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THESIS

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A LEAST COST STUDY FOR BOOK PROCUREMENT AT
THE NAVAL POSTGRADUATE SCHOOL LIBRARY

by

Patrick J. McCarthy, Jr.

June 1990

Thesis Advisor:

Paul M. Carrick

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A Least Cost Study for Book Procurement at
the Naval Postgraduate School Library

by

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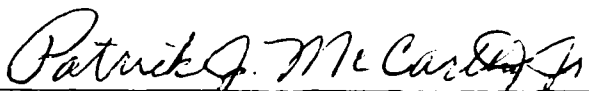
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ABSTRACT

The primary objective of this thesis is to perform a cost effectiveness analysis of the various purchasing methods available to Dudley Knox Library on the Naval Postgraduate School campus in Monterey, California. The intent of the study is to identify the most cost efficient method of procuring books within the guidelines of the Federal Acquisition Regulation (FAR). The research was conducted by reviewing current literature and interviewing persons acquainted with the various cost elements which occur when purchasing books at the Naval Postgraduate School. Approval Plans were found to be the least costly way for a Department of Defense library to purchase books if the library was large enough to sustain an approval plan.

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I. INTRODUCTION

A. GENERAL

Purchases of supplies and services by members of the executive branch of the United States Government requires special care. Over the years a large number of laws, regulations, policies, procedures, and implementing instructions have been enacted to guide the purchaser of supplies and services. These guides are designed to provide the taxpayer with some assurance that tax money spent to run the Government is awarded to suppliers in a reasonable and non-discriminatory fashion.

The purchase of supplies and services for Department of Defense libraries has received no exemption and must follow these same guidelines. Because of these guidelines, DOD library procurement methods are necessarily different from their civilian library counterparts. A few notable Department of Defense requirements which do not necessarily apply to civilian libraries include:

- Significant contract actions will be publicized to increase competition. [Ref. 1:p. 5-1]
- All awards less than \$25,000 must be awarded to small business if available. [Ref. 1:p. 19-10.2]
- Awards for government business will be made on a competitive basis where possible, with exceptions for low dollar value small purchases. [Ref. 1:pp. 6-1, 13-2]

- Awards will be made using only the specifically authorized methods contained in the Federal Acquisition Regulation. [Ref. 1:p. 16-1]

The government does, however, realize that it is not cost effective to use the same time-consuming procedures to buy a pencil that it would use to buy an airplane. It, therefore, came up with:

...simplified procedures for small purchase in order to (1) reduce administrative costs and (2) improve opportunities for small business concerns and small disadvantaged business concerns to obtain a fair proportion of government contracts. [Ref. 1:p. 13-1]

These simplified procedures were enacted to help local purchasing offices deal with the high volume of low dollar value purchases in a relatively efficient way (as opposed to normal contracting methods). These procedures can be applied to supplies contracts that do not total more than \$25,000. [Ref. 1:p. 13-1]

This same call for efficiency in purchasing materials is echoed in the civilian library market. The civilian library market of the 1980s was very similar to the Department of Defense in some very significant ways, such as:

- Tighter budget constraints,
- Smaller staffs,
- New, complicated and expensive automated processing equipment,
- Unrealistic expectations of faculty and university administrators, and
- An ever-increasing population of things to buy, house, and maintain. [Ref. 2:p. 4]

These increased demands with fewer resources will force the civilian librarian of the 1990s to be ever more diligent in identifying more cost effective ways of conducting business. Acquisition processes will have to be streamlined. New ways of doing business will have to be investigated which will reduce acquisition processing time and effort. Files will have to be maintained in the most efficient way available. Methods of providing customer service may have to be evaluated for effectiveness and efficiency. [Ref. 2:p. 4]

The demands now being placed on the civilian libraries are not unlike those that have been in effect for military libraries for many years. The biggest difference between the two has been the need for military libraries to operate under the added weight of government rules and regulations. While the civilian library can change its purchasing procedures practically at will, the military library is constrained to work only within the rules and regulations provided, regardless of how inefficient or unrealistic they may be to their purchasing environment.

It is incumbent upon library acquisition personnel, however, to persevere within the guidelines provided. It is also important to realize efficiencies in the procurement process wherever available. This study will attempt to identify some of these potential efficiencies in the

purchase of monographic materials for the Naval Postgraduate School library.

B. OBJECTIVES

This research effort will be a study to identify the most efficient means of procuring monographic publications for the Dudley Knox Library at the Naval Postgraduate School in Monterey, California within the current regulatory guidelines. This study will utilize a least-cost approach to the various procurement methods currently being used by Department of Defense libraries. Where not quantifiable, additional costs and benefits of each method being used will be identified and their impact on the school explained and evaluated.

C. RESEARCH QUESTIONS

The primary research question is: What is the most cost-effective procurement method for Dudley Knox Library to use to purchase monographic publications?

