the tiering plan requires a large outlay of funds. If this large financial requirement is not fully funded, the tiering plan would be partially implemented, which could decrease service readiness.

Customer satisfaction for the SMCA is an area that requires additional attention. Though the SMCA does well within the constraints of the system in which it works and is improving, there still is much lacking. The SMCA is a dual-hatted organization; not only does it manage all DoD's wholesale ammunition, it also manages all of the Army's ammunition. It is difficult for an organization to effectively operate when it is its largest customer. In this case, the SMCA, managed by the Army, has the Army as its largest customer. Additionally, service involvement with SMCA operations appears to be limited.

A first step toward better management of DoD ammunition would be to increase the level of service involvement in day-to-day operations. It is believed that if each stockholder is given greater management responsibility, stockholder performance would improve. This increased involvement could be accomplished by establishing either a DoD-level ammunition organization or by reorganizing the SMCA such that there are more joint billets, and funding for the SMCA comes directly from either DoD or Congress. Though increased service involvement does not necessarily equate to increases in surveillance inspections or maintenance, it would push the services to better manage their forecasts, limit the number of mixed lots of items sent to depots, and ensure that each service has an input to all decisions pertaining to the management of wholesale ammunition.

Recommendations

Further analysis of the pros and cons of implementing, operating, and funding both a DoD-level agency and a reorganized SMCA to manage all wholesale ammunition should be accomplished. Ten of 26 respondents replied to the first survey that there is a need to develop a non-Army, joint service organization designed to manage all DoD wholesale ammunition. Twenty four of 25 respondents of the second survey preferred either the development of a non-Army, joint service organization or the reorganization of the SMCA to how the SMCA currently operates when choosing the optimal method to manage DoD wholesale ammunition.

An in-depth, realistic outload exercise, with service involvement, should be accomplished to validate the efficiency and effectiveness of the SMCA's tiering plan. Of 26 respondents to the first survey, not one was negative. Additionally, respondents replied to the first survey that, "a paperwork exercise is not enough," that "insufficient time was spent analyzing data prior to implementation," and that, "the military services need to be fully involved, not just kept aware," of the tiering plan's progress.

Further analysis of the options available to decrease the demilitarization backlog should be accomplished. Seventeen of 24 respondents to the first survey offered some negative aspect to SMCA demilitarization. Most of the negative comments made some reference to the lack of sufficient funding to deplete the demilitarization backlog. On the second survey, 19 of 28 respondents disagreed with the statement that the demilitarization backlog is under control, and 24 of 28 respondents disagreed with the statement that funding for demilitarization over the next ten years will meet all requirements.

Further analysis of the methods of increasing the number of joint billets, at all levels, within the SMCA should be accomplished. One respondent replied to the first survey that as an organization, "the SMCA does not have enough joint service representation in the right places to influence day-to-day operations." Eighteen of 28 respondents to the second survey believed the number of joint billets in the SMCA is inadequate.

Further analysis of the methods of increasing the accuracy of the services' forecasts should be accomplished. Some respondents to the first survey claimed the services' forecasts were inaccurate. Only seven of 28 respondents to the second survey believed the services' forecasting methods as a whole are better than average.

Lessons Learned

If any further analysis entails the collection of data using a two-survey Delphi technique, it is recommended to take precautions to ensure that the group of experts responding to the second survey is the exact same group that responded to the first survey. Complete anonymity would still have to be guaranteed.

Appendix A

Survey 1

Dear Survey Participant:

Name _____

Introduction: I am a graduate student at the Air Force Institute of Technology (AFIT). Headquarters, Air Force Material Command is sponsoring my thesis, which is an evaluation of how well the SMCA maintains the DoD's wholesale ammunition stockpile. The background research I have completed has displayed the SMCA as a dynamic, complex organization. GAO reports, Congressional Hearings, and SMCA-initiated studies have revealed a wide variety of problems within the SMCA. Areas of concern have included how ammunition is stored, maintained, and demilitarized. More recently, concerns have been raised regarding the tiering of the depots and level of customer support provided by the SMCA. Yet, the SMCA continues to operate and successfully meet its mission of integrating conventional ammunition logistics functions of the Military Departments to the maximum extent possible. I am approaching you, an expert in the field of ammunition, for more detailed information pertaining to the areas listed on the following page regarding the SMCA. I am requesting that you provide both the good aspects and areas needing improvement for each question. Additionally, please list any ideas of what each area can do to improve. Please restrict your answers to these specific areas; the bounds of my research will not permit me to expand the thesis any further. This information you provide will be the basis for a second survey that will be administered in late spring, 1995.

