NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

RE-ENGINEERING THE NAVAL POSTGRADUATE SCHOOL'S PURCHASE CARD ACCOUNTING PROCESS

by

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June 1997

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REPORT DOCUMENTATION PAGE

Form Approved OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE June 1997	3. REPORT TYPE AND DATES COVERED Master's Thesis

4. TITLE AND SUBTITLE: RE-ENGINEERING THE NAVAL POSTGRADUATE SCHOOL'S PURCHASE CARD ACCOUNTING PROCESS

5. FUNDING NUMBERS

6. AUTHOR(S) Fred I. Pyle

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Naval Postgraduate School
Monterey CA 93943-5000

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited.

12b. DISTRIBUTION CODE

13. ABSTRACT *(maximum 200 words)*

When DoD introduced the purchase card program in 1989, no standardized system was adopted to manage internal memorandum accounting. Today the services are populated with dozens of unique applications for managing purchase card accounting. DoD is currently standardizing each service's purchase card automated systems. The focus of this research was to evaluate the DoN card program at the activity level. Specifically, it identifies the cost savings in replacing the current internal automated purchase card management system, known as the standard automated contracting system, with a standardized memorandum accounting system for tracking credit card purchases at the Naval Postgraduate School (NPS). To identify these savings, interviews were conducted with NPS and Defense Finance and Accounting Service representatives, and the historical purchase card data for NPS was analyzed. By adopting the DoD proposed new practices and eliminating the current non-value added steps in the NPS process, the potential annual costs savings are $619,895 if specific job descriptions are eliminated and $361,727 if current job descriptions remain unchanged.

14. SUBJECT TERMS Purchase Card Re-engineering, Government VISA Card, Micro-Purchases, Small Purchase Procurement

15. NUMBER OF PAGES 60

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	UL

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. 239-18 298-102

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RE-ENGINEERING THE NAVAL POSTGRADUATE SCHOOL'S PURCHASE CARD ACCOUNTING PROCESS

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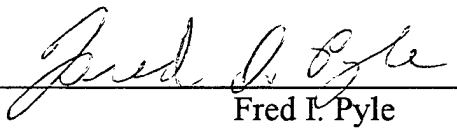
Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL
June 1997

Author: 
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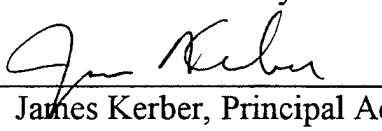
Approved by: 
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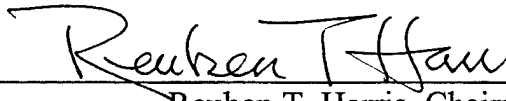
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ABSTRACT

When DoD introduced the purchase card program in 1989, no standardized system was adopted to manage internal memorandum accounting. Today the services are populated with dozens of unique applications for managing purchase card accounting. DoD is currently standardizing each service's purchase card automated systems. The focus of this research was to evaluate the DoN card program at the activity level. Specifically, it identifies the cost savings in replacing the current internal automated purchase card management system, known as the standard automated contracting system, with a standardized memorandum accounting system for tracking credit card purchases at the Naval Postgraduate School (NPS). To identify these savings, interviews were conducted with NPS and Defense Finance and Accounting Service representatives, and the historical purchase card data for NPS was analyzed. By adopting the DoD proposed new practices and eliminating the current non-value added steps in the NPS process, the potential annual costs savings are $619,895 if specific job descriptions are eliminated and $361,727 if current job descriptions remain unchanged.

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I. INTRODUCTION

This research will evaluate the DoN purchase card program at the activity level. Specifically, it will identify the cost savings in replacing the current internal automated purchase card management system, known as standard automated contracting system (SACONS), with a memorandum accounting system for tracking credit card purchases at the Naval Postgraduate School (NPS). This evaluation will be accomplished by reviewing the existing card process, and determining if any improvements can be made to the program.

NPS is located in Monterey, California. The school's own small procurement process is the focus for this research. NPS is an organization within the Department of Defense (DoD) and the Department of the Navy (DoN) that provides graduate education for both United States and foreign military officers and government employees. In the ever decreasing budget climate of today's armed forces, efficient and effective use of resources is essential to the school's future success.

The purchase card is the cornerstone of today's small procurement environment. The Government Bank Card program goes by many names: the Government VISA card, the International Merchant Purchase Authorization Card (IMPAC) or simply the purchase card, hereafter referred to as 'the card.' The card provides a less costly and more efficient way to buy goods and services, because government personnel can purchase items directly from vendors instead of going through procurement offices. [Ref. 1] The card can be used for small purchases, also referred to as 'micro purchases,' which are less than $2,500.

A. RESEARCH QUESTIONS

1. Primary Research Question

What potential cost savings exist in re-engineering the existing processes which use SACONS as the primary tracking mechanism for credit card purchases at NPS?

2. Subsidiary Research Questions

a. Does an automated tracking system for purchase card management already exist, and can the system be tailored to fit NPS' needs in a cost effective manner?

b. With SACONS, the user must manually generate numerous reports; can the new system automate those manual processes?

c. Can a new system electronically bridge to the DoN accounting systems?

B. DISCUSSION

After DoN adopted the purchase card program in 1989, NPS modified SACONS for use as an internal management tool to track card purchases. SACONS was adopted by the NPS Supply Department's purchasing branch in the pre-purchase card era, to eliminate the need to 'walk-through' requisitions. SACONS does not fully automate the internal management process, therefore creating additional costs in manual data entry, routing of paper copies and auditing a paper trail.

Naval Supply Systems Command (NAVSUP) is the card program manager. NAVSUP is participating in efforts to recommend a particular automated purchase card management system and develop a future standard system for Navy activities. This research will focus on identifying the potential cost savings in adopting a standardized system and re-engineering the current NPS process.

C. SCOPE OF THE THESIS

This research will focus on the potential cost savings in re-engineering the current purchase card process at NPS. The author will investigate the current process of making a card purchase, from the initial purchase to paying the bill. The goal is to determine the cost of the manual procedures. This portion of the research will be a case study on SACONS as the current means of tracking credit card purchases. Next, the author will determine the potential cost savings in introducing an updated memorandum accounting system to reduce costs and improve efficiency of the card's internal management control.

The research will analyze the purchase card program at the DoN activity level and will not review other Federal agencies.

D. ASSUMPTIONS

It is assumed that the reader is familiar with the Federal acquisition process and Navy micro-purchase procedures. Furthermore, the reader should understand the hierarchy of the Navy's financial management organization. To assist the reader, a list of acronyms used throughout this thesis is provided in Appendix A.

E. DEFINITIONS [Ref. 2]

Agency Program Coordinator (APC) - An individual designated by the ordering agency as the point of contact for the GSA and the bank and who has overall responsibility for the Program within his/her organization. The APC may determine who the approving officials and cardholders shall be.

Approving Official (AO) - An individual who oversees a number of cardholders. The AO is responsible for, at a minimum, reviewing his/her cardholder's monthly

statements and verifying that all transactions were for necessary government purchases and in accordance with Federal Acquisition Review (FAR). The AO is normally the cardholder's immediate supervisor.

Billing Cycle Purchase Limit - The spending limit imposed on a cardholder's cumulative purchases in a monthly billing cycle. For individuals limited to micro-purchase authority, the billing cycle purchase limit may be assigned in increments of $100, up to $100,000. This limit may be adjusted as agencies deem appropriate and shall be established for each cardholder account.

Cardholder - Any individual issued a card by an organization. The card bears the individual's name and can be used by an individual to pay for official purchases in compliance with established internal procedures.

Cardholder's Statement of Account (SOA) - Within five working days after the end of each monthly billing cycle, the bank will send each cardholder a SOA which lists all transactions made during the current billing cycle.

Chief of the Contracting Office - A warranted Contracting Officer who is responsible for managing all technical contracting aspects of the contracting office.

Designated Billing Office - The office designated by the ordering organization to receive the official invoice, and in some cases, make payments against the official invoice.

Dispute Office Contact - The person designated by the organization to assist the organization and the bank in tracking and resolving disputed purchases or transactions.

Head of the Contracting Activity (HCA) - Official who has overall responsibility for managing the contracting activity.

Monthly Billing Office Report - A consolidated report sent to each agency billing office at the end of the monthly billing cycle. The medium is determined at the time of implementation. The report summarizes charges by each AO for all of his/her cardholders; it may include information from the AO summarizing the total of each cardholder's statement. This report is the official invoice for payment purposes. All invoices are subject to the Prompt Payment Act.

Single Purchase Limit - Each cardholder shall be assigned a single purchase dollar limit by the ordering organization. The single purchase limit may be delegated by the HCA in $50 increments.

F. METHODOLOGY

Data will be collected primarily through comprehensive interviews of NPS personnel using, authorizing or processing card transactions. Furthermore, the author will investigate the historical financial data on SACONS and review literature on other DoN command's internal management control systems. The author will conduct an in-depth review of card guidelines, which flow from the Federal level, through the DoD and the DoN and finally to the activity level.

The next phase of the research will present the current model of the NPS process. Next, the author will conduct data analysis on the existing practices and discuss the potential cost savings in adopting a new automated system to fit the internal management control needs of NPS.

G. BENEFITS OF THE STUDY

This research should identify the non-value added steps in the current purchase card process at NPS. By eliminating these steps or automating current manual steps, the overall process will be more efficient and productivity will be increased. Furthermore, additional cost savings should be realized by improving the process.

H. ORGANIZATION OF THE THESIS

Chapter I discusses the purpose of the research paper and the scope of the research and methodology. Chapter II provides the background of the card, and the current purchase card process used at NPS. Chapter III describes the methods used to collect data. Chapter IV analyzes the data and presents a new process compared to the current one which was introduced in Chapter II. Finally, Chapter V provides recommendations and conclusions based on the analysis presented in Chapter IV.

II. BACKGROUND AND CURRENT PROCESS

In the relatively short life time of the purchase card, the procurement environment has undergone drastic changes. This chapter discusses the purchase card background, looks at the benefits of using the card, reviews the statistics of card use and reviews the current tracking process used at NPS.

A. BACKGROUND OF THE PURCHASE CARD

Today's acquisition environment began taking shape in March 1982, when the President issued an Executive order directing agencies to reduce administrative procurement costs. In 1986, several federal agencies began pilot programs using a government commercial purchase card to reduce procurement costs. In 1989, the first government-wide commercial purchase card contract was awarded by the General Services Administration (GSA) to the Rocky Mountain BankCard System (RMBCS). The Department of Defense (DoD), including the Department of the Navy (DoN), entered the purchase card program in 1989. In 1993, the Vice President's National Performance Review (NPR) further streamlined the purchase card process and reduced the red tape in the procurement process. Purchase card use was further promoted by the Federal Acquisition Streamlining Act of 1994 (FASA) and Executive Order 12931. In December 1994 and July 1995, interim FAR rules were issued citing purchase cards as the preferred method for making micro-purchases. With legislation and cost-saving incentives in place, DoD embraced the purchase card program and looked for methods to continuously improve the program.

Recent events at the Under Secretary of Defense (Comptroller) (USD(C)) level are evidence of the continuous improvement process and are relevant to this research. Dr. John J. Hamre, USD(C), released a memorandum on March 27, 1997, that proposed new practices for the advanced reservations of funds, summary level recording of financial data, use of automated purchase card management and reconciliation systems, delayed disputes and payment certification at the approving official level. [Ref. 3] This memorandum is applicable to all DoD activities and will be implemented by October 1, 1997. The research focus is on what potential cost savings the proposed new practices have for NPS.

B. BENEFITS OF USING THE CARD

The benefits of the purchase card are: reduced administrative costs associated with traditional paper based payment methods, reduced inventories, prompt payment of bills, and increased hours for contracting personnel to work on more complex buys. Under the old procurement system, an office submitted requests through the supply division. Supply would check to see if the item was on hand or in storage. If the item was not available, the supply division would request a local purchase from the contracting office. Receipt of the item could take as long as three months from the time of order.

The card simplifies the small purchase process by reducing the contracting requirements and therefore reducing the processing cost. With the card, the item must be delivered by the vendor in less than thirty days. Normally the item is delivered in less than one week.

Additional benefits of the card include: [Ref. 4]

- Savings of $53.77 per transaction over paper based procurement methods.
- Improved cash management and streamlined payment processes.
- Timely and extensive management reports which enable Federal agencies to monitor small purchases, determine trends in card use and better manage program budgets.

The incentives for using the card are simple. Delivery time is cut from months to days and the cost to DoD and more importantly the cost to the tax payer is reduced substantially.

C. PURCHASE CARD STATISTICS

The card is firmly in place within DoD. Use of the purchase card has grown significantly, since its introduction only eight years ago. Figure 1 illustrates recent trends in purchase amounts for each of the military departments.

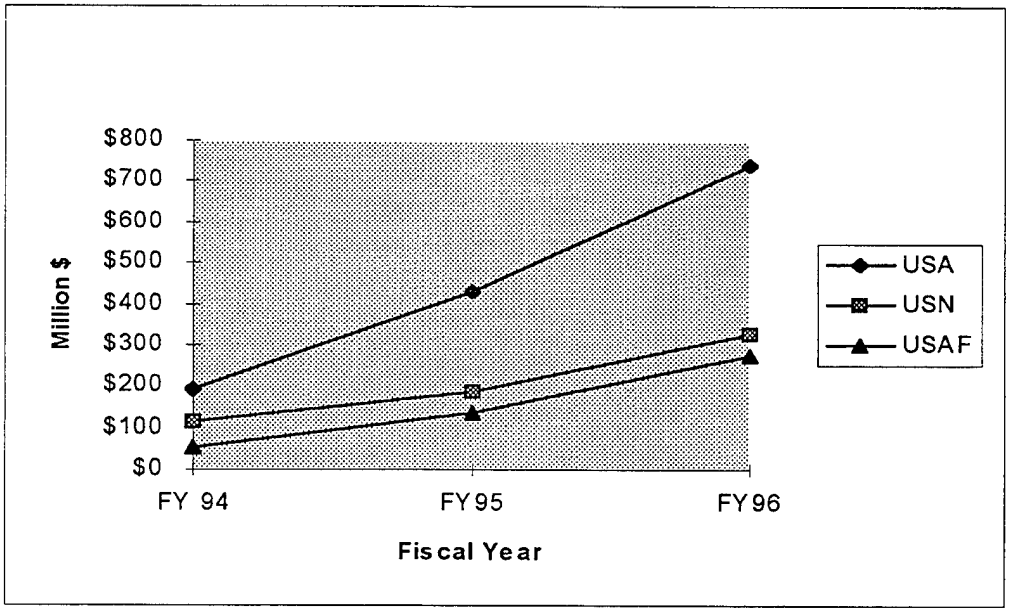

Figure 1. Fiscal Years 1994-1996 DoD Purchase Amounts

The catalyst behind the purchase card growth is the incentive to make micro purchases with the card vice traditional purchase orders or contracts. As of February 1997, the Navy bought 62% of all micro purchases with the card and by October 1997 the Navy plans to buy 80% of all micro purchases with the card. Since some existing contracts and blanket purchase agreements are in the micro-purchase range, the remaining 20% will be more difficult to attain. Furthermore, some activities simply have not established purchase card accounts.

D. NPS CURRENT PROCESS

The Strategic Plan for Computing at NPS contains a document drafted by a panel of information technology (IT) visionaries. The panel's goal is to guide the computing needs of NPS into the twenty first century. One of the eight elements identified by the panel is relevant to this research.

> The School (NPS) is badly served by its administrative systems. They are composed almost exclusively of "stovepipe" applications that provide little inter-operability and resources sharing. For these deficiencies we pay a heavy price in inconsistencies and inefficiencies.

Furthermore, the panel identified two specific administrative goals. [Ref. 5]

- Administrative applications will give cost-effective automated support for all routine administrative functions within academic departments and base support activities.
- Administrative applications will be integrated to eliminate duplicate data entry and provide a single authoritative source of financial and management information.

This research falls within the realm of the above goals. Achieving these goals provides a potential solution to excessive labor costs and the inability of managers and staff personnel to obtain accurate and timely information needed to perform their functions. The panel stated, "It is common for official Comptroller data to lag more than a month behind departmental data." Therefore, in light of the need to improve NPS' administrative and financial management systems, let us first look at the present purchase card process.

The presentation of the process focuses on the re-engineering efforts discussed in Dr. Hamre's recent memorandum. In addition, the author will diagram and discuss each basic procedure as it currently exists at NPS. Every activity's purchase card process must, at a minimum, complete the following six basic procedures to establish and manage a purchase card account: [Ref. 6]

- Establish and implement the program; including account and cardholder setup.
- Funding.
- Identification of sources (FAR, Part 8).
- Special requirements (hazardous material, ammunition, data collection, etc.).
- Purchase.
- Reconciliation.

This research focuses on five of the six basic procedures listed above. NPS established and implemented their card program in April of 1991. Therefore, this research will not discuss establishing or implementing the program. This re-engineering research will focus on the funding, identification of sources, special requirements, purchase and

reconciliation processes. Furthermore, payment of the monthly bill must be addressed due to the potential for cost savings and the mandate from USD(C). The existing purchase-card process for NPS is described and illustrated below.

1. Cardholder Setup and Funding

Funding for the purchase card comes from either Operation and Maintenance Navy (O&M, N) direct funding or from research funding in the form of reimbursable accounts. Reimbursable dollars come from research grants generated by the faculty. The sources of funds range from DoD organizations to civilian institutions and corporations. The method of funding cardholders varies greatly throughout DoD. At NPS, cardholders are funded on a quarterly basis. The type of funding used depends on the department. For instance, the Public Works department primarily receives direct funding in the form of O&M, N; the Systems Management department receives primarily reimbursable funding. Figure 2 shows the cardholder setup and funding process.