Mechanism: Surveys will be administered to experts in each of the services as well as the SMCA. The following survey is the first of a two-part process designed to gather opinions from experts in the field. The first survey will gather general, objective information. The second survey, based upon the answers acquired from the first survey and administered to the same sample who answered the first survey, will be more subjective. Respondents will be asked to answer how strongly they feel about certain subjects.

Retrieval Method: Please place your name at the top of this page. Place the completed survey in the provided return envelope. The survey will be collected by a third party and given a code. This sheet (with your name on it) will be removed from the survey before being passed to me. A second survey based upon the results of the first survey will be sent back out to you, the expert. The retrieval method for the second survey will be the same as the first. The purpose behind this retrieval method to ensure as best as possible that each surveyee remain anonymous to me. When the surveys are completed, the third party will destroy the cross reference list of names.

I thank you in advance for the information you will provide. Please feel free to be as straight forward as you desire. If there is a problem and you need two pages to explain it,

do so. If everything is acceptable as is, tell me, too. Any information, positive or negative, is statistically significant. Also, if you have a new idea of how to fix an identified problem, please forward the idea. Again, thank you for your time and assistance. It is greatly appreciated.

DAVID J. REGA, Capt, USAF
Student, Air Force Institute of Technology

1. How many total years of experience do you have with any DoD ammunition organization? _____
2. Which DoD organization do you currently work in? _____
 - A. Army (non-SMCA)
 - B. Navy
 - C. Air Force
 - D. Marine Corps
 - E. SMCA
 - F. Other (please state)

Based upon your experience, please provide your views of what you believe to be good and not-so good aspects for each of the following areas of interest. Additionally, please include what you would do if you could improve each area. Attach your answers to this sheet. Hand-written answers are acceptable.

3. SMCA storage of ammunition
4. SMCA demilitarization of ammunition
5. SMCA tiering program for depots
6. SMCA support of customers (individual services)

Appendix B

Survey 2

Name _____

Dear survey participant: I am a graduate student at the Air Force Institute of Technology (AFIT). Headquarters, Air Force Material Command is sponsoring my thesis, which is an evaluation of how well the SMCA maintains the DoD's wholesale ammunition stockpile. In late February, I sent out a four-question survey to ammunition experts in each service and the SMCA. A summary of the results of the survey is listed on the next two pages. Though the information gained was detailed and thorough, my thesis methodology involves a second phase. Therefore, I am requesting that you please fill out my second survey which begins on page three. The second survey is based upon the results of the first survey, with the second survey being more specific and subjective than the first. The information you provide will be the foundation of my research, so your prompt assistance is greatly appreciated.

Mechanism: This second survey is the second of a two-part survey that has been administered to experts in each of the services as well as the SMCA. This two-part process is designed to gather specific opinions from experts in the field. The first survey gathered general, objective information. This survey, based upon the answers acquired from the first survey and administered to the same sample who answered the first survey, is more subjective. Respondents are asked to answer how strongly they feel about specific issues identified in the first survey. These issues will include such subject areas as SMCA storage practices, the tiering program, demilitarization, and the amount of service involvement with SMCA operational decisions.

Retrieval Method: Please place your name at the top of this page. Place the completed survey in the provided return envelope. The survey will be collected by a third party and given a code. This sheet (with your name on it) will be removed from the survey before being passed to me. The purpose behind this retrieval method to ensure as best as possible that each surveyee remain anonymous to me. When the surveys are completed, the third party will destroy the cross reference list of names.

I thank you in advance for the information you will provide. Please feel free to be as straight forward as you desire. Again, thank you for your time and assistance. It is greatly appreciated.

DAVID J. REGA, Capt, USAF
Student, Air Force Institute of Technology

Summary of Responses from First Survey

The following is a summary of the responses I received from the first survey. The summary is divided into four sections, each pertaining to one of the four questions from the first survey.

- 1) SMCA storage of ammunition: The answers I received ranged from a one word answer ("excellent") to one that was over two pages, single spaced. The average was approximately one to two paragraphs in length. Content ranged from the SMCA being "diligent," "responsible," "positive," and "extremely effective, efficient, and economical" on the positive side to "performing poorly," "less-than-desirable storage practices," "lack of funding causes problems," and "not doing well with custodial responsibilities" on the negative side. Overall, most agree the SMCA does well storing the wholesale ammunition stockpile considering two shortfalls: 1) funding--SMCA is not funded at the necessary level to complete all inventories and surveillance inspections needed, and 2) the services contribute to the problem by giving inaccurate forecasts.