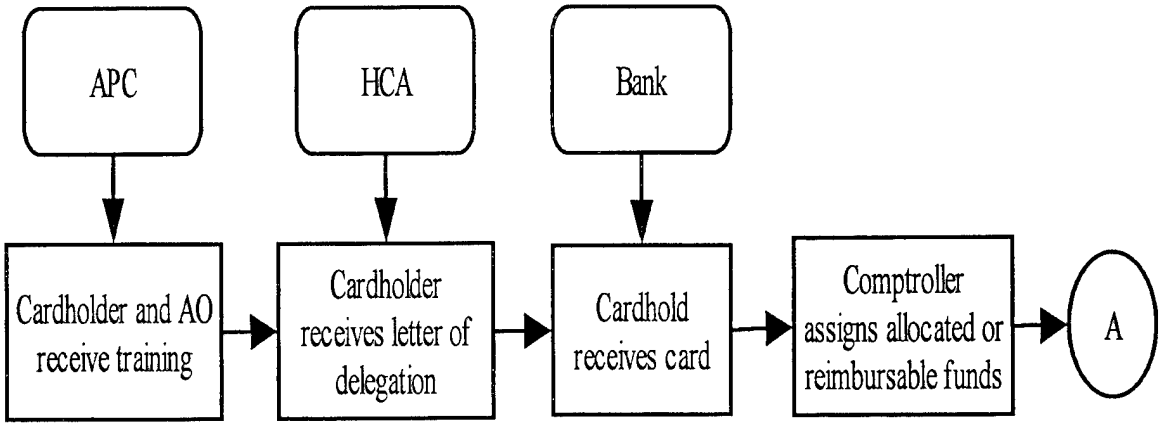

Figure 2. Cardholder Setup and Funding Diagram

Each cardholder's dollar threshold is determined by both the AO and comptroller's office. The single purchase limit is delegated in increments of $50 and may not exceed

$2,500. Total purchases in a twelve-month period must be less than $20,000, and cardholders must receive training on local procedures and attend a NAVSUP approved course on purchase card use. To exceed the dollar values listed above, the cardholder must attend more formal training required for procurement officials.

2. Source Identification

The next step in the process is source identification. FAR, Part 8, dictates that the cardholder must go through the following priority of sources: local inventories, Federal Prison Industries (FPI), National Industries for the Severely Handicapped (NISH), National Industries for the Blind (NIB), wholesale supply sources and commercial sources. With each purchase, the cardholder must receive his or her supervisor's approval and confirm funding from the comptroller office. Figure 3 illustrates the source identification process.

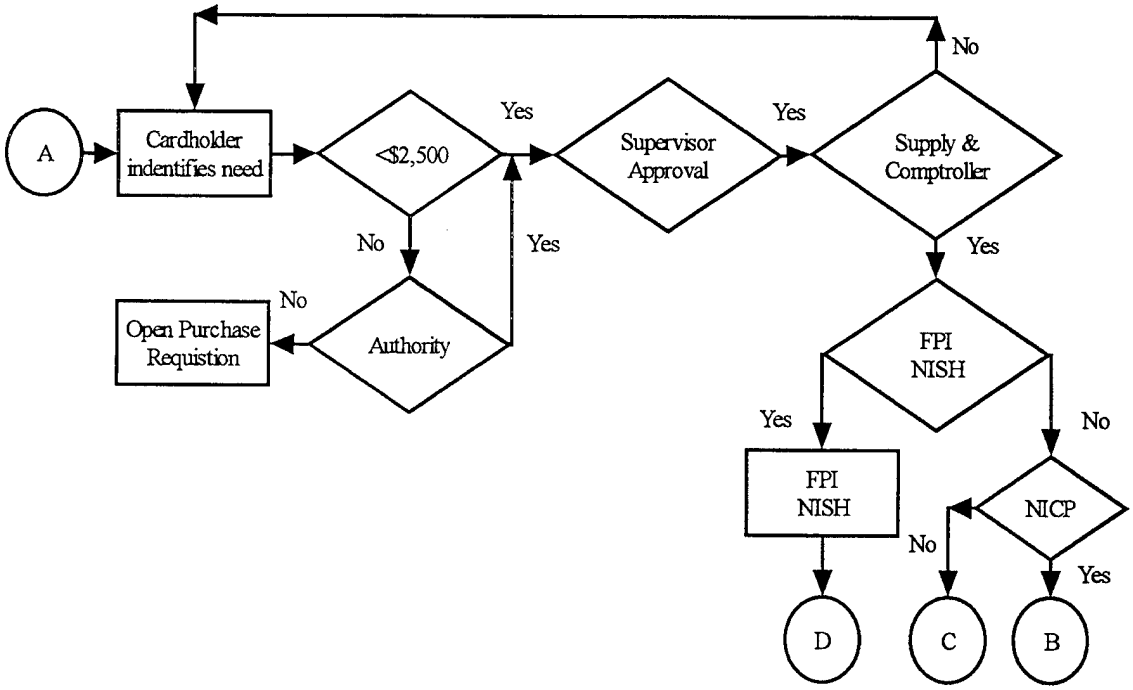

Figure 3. Source Identification Diagram

3. Special Requirements

Once the source is identified, the cardholder must ensure compliance with all special requirements. Special requirements include property accountability and handling and storage of Hazardous Material (HAZMAT). Despite SACONS's existing automated method for HAZMAT approval, the current process requires hand routing a paper request form through the safety office prior to making a HAZMAT purchase. On average, this practice adds two working days to the purchase process. Figure 4 illustrates the process.

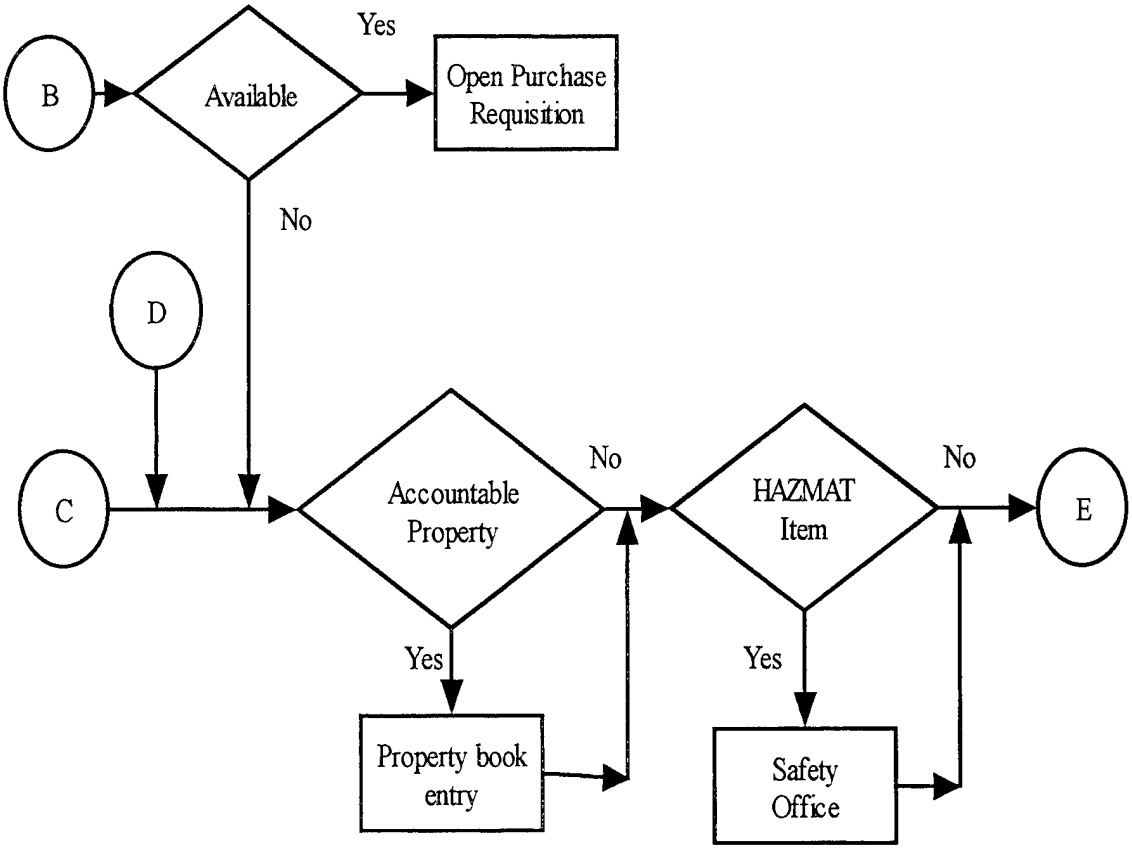

Figure 4. Special Requirements

4. Purchase from Source

The purchase process follows the compliance with special requirements step. Based on the cardholders knowledge of market prices, he or she determines if the quoted price is fair and reasonable prior to placing the order with a vendor. The transaction may be made over the counter or by telephone. If made over the counter, the cardholder must retain a copy of the charge slip, which becomes the accountable document. If made by telephone, the cardholder records the transaction, which should include the vendor's name, price quote, item identification and date of purchase, for later reconciliation with the monthly statement. Finally, the vendor should forward the receipt with the item or service delivered to the cardholder. Figure 5 illustrates the process flow.