- 2) SMCA demilitarization of ammunition: The answers I received ranged from a three word answer ("A success story") to one page, single spaced. The average was approximately one to two paragraphs in length. Content ranged from "continues to be high priority," "success story," "best seen in years," and "problems have abated" on the positive side to "none of the elements are truly optimized," "future not rosy," "funding problems need to be looked at with fresh eyes," and "done too little to rid itself of worthless assets" on the negative side. Overall, most agree that demilitarization is going well because demil is a priority and is being 100% funded. Potential problem areas/recommendations are 1) funding for FY97 will drop to less than 50% of forecasted need and 2) backlog is still too large resulting from years of neglect--storage space under-utilized.

- 3) SMCA tiering program for depots: Answers ranged from a two word answer ("superior effort") to two pages, single spaced. The average was approximately one to two paragraphs in length. Content ranged from "cornerstone of U.S. Army Integrated Stockpile Program," "good concept," "brilliant deduction," and "should have been done years ago" on the positive side to "will not be able to meet outload requirements," "customers not involved with decision to do so," "if not fully funded, could lead to more problems like BRAC," and "readiness affected" on the negative side. Overall, the consensus is that tiering is a good concept. Most respondents agreed a proactive approach is needed to improve the current state of ammunition storage. Problem areas/recommendations include 1) need large amounts of money for stratification to be successful; if not fully funded, will complicate and increase current storage problems as a result of incomplete movements between depots and loss of visibility of assets, and 2) services have questions they believe are not resolved (such as why they were not involved in the decision-making process?, will tiering be accomplished by component or AUR?, and what happens if a service wishes to make a change to its top 20 items?).

4) SMCA support of customers: Answers ranged from a one word answer (“superior”) to almost two pages, single spaced. The average was approximately two to three paragraphs in length. Content ranged from “one of the stronger aspects of the SMCA,” “generally supportive,” “customer oriented,” and “good job within constraints of budget” on the positive side to “SMCA not resourced or aligned to perform mission,” “foundation of IOC could cause problems,” “bad forecasting by services has led to problems,” and “difficult to have a quality organization when the organization is a customer of itself” on the negative side. Overall, most agreed that the SMCA was generally customer oriented, but that a change was needed. There are problems of the services not receiving what they requested and the Army acting (especially on matters relating to program funding) without involving the services. Recommendations included 1) SMCA needs a separate funding line outside USA O&M funding or needs to be a separate DoD organization, and 2) need more service involvement to include allowance of more service inputs to matters affecting the SMCA (such as formation of tiering concept and IOC) and creation of more joint billets to make the SMCA truly purple (especially at the highest levels within the SMCA, where few are non-Army).

Survey Part II

1) Rate: Disagree/Agree: Please rate how strongly you disagree or agree with the following statements.

strongly disagree/disagree/no opinion/agree/strongly agree

1 2 3 4 5

- | | | | | | | |
|----|-----------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| A. | Funding for inspections and maintenance is sufficient. | 1 | 2 | 3 | 4 | 5 |
| B. | Retrograde from SWA was handled with ease. | 1 | 2 | 3 | 4 | 5 |
| C. | Proliferation of lot numbers resulting from SWA retrograde is <u>not</u> a problem. | 1 | 2 | 3 | 4 | 5 |
| D. | Funding of the SMCA through the Army is the best method to fund the SMCA. | 1 | 2 | 3 | 4 | 5 |
| E. | The demilitarization backlog is under control. | 1 | 2 | 3 | 4 | 5 |
| F. | The fact that the Army is the SMCA's largest customer has <u>no</u> effect on how well the SMCA operates. | 1 | 2 | 3 | 4 | 5 |
| G. | The formation of the IOC will have <u>no</u> impact on how the SMCA operates. | 1 | 2 | 3 | 4 | 5 |
| H. | Funding for demilitarization over the next 10 years will meet all requirements | 1 | 2 | 3 | 4 | 5 |
| I. | The SMCA's tiering plan will help resolve the shortfall of storage space | 1 | 2 | 3 | 4 | 5 |

2) Rate: Poor/Excellent: Please complete the following statements. For example, you would complete statement A like "The services' forecasting methods are ..." and then mark the appropriate response along the following scale: Poor Excellent.