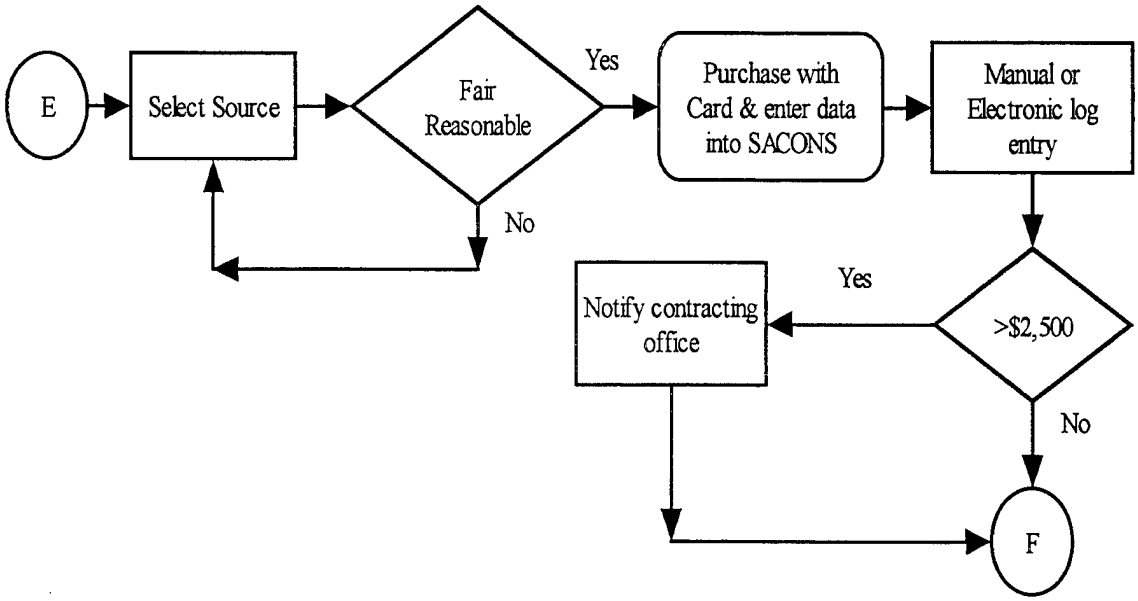

Figure 5. Purchase From Source

The cardholder must enter each purchase into SACONS within twenty four hours of the purchase. Most cardholders maintain a monthly log for account reconciliation purposes. Current practices range from using paper logs to self designed spread-sheet

logs. SACONS has no method of maintaining a purchase card log for the cardholder. NPS maintains records of transactions in electronic and paper format. The comptroller's office must maintain a seven year history of purchase card transactions. Therefore, every purchase card transaction made since 1991 is stored in the SACONS database. Searching the database during the reconciliation process is extremely time consuming.

Comprehending the significance of Line of Accounting (LOA) data is critical at this point in the process. The LOA is an alpha-numeric string of data used to display detailed information associated with a financial transaction. The LOA data fields are used to support the development of the Future Years Defense Program (FYDP) and Program Objective Memoranda by providing a means to monitor budget information and project execution amounts at the activity level. The construction of the data elements in the LOA also identifies costs to the appropriate cost centers, to track and bill reimbursable orders, and provides information for management decision making.

After the cardholders enter their purchase data into SACONS, the comptroller assigns an LOA for each card transaction. The LOA gives the comptroller office the necessary details to account for funds, such as matching invoices to obligations prior to disbursements.

5. Account Reconciliation

Account reconciliation is the most challenging and time consuming step in the six required procedures. RMBCS distributes three documents at the end of the monthly billing period. The cardholder receives an SOA, the AO receives a summary statement for

the activity of all their cardholders and the comptroller's office receives the official invoice which provides summary data for the entire school.

The cardholder must reconcile his purchases during the billing cycle with the SOA. The reconciliation process varies among cardholders. In the case of those using paper logs or spread sheets, these cardholders compare their logs with the SOA. The goal is to match each transaction on the SOA to its corresponding LOA on the monthly log. If the log matches the SOA, no discrepancies exists. However, cardholders seldom have zero discrepancies.

Problems such as the vendor charging sales tax or billing the incorrect amount occur routinely. The cardholder is responsible for resolving any discrepancies and annotating the resolution on the SOA. If the issue cannot be resolved with the vendor, a Cardholder Statement of Questioned Item (CSQI) form is generated. The CSQI puts the item in a dispute status. If the issue is not resolved within forty days, the school begins paying RMBCS a 6.75% interest penalty on the disputed amount. Some cardholders do not maintain a separate log outside the SACONS database. These cardholders take the noun name of the item or the vendor name from the SOA and then search the SACONS database for the record. Due to massive amounts of transactions stored in SACONS this method proves to be very time consuming. Finally, the cardholder signs the SOA and forwards it with the supporting documentation to the AO. Figure 6 illustrates account reconciliation for the cardholder.

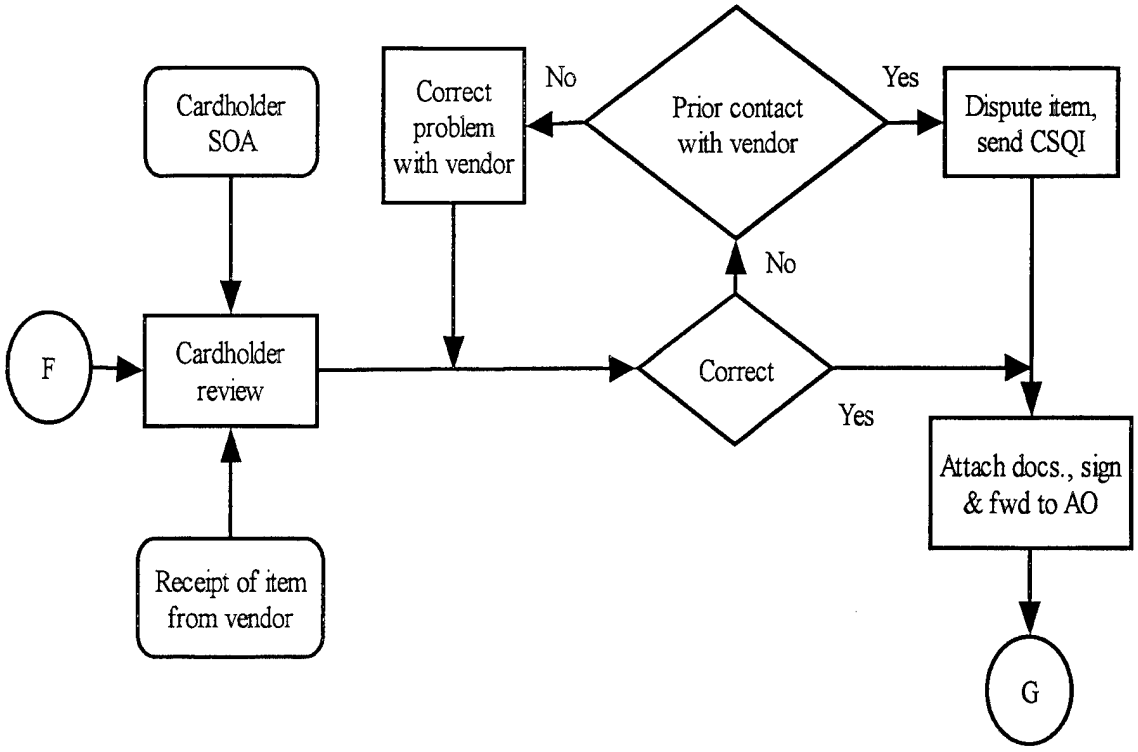

Figure 6. Account Reconciliation at the Cardholder Level Diagram

The AO reviews each of his cardholder's SOA and verifies that internal procedures were followed and purchases were made for valid government needs. The AO then signs each SOA and forwards them to the Comptroller's office. Figure 7 illustrates the AO and Comptroller review process. The Comptroller reconciles each SOA with the official invoice and attempts to balanced the SOA total with the official invoice total. This process is done manually, and during Calendar Year (CY) 1996 averaged 1,128 LOA per month. Each of these 750 LOA is then manually transferred from SACONS to the Standard Accounting and Reporting System - Fleet Level (STARS-FL) which is the accounting link to DFAS. Once reconciliation is complete, the package of SOAs and the official invoice is express mailed to DFAS Charleston, South Carolina.

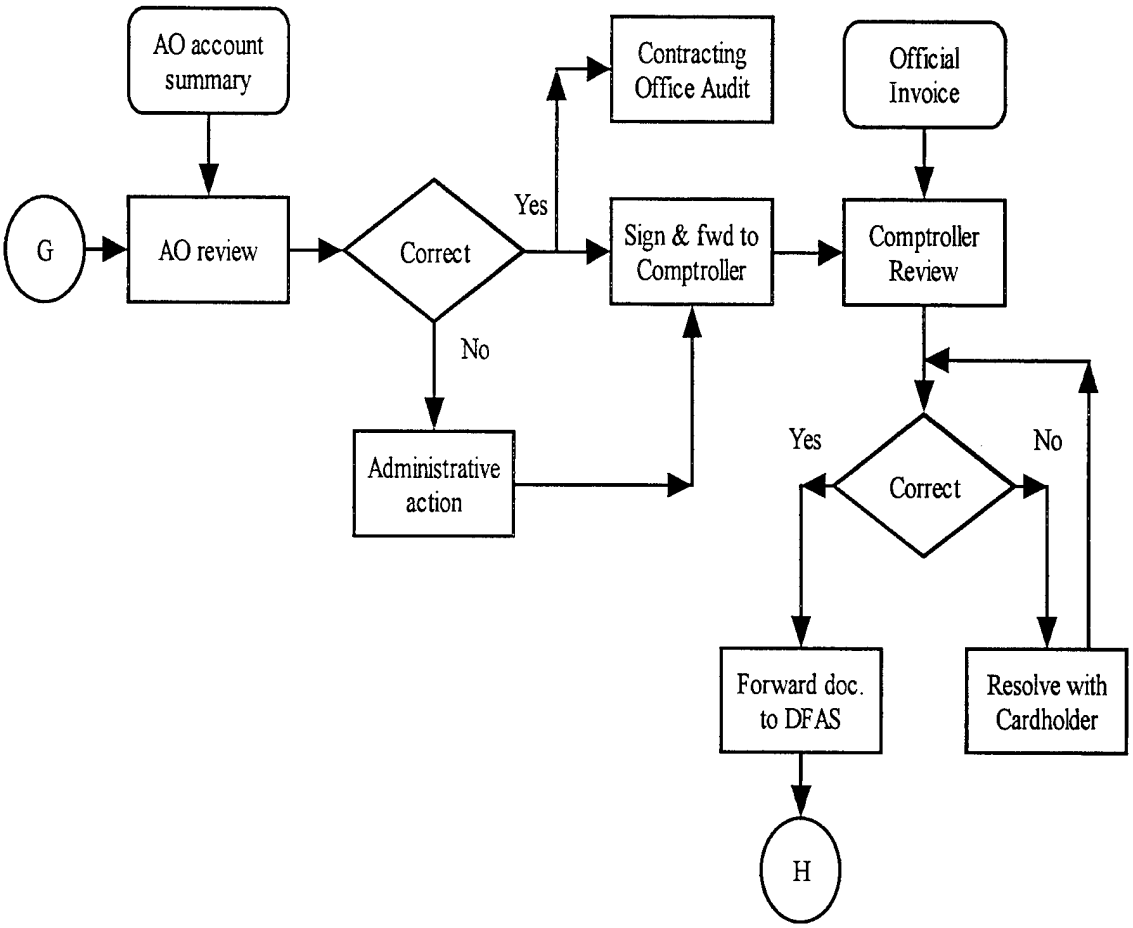

Figure 7. Account Reconciliation at the AO and Comptroller Level Diagram

The last step in the NPS process is an audit by the contracting office. New cardholders are audited monthly for the first four months they make purchases, and all cardholders are audited at least once a quarter. This is a local requirement and not mandated by any DoD instruction.

6. DFAS Reconciliation

DFAS is the fourth and final step in the reconciliation process. DFAS manually reconciles each LOA with the official invoice and then manually reenters each LOA into STARS-FL to ensure the invoice and STARS-FL data match. If disputes arise, DFAS will

contact the school's comptroller office and attempt to resolve the dispute. Once disputes are either resolved or documented, DFAS forwards the monthly payment to RMBCS. Figure 8 illustrates the DFAS process.

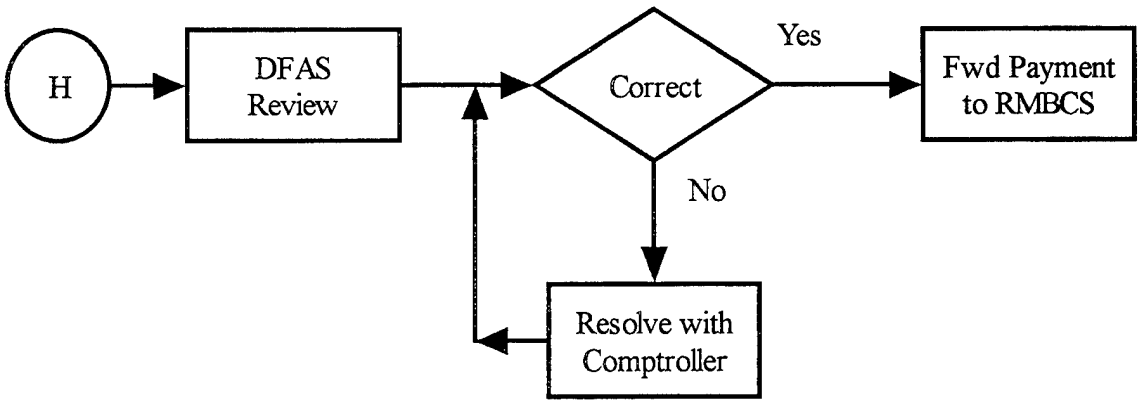

Figure 8. Account Reconciliation at the DFAS Level Diagram

E. SUMMARY

This chapter discussed the purchase card background, looked at the benefits of using the card, reviewed the statistics of card use within DoD and reviewed the current process used at NPS. The review of the NPS process focused on those areas where the USD(C) re-engineering initiatives apply. The following chapter will describe the methods used to collect the purchase card data.

III. RESEARCH METHODOLOGY

This chapter discusses the methods used for data collection, establishes a model for the purchase card process and outlines the cost benefit analysis approach. The methodology is divided into the data gathering process and the cost benefit analysis review.

A. DATA GATHERING

This research began with a thorough literature review. An Executive level review of the recent acquisition reform included FASA 1994, executive order 12931 and FAR 1995. Next, the author reviewed the DoD level instructions and attended the annual purchase card conference held in San Diego, California on April 8-9, 1997. The DoD and DoN comptroller's presented the latest purchase card initiatives, which provided an invaluable source of research information. Finally, DoN and NPS level instructions provided an understanding of the local practices and requirements for maintaining the purchase card account.

To fully comprehend the NPS process, the author tracked a purchase card transaction from cradle to grave, beginning with a cardholder making a purchase and ending with DFAS paying the monthly bill to RMBCS. Interviews were conducted with cardholders, AOs and billing officials from the departments with the largest purchase card use. The details of these interviews were discussed and illustrated in Chapter II. The next step in the NPS review was identifying an appropriate model. The search for a re-engineering process identified the Functional Process Improvement (FPI) cycle as the most appropriate model.

This research followed the common business re-engineering methodology: review and define the current AS-IS process (described in Chapter II), identify impediments to efficiency, and develop a re-engineered TO-BE process that satisfies customer needs and streamlines program management. The FPI cycle includes six steps: [Ref. 7]

- Define: State the objective, strategy and baseline.
- Analyze: Determine the functional processes.
- Evaluate: List the alternatives.
- Plan: Conduct the implementation.
- Approve: Validate approved changes.
- Execute: Begin operations with the new processes, data and systems.

This research addresses the first three steps, and is therefore a modified version of the FPI cycle. The primary research question in Chapter I defined this objective. Chapter II described the AS-IS process, and Chapter IV analyzes the data and presents the TO-BE process. Finally, Chapter V evaluates alternatives in the form of conclusions and recommendations.

The utility of the FPI cycle includes a useful model, a managerial focus and continual process improvement. Limitations of the FPI cycle include the high cost of conducting the entire FPI cycle ($100K-300K), the requirement for skilled analysts and the need for extensive detail. Analysis of the entire FPI cycle is beyond the scope of this research.

B. COST BENEFIT ANALYSIS REVIEW

The purpose of this section is to describe the approach used to identify potential cost savings and non-value added steps in the AS-IS model. This section is divided into a review of the proposed new practices outlined by USD(C) and the current non-value added practices in the process.

On March 27, 1997, USD(C) released the Purchase Card Re-engineering Implementation Memorandum #3: Streamlined Financial Management Procedures. In this statement, he identified five new practices that must be implemented by all DoN activities by October 1, 1997.

- Advanced Reservation of Funds.
- Summary Level Recording of Financial Data.
- Use of Automated Purchase Card Management and Reconciliation Systems.
- Delayed Disputes.
- Payment Certification at the Approving Official Level.

These practices encompass the bulk of this research and are addressed individually in Chapter IV. In addition to these new practices, the author identified non-value added practices in the AS-IS model that may not be corrected by the USD(C) directive.

This cost benefit analysis does not address the implementation cost of the TO-BE model. The focus of the analysis is on the potential cost savings in re-engineering the AS-IS model.

C. SUMMARY

The methodology for this research was conducted in two phases. First, data were gathered through literature review, interviews and process review of the NPS practices. Second, the cost benefit analysis centered on the recent USD(C) directive and identifying non-value added practices in the current process.

IV. DATA ANALYSIS

This chapter analyzes data from the AS-IS model and identifies potential cost savings through re-engineering the current process. The analysis is divided into the USD(C) proposed new practices review, the non-value added practices and the proposed TO-BE model. Table 1 summarizes the potential re-engineering cost savings described in this chapter. Scenario 1 represents the savings realized by eliminating specific job descriptions, and Scenario 2 represents the savings realized while retaining current job descriptions.