- A. The services' forecasting methods as a whole are Poor Excellent
- B. The SMCA's tiering plan to increase the level of readiness within the depots is Poor Excellent
- C. The level of service involvement in SMCA decisions is Poor Excellent
- D. The SMCA's storage situation is Poor Excellent
- E. SMCA storage practices are Poor Excellent
- F. The number of joint billets in the SMCA is Inadequate Adequate
- G. The number of inventory and surveillance inspections is Inadequate Adequate
- H. The level of funding the SMCA will receive for the tiering program is Inadequate Adequate

3) Rank Distribution: Please allocate 100 points to as many of the following areas as you feel appropriate. This distribution is intended to display the importance of each to the overall SMCA operation (for example, I believe demilitarization is worth points; the tiering program is worth points etc., etc.; all must add up to 100 points total)

- A. surveillance/inventory inspections and maintenance
- B. demilitarization
- C. services' depot workload forecasts
- D. optimization of storage space within depots
- E. tiering program
- F. service involvement with SMCA operational decisions
- G. SMCA being an Army organization as opposed to being a stand-alone organization

Total = 100

4) Rate the following scenarios as to how you believe wholesale ammunition can best be managed.
 Please mark your letter choices in the numbered spaces that follow. (1 is for the optimal choice, 2 is for the second choice, 3 the third choice, & 4 the fourth choice, if used). As an example, your answer could be:

A	B	C	D
1	2	3	4

1	2	3	4
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A) Wholesale ammunition managed as it currently is by the SMCA, aligned under the Army, funded through Army channels.

B) Wholesale ammunition managed by the SMCA, aligned under the Army. However, the SMCA gets funded for all ammunition responsibilities directly from Congress and there is a larger involvement by the Navy, Marine Corps, and Air Force in the day-to-day operations of the SMCA (more joint billets).

C) Wholesale ammunition managed by a DoD-level agency (such as a Defense Munitions Agency) which has 1) a separate funding line from Congress; 2) all positions equally split between services with commander position rotating among services; 3) control all storage, procurement, and sustainment of wholesale stockpiles.

D) Something else? Please reply if you have another option that you believe is a more acceptable option than those listed above: _____

5) Additional inputs: any new areas not believed addressed in either of the two surveys.

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Vita

Captain David J. Rega was born on 30 December 1966 in Norwood, Massachusetts. He graduated from Chelmsford High School in 1985 and entered undergraduate studies at Worcester Polytechnic Institute. He graduated with a Bachelor of Science degree in Electrical Engineering in May 1989, and immediately received his commission. His first assignment was at Chanute AFB as a student of Aircraft Munitions Maintenance Officer's Course. Upon graduation in March 1990, he attended Nuclear Munitions Officer's Course at Lowry AFB. Upon graduation in April 1990, he was assigned to the 388th Tactical Fighter Wing at Hill AFB. Positions held within the wing included Munitions Branch OIC; Equipment Maintenance Squadron Maintenance Supervisor; Phase Branch OIC; Chief, Maintenance Management Division; and Assistant OIC, Maintenance Production, 4th Fighter Squadron. In January 1993, he was assigned to the Ammunition Control Point, Commodities Directorate, Ogden Air Logistics Center as a Program Manager for such programs as the CBU-87 and the CBU-89. In May 1994, he entered the School of Logistics and Acquisition Management, Air Force Institute of Technology, in pursuit of a Masters of Science in Logistics Management. His next assignment is at the Special Operations Forces SPO, Wright-Patterson AFB.

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13. ABSTRACT (Maximum 200 words) This research solicited expert opinions regarding how well the Single Manager for Conventional Ammunition (SMCA) manages the DoD wholesale ammunition stockpile. Members of the Army, Navy, Air Force, and Marine Corps, as well as members of the SMCA, were surveyed twice. The first survey contained four statements, each referring to a different area of responsibility for the SMCA. These four areas of responsibility were SMCA storage of ammunition, SMCA demilitarization of ammunition, SMCA tiering program for depots, and SMCA customer support. The respondents were asked to provide positive and negative aspects for each area, as well as recommendations for improvements. The second survey sought to revalidate and summarize the expert opinions provided in the first survey regarding problem areas or areas for improvement. By evaluating how the respondents responded to each statement or question on the second survey, conclusions were drawn as to what the experts believed were the positive and negative aspects of the SMCA, as well as areas the experts believed could be improved. The study concluded that SMCA does well storing ammunition and managing demilitarization, that the tiering plan, conceptually, is a good idea and that SMCA customer satisfaction is an area that requires additional attention.

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