Item #	Re-engineering subject	Scenario 1	Scenario 2
A1	Advanced Reservation of Funds	$193,626	$0
A2	Summary Level Recording	$308,400	$308,400
A3	Adopt PADPS	$34,940	$34,940
A4	Delayed Disputes	$16,637	$16,637
A5	Payment Certification by AO	$1,750	$1,750
B1	Additional Audits	$64,542	$0
	TOTALS:	$619,895	$361,727

Table 1. Potential Re-engineering Savings on an Annual Basis

A. PROPOSED NEW PRACTICES

On March 27, 1997, USD(C) released the Purchase Card Re-engineering Implementation Memorandum #3: Streamlined Financial Management Procedures. The memorandum proposes five new practices: the advanced reservation of funds, summary level recording of financial data, use of automated purchase card management and reconciliation systems, delayed disputes and payment certification at the AO level. These practices must be implemented by October 1, 1997. This analysis will address each of the five new practices and identify their potential savings.

1. Advanced Reservation of Funds

NPS currently funds cardholders by the quarter. An accounting representative from each department verifies funds are available and assigns the accounting data to each cardholder purchase. In reviewing the departments with the largest percent of purchase card activity, the author found the accounting representatives spent 25% of their time on purchase card transactions. Their remaining time was spent on other contracts, open purchase requisitions, blanket purchase agreements and travel funding.

Under the new practices, there is no requirement for an accounting review of each purchase. Each cardholder has a maximum amount of funds available for the month. When they reach their dollar limit, the cardholder can no longer make purchases with their card. In order for NPS leadership to determine the total level of funds available, each purchase will still be subject to the comptroller's review. The time saved by the department accounting representatives could be reallocated to other areas. At this point in the analysis, a labor rate must be determined to calculate potential savings.

Several calculations for cost savings use a labor rate for the employee performing the specific purchase card task. The author found in reviewing the general schedule (GS) pay scales of cardholders, AOs, comptroller officials, and auditing officials, the pay scales ranged from GS-5 through GS-8. For ease of calculation, this analysis will use the average labor rate for NPS purchase card employees of $32,271 or $17.54 per hour (based on a 23% burden rate and 230 annual work days at 8 hours per day).

Under scenario 1, given the 25% time savings of 24 department accounting representatives, the re-engineered model would require approximately 18 accounting

representatives sharing the responsibility of the 24 department representatives. The savings realized in 6 fewer job descriptions is $193,626. Under scenario 2 there would be no savings, since the current job descriptions would not change.

2. Summary Level Recording of Financial Data

NPS currently assigns a separate LOA to each purchase card transaction. For calendar year (CY) 1996, the average number of transactions per month was 1,128 (see Appendix B). The LOA data are entered into SACONS by the comptroller's office. No electronic link exists between SACONS and STARS-FL, the NPS to DFAS accounting link; therefore, the comptroller's office manually transfers 1,128 LOA from SACONS to STARS-FL every month. Furthermore, DFAS must manually post an accounting transaction for each LOA. A DFAS billing clerk processes an average of 1,000 LOA per day. [Ref. 8] Also, DFAS bills NPS by the number of invoices processed, and the cost per invoice in 1996 was $25.00. One invoice contains approximately 750 LOA; therefore, during CY 1996 NPS paid a monthly processing fee of $50.00, which is the cost of two invoices.

DFAS currently operates under the Navy Working Capital Funds (NWCF), and does not recover their purchase card processing costs. To comply with USD(C) direction, on October 1, 1997, DFAS will charge their customers $25.00 per LOA. For NPS, the new monthly processing fee will average $28,200 per month ($25.00/LOA X 1,128 LOA). This is the USD(C) method of providing an incentive for DoD to improve their financial business practices.

One proposed solution for avoiding this cost increase is assigning each card a single LOA. Of the 130 cardholders at NPS, an average of 100 cardholders make purchases in any one month. [Ref. 9] Under the new practice, the monthly DFAS bill would average $2,500 (100 cards used X $25/LOA) vice $28,200, which yields a monthly savings of $25,700 and an annual savings of $308,400.

3. Use of Automated Purchase Card Management and Reconciliation System

When the purchase card was introduced to DoD in 1989, no standardized system was adopted to manage activity level accounting of card transactions. Now eight years later, DoD has dozens of unique "home grown" applications for managing the monthly task of tracking, reconciling and aggregating accounting data for purchase card transactions. The USD(C) and DoN saw the need to select a standardize accounting system to ensure uniformity within the service departments. In April of 1997, DoN selected the Purchase Card Automated Data Processing System (PADPS).

NPS uses SACONS as their internal memorandum accounting system. In the analysis of the AS-IS model, the author identified three limitations of SACONS.

- No SACONS to STARS-FL interface.
- Labor intensive query process for reconciliation.
- No method for the cardholder to maintain a monthly log.

Under current practices, the comptroller's office must manually transfer an average of 1,128 LOA per month from SACONS to STARS-FL. This practice is inefficient and

prone to mistakes. The estimated monthly cost of transferring the LOA is $280.64 (16 man hours X $17.54/hour) or an annual cost of $3,368. Furthermore, the current practice of express mailing the monthly documentation to DFAS will stop. The summarized monthly data will be electronically transferred to DFAS via STARS-FL.

At the end of each month, each cardholder must reconcile their monthly purchases with their bank invoice. The current practice requires the cardholder to search the entire SACONS database to identify a single purchase. SACONS provides no method of generating a monthly list of card transactions. The cardholder must use the requisition number from his personal log or search the entire data base via the vendor noun name. On average, cardholders spend three hours reconciling their monthly statements.

The PADPS reconciliation process will be substantially easier for the cardholder. The cardholder may generate a monthly report of his purchase activity for the billing period. Furthermore, his monthly report from PADPS should look identical to the bank invoice. The ease of recovering monthly purchase data led the author to estimate a 50% time savings in reconciling statements. Therefore, given that an average of 100 cardholders make purchases each month, the annual savings would be $31,572 (1.5 hours saved X 100 cardholders X $17.54/hour X 12 months). The total savings gained from PADPS implementation is $34,940 ($31,572 from reconciliation + $3,368 from LOA transfer).

The PADPS software implementation cost is funded by the Naval Material System Support Office (NAVMASSO), which developed and field tested the software. The training cost for PADPS is funded by DFAS.

4. Delayed Disputes

The current reconciliation process begins with the cardholder and ends with a final review by DFAS. This lengthy review process results in delays, and the delays result in DFAS making late payments to RMBCS. NPS currently pays a 6.75% interest penalty for disputes not resolved in forty days.

The USD(C) Integrated Product Team (IPT) found that 99% of all disputes were a matter of timing problems between the cardholder, the vendor and the bank. In virtually every case the bank invoice was correct. Therefore, USD(C) proposes delaying disputes until the next billing cycle ends, which would allow 99% of the timing issues to clear. Activities will pay the full invoice amount and resolve the remaining disputes sixty days after the initial purchase.

For CY 96, the NPS average disputed amount was $20,540 per month, from Appendix B; this resulted in an average interest penalty of $1,386.45 per month or $16,637.40 per year. Under the new practice, the $16,637 interest penalty would be saved through prompt payment of the monthly bill.

5. Payment Certification at the Approving Official Level

Payment certification at the AO level will cut the lengthy end-of-month review process in half, but this change presents a major paradigm shift. The current four step review process will be modified by training the AO and appointing him as a certifying officer. With the new authority, the AO will receive, approve and officially certify payment of each purchase card billing statement. This function is currently performed by the comptroller's office. The time requirement for the new review process would not

change for the AO, but his accountability would change. The AO would assume the comptroller's current responsibility for ensuring the statement is correct for payment.

As shown in Appendix B, the interest penalties for late payments, $1,750 for NPS, are not a substantial amount of money for the activity level; however, the aggregate interest penalty for all of DoD ($580,000 for FY 96) is substantial. The decentralization of certifying authority to the AO level stream lines the payment process and eliminates the delay in payment.

B. NON-VALUE ADDED PRACTICES

In developing the TO-BE model, the author found two processes that were not specifically addressed by the USD(C) memorandum. The current practices of conducting additional audits and requiring hard-copy approval for HAZMAT items are redundant and inefficient. Both issues are addressed to determine the potential cost savings in modifying the current process.

1. Additional Auditing

As discussed in Chapter II, the last step in the current NPS process is an audit by the contacting office. Two employees audit new cardholders monthly for the first four months they make purchases and audit all cardholders at least once per quarter. DoD audit requirements are broken down into internal and external responsibilities. Within NPS, each cardholder has an AO who is responsible for, at a minimum, reviewing the cardholder's monthly statements and verifying that all transactions were necessary. Additionally, the card program may be assessed annually as part of an Internal Management Control (IMC) program as discussed in DoD Directive 5010.38. Finally,

external requirements include procurement management reviews (PMRs), which are conducted by a contracting group outside NPS - usually every 3 years.

Given the existing DoD and DoN audit requirements, the NPS practice of conducting additional audits is not necessary. The annual cost of conducting the additional audits is $64,542 (2 employees X $32,271/year).

2. HAZMAT Approval

SACONS and PADPS have an electronic means for receiving purchase approval of HAZMAT items. However, the current practice requires the cardholder to manually route a paper copy to the HAZMAT coordinator. This practice adds an average of two weeks to the purchase process. The savings in this process review is one of time not money. For example, the Public Works (PW) department is the primary user of HAZMAT. All departments on NPS are customers of the PW department. Therefore, in the case of HAZMAT orders, the customer must wait an extra two weeks to receive their service or purchase.

C. TO-BE MODEL

The TO-BE model modifies four of the seven steps presented in Chapter II. Only the modifications made to the AS-IS model will be discussed; all other steps remain unchanged. Under the 'purchase from source' process, shown in Figure 9, the cardholder's enter data into PADPS within twenty-four hours of their purchase. The cardholder no longer needs to maintain a monthly log, since the PADPS query process allows them to generate monthly reports on their individual card activity.

The account reconciliation process will undergo the most change. In Figure 10, the cardholder dispute process is reduced to resolving limited disputes after two billing cycles have elapse. In Figure 11, the contracting office audit is eliminated, the AO certifies the statement for payment and the comptroller electronically transfers the accounting data from PADPS to STARS-FL and forwards billing data to DFAS. Finally, in Figure 12, DFAS no longer duplicates the efforts of the AO or comptroller. They simply verify the accounting data in STARS-FL and then forward payment to RMBCS.

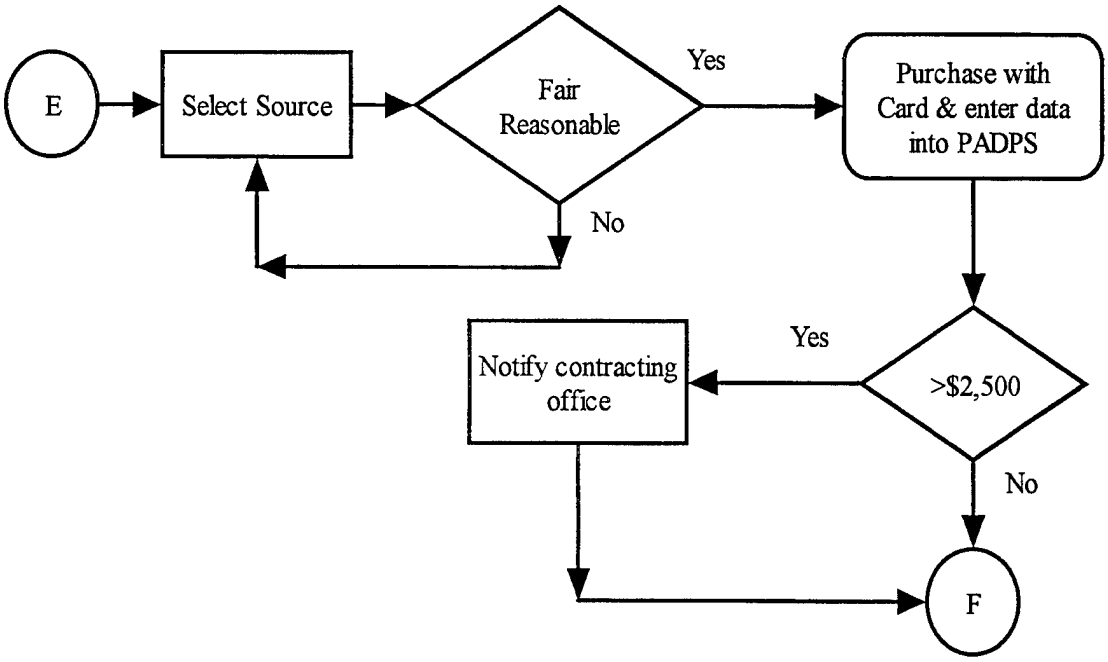

Figure 9. Purchase From Source Diagram

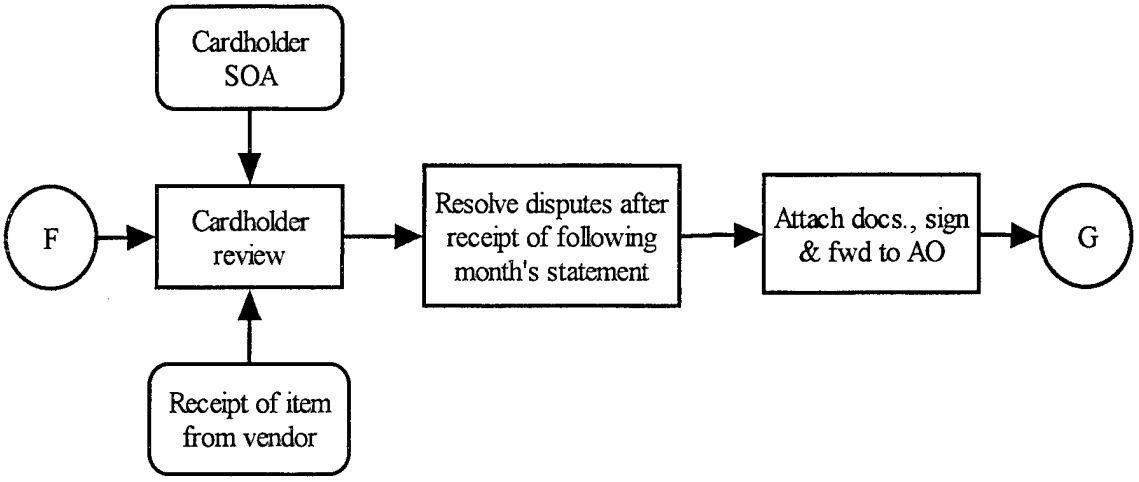

Figure 10. Account Reconciliation at the Cardholder Level Diagram

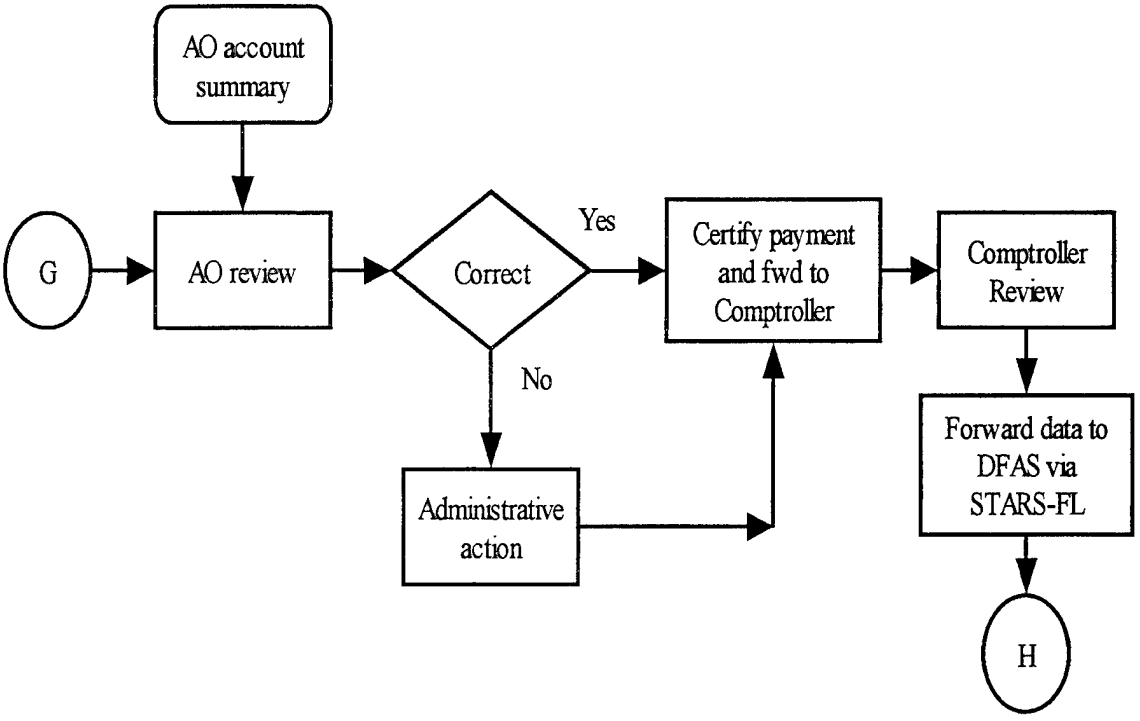

Figure 11. Account Reconciliation at the AO and Comptroller Level Diagram

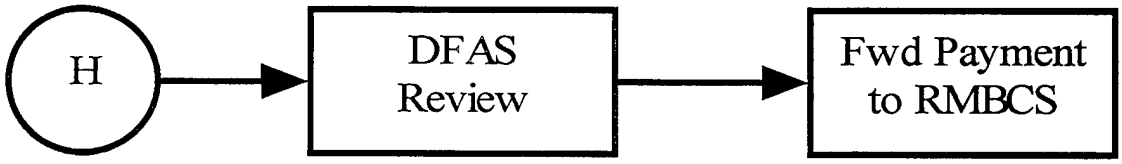

Figure 12. Account Reconciliation at the DFAS Level Diagram

D. SUMMARY

This chapter presented the five new practices directed by USD(C), addressed the non-value added steps in the AS-IS model and presented the re-engineered TO-BE model. The future compliance and adoption of these three areas has the potential to generate an annual savings of $619,895 under scenario 1 and $361,727 under scenario 2.

V. CONCLUSIONS AND RECOMMENDATIONS

This research analyzed the purchase card process at NPS and generate a re-engineered model which is more cost effective than the current model. This chapter presents the conclusions of the research, provides recommendations, answers the research questions, and recommends areas for further research.

A. CONCLUSIONS

This section will discuss conclusions for each section of the data analysis presented in Chapter IV.

Conclusion 1. The proposed new practice of advanced reservation of funds has a potential annual cost savings of $193,626. This savings can only be realized by reducing the number of department accounting representatives by six personnel. Cardholders will no longer require detailed accounting data for each transaction; therefore, the department accounting workload will decrease by 25%.

Conclusion 2. Summary level recording of financial data provides the largest cost savings incentive in this research. Due to the USD(C) mandate, DoN activities will begin paying DFAS a processing fee of $25 per LOA on October 1, 1997. By assigning each purchase card a single LOA, the annual cost savings will be $308,400.

Conclusion 3. By using the automated purchase card management reconciliation system, PADPS, the potential annual savings is $34,940. PADPS offers several benefits which overcome existing SACONS limitations. PADPS permits electronic transfer of LOA data to STARS-FL, provides the cardholder with a simplified query process for reconciliation, and provides an automated log for each cardholder.

Conclusion 4. Delayed disputes resolve the statement timing problem between the cardholder, vendor, and bank. The potential annual savings in adopting the delayed disputes process is $16,637.

Conclusion 5. Payment certification at the approving official level will accelerate the monthly bill paying process. Certification at the AO level will eliminate two approval steps from the current four-step process. By streamlining the payment certification process, NPS will save $1,750 per year in interest penalties.

Conclusion 6. The current practice of conducting additional audits is not required by DoD or DoN. The annual cost of these audits is $64,542. To achieve this annual savings the two job descriptions that perform these audits should be eliminated.

Conclusion 7. The current practice of using a manual process to approve HAZMAT purchases is inefficient and time consuming. SACONS and PADPS have an electronic format to transmit and receive HAZMAT approval forms, which will facilitate a one day approval process vice the current two week approval process.

B. RECOMMENDATIONS

This section discusses the recommendations for proposed action. Each of the seven conclusions is addressed in these recommendations.

Recommendation 1. This recommendation encompasses conclusions 1 through 5. NPS should implement the five proposed new practices contained in the USD(C) memorandum as soon as possible. The potential annual savings in adopting these new practices are $555,353 under scenario 1, and $361,727 under scenario 2.

Recommendation 2. After the implementation of delayed disputes, interest penalties for unresolved disputes will still exist. One method of encouraging departments to quickly resolve disputed issues is to subtract the amount of the interest penalty from the responsible department's allowance. This recommendation should motivate departments to quickly resolve disputes.

Recommendation 3. From conclusion 6, the current practice of conducting additional audits, which are not required by DoD or DoN, should be eliminated. In order to realize the annual savings of $64,542, the two positions that currently perform these audits should be eliminated or at least directed to undertake activities which will yield value to the organization.

Recommendation 4. The current practice of using a manual approval process, vice the existing electronic process, to approve HAZMAT purchases is a burden to the cardholder. The two week manual process suppresses the incentive for cardholders to make HAZMAT purchases. The electronic approval process should be implemented immediately, since the existing system, SACONS, has this capability.

C. ANSWERS TO RESEARCH QUESTIONS

Primary Research Question: What potential cost savings exist in re-engineering the existing processes which use SACONS as the primary tracking mechanism for credit card purchases at NPS? If NPS adopts the five new practices proposed by USD(C) and eliminates the current non-value added practices, the potential annual cost savings in re-engineering the existing processes are $619,895. If current job descriptions remain unchanged the cost savings are $361,727.

Subsidiary Research Question 2a. Does an automated tracking system for purchase card management already exist, and can the system be tailored to fit NPS' needs in a cost effective manner? In April, 1997, DoN selected PADPS as their purchase card management system. PADPS is currently in use at twenty DoD installations throughout the US, and is being standardized by NAVMASSO for all Navy activities. NAVMASSO is funding the software implementation cost and DFAS is funding the training requirements for PADPS users.

Subsidiary Research Question 2b. With SACONS, the user must manually generate numerous reports; can the new system automate those manual processes? PADPS does automate the cardholders monthly log, which eases the reconciliation process. Furthermore, PADPS provides electronic approval for HAZMAT purchases.

Subsidiary Research Question 2c. Can the new system electronically bridge to the DoN accounting system? PADPS does electronically interface with STARS-FL. This interface eliminates the current practice of manually transferring billing data each month from SACONS to STARS-FL.

D. AREAS FOR FURTHER RESEARCH

On concluding this research, the author discovered several areas for further research. The following topics are recommended areas for future research for the purchase card program.

1. Will the projected cost savings of this research be realized once the new practices are in place? Research on the NPS purchase card activity from October 1997

through October 1998 would allow a comparison between the actual cost savings and the predicted cost savings found in this research.

2. What costs would be incurred in implementing the re-engineered process? Even though NAVMASSO and DFAS appear to be funding the entire implementation cost of PADPS, their funding costs will be passed onto their customers. DFAS is a NWCF organization and must recover its costs by increasing the processing fee for purchase card bank payments, and this fee increase will be passed onto activities such as NPS. Furthermore, there will be internal costs to NPS that will not be funded by NAVMASSO or DFAS. For instance, NPS must absorb the cost involved in realigning people, reducing the force, and mastering the TO-BE process.

APPENDIX A. ACRONYMS

APC - Agency Program Coordinator

AO - Approving Official

AS-IS - The Existing Model or Process

COTS - Commercial off-the-shelf

CSQI - Cardholder Statement of Questioned Item

CY - Calendar Year

DFAS -Defense Finance and Accounting Service

DoD - Department of Defense

DoN - Department of the Navy

FAR - Federal Acquisition Regulation

FASA - Federal Acquisition Streamlining Act

FPI - Federal Prison Industries

FPI - Functional Process Improvement

FY - Fiscal Year

FYDP - Futures Years Defense Plans

GAO - General Accounting Office

GSA - General Services Administration

HAZMAT - Hazardous Material

HCA - Head of the Contracting Activity

IMC - Internal Management Control

I.M.P.A.C. - International Merchant Purchase Authorization Card

IPT - Integrated Product Team

IT - Information Technology

LOA - Line of Accounting

NAVSUP - Naval Supply Systems Command

NIB - National Industries for the Blind

NISH - National Industries for the Severely Handicapped

NPR - National Performance Review

NPS - Naval Postgraduate School

NWCF - Navy Working Capital Fund

O&M, N - Operation and Maintenance, Navy

PADPS - Purchase Card Automated Data Processing System

PMR - Procurement Management Reviews

RMBCS - Rocky Mountain BankCard System

SACONS - Standard Automated Contracting System

SOA - Statement of Accounts

STARS-FL - Standard Accounting and Reporting System - Fleet Level

TO-BE - The Re-engineered Model or Process

USD(C) - Under Secretary of Defense (Comptroller)

APPENDIX B. NPS CALENDAR YEAR 1996 PURCHASE CARD DATA

MONTH	BILLING START	BILL PAID DATE	# OF BUYS	$ AMOUNT OF BILL	$ AMOUNT PAID	INTEREST PENALTY	$ AMOUNT DISPUTED
JAN.	1 21 96	2 23 96	692	$382,470	$382,470	$0	$6,254
FEB.	2 21 96	3 26 96	1,121	$591,699	$594,944	$0	$11,042
MAR.	3 21 96	4 26 96	1,123	$610,131	$621,714	$0	$13,728
APR.	4 19 96	6 7 96	1,062	$500,289	$521,239	$0	$39,104
MAY	5 21 96	7 5 96	1,066	$541,952	$543,689	$737	$11,267
JUN.	6 21 96	8 7 96	1,098	$563,955	$563,784	$767	$9,770
JUL.	7 19 96	8 26 96	982	$497,184	$497,184	$0	$13,888
AUG.	8 21 96	9 27 96	1,476	$916,421	$916,421	$0	$17,145
SEP.	9 20 96	11 06 96	1,805	$1,144,782	$1,144,782	$222	$24,829
OCT.	10 21 96	11 22 96	954	$653,213	$653,213	$23	$48,898
NOV.	11 21 96	12 27 96	998	$620,865	$620,865	$0	$12,049
DEC.	12 21 96	1 28 97	1,163	$617,845	$617,845	$0	$38,503
TOTALS:			**13,540**	**$7,640,806**	**$7,678,149**	**$1,750**	**$246,477**

AVG. PURCHASE AMT:	$564
AVG. # TRANSACTIONS/MONTH:	1,128
AVG. DISPUTED AMT/MONTH:	$20,540
AVG. # OF CARDHOLDERS:	130
AVG. # OF CARDS USED/MONTH:	100
ANNUAL AS-IS INTEREST PENALTY: ($20,540/month X 6.75% X 12 months)	$16,637

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