In support of the primary research question, the following secondary questions were established:

- What Department of Defense authorized methods for procuring monographic publications are currently being used in Department of Defense libraries?
- How do the current procurement practices of Dudley Knox Library compare with those of the University of California, Santa Cruz?
- What costs and benefits should be considered when conducting a least-cost analysis for the procurement of monographic materials at Dudley Knox Library?

- What are the costs and benefits associated with each Department of Defense authorized method of procuring monographic publications?

D. DEFINITION OF TERMS

- Monograph is a book or article, especially a scholarly one, about a particular subject. [Ref. 3:p. 1344] For purposes of this study, a monograph is a book which is not collected by a library as part of a serial.
- Serial is a monograph which is published as one of a number of like monographs, where at least one in the group is published annually. An example would be the annual publication of Jane's Fighting Ships.
- Approval plan is an (complex, long-term contractual) arrangement between an academic or research library and a vendor, whereby: (1) the vendor selects for approval treatment all new titles in a well-defined area, and profiles those selected as to subject and formal characteristics; (2) the library draws up a "profile" of subject, nonsubject or formal, publisher, and serial decisions reflecting its collection development policy; and (3) the vendor matches each new title against the library's profile and sends automatically on approval all positive matches. [Refs. 4:p. 14; 5:p. 4]

E. SCOPE OF THESIS

This thesis is limited to the study of the costs and benefits associated with the various contracting methods currently used within the Department of Defense which might be used by Dudley Knox Library at the Naval Postgraduate School in Monterey, California. It will attempt to identify the least-cost method for the library to follow to purchase monographic publications.

F. RESEARCH METHODOLOGY

Research data were collected from two primary sources.

1. Literature Search

A search of literature was conducted in Dudley Knox Library, a custom bibliography was obtained from Defense Logistics Studies Information Exchange (DLSIE), and bibliographies were obtained from various library journals. Library Literature, an index to library information science, was used to familiarize the researcher with the subject area. Key words/descriptors used included armed forces library; approval plan; acquisition; college and university libraries; jobbers, suppliers, and wholesalers; and surveys. The literature sources examined included published and unpublished papers, periodicals, general reference texts and government publications and reports. A complete list of literary sources used is contained in the List of References.

2. Interviews

Information was collected from personnel who would be knowledgeable about:

- Library procurement procedures, and/or
- Costs and benefits associated with monograph procurements.

Interviews were conducted either in person or by telephone. Questions asked were for the most part open-ended. A few specific questions were asked to ascertain the specifics of costs and benefits the interviewees expected to

accrue from the Dudley Knox Library use of various monograph procurement practices. These interviews allowed the researcher to obtain sufficient background information to form an understanding of what costs and benefits were reasonable to include in the least-cost analysis, and at the same time provide specific costs which could be used directly in the analysis. A complete list of personnel interviewed is contained in Appendix A.

G. ORGANIZATION OF STUDY

This study consists of seven chapters. Chapter I contains the introduction and the definition of the research question. In addition, it defines the scope, the research methodology, and the organization of the study. Chapter II provides some background information on the monographic marketplace. Chapter III provides a history of materials procurement practices at Dudley Knox Library, and discusses the various materials procurement methods currently in use at military libraries.

Chapter IV contains a comparison and analysis of the materials procurement practices currently used at the University of California Santa Cruz library with those at Dudley Knox Library. Chapter V contains the primary research results. Chapter VI provides an analysis of the data just presented, conclusions derived from the research, and recommendations on which are the most cost effective methods for Dudley Knox Library to use to purchase

monographic materials. Appendices and a List of References are provided for information and to facilitate further research in this area.

II. THE MONOGRAPHIC MARKETPLACE

To fully understand the problems Dudley Knox Library faces in procuring monographs, it is important to understand the nature of the market. This will be accomplished by describing the particular roles, environment, problems and interaction between the three major players in monograph procurements for academic and research libraries:

- The publisher,
- The wholesaler, and
- The acquisition librarian.

There are certain industry problems which are unique to an academic and research library like the Dudley Knox Library. These will be emphasized where appropriate.

A. THE PUBLISHERS

The publishing industry in the United States is quite unique. It is characterized by over 20,000 U.S. and countless foreign publishers, all in competition to buy the rights to produce over 50,000 new sole-source monograph titles every year, while retiring from print about the same number. At any given time there are about one million titles listed as being in print, with over one-half of those out of stock at the publisher and awaiting sufficient interest for another printing. [Refs. 6:p. 198; 7:p. 124]

Today's book publishing market has become very specialized. It now has many intermediaries who can more efficiently perform such traditional publishing tasks as editing, printing, sales promotion, physical distribution and storage and financing. This specialization of functions has helped to decrease capital requirements as a major barrier to entry into the industry. With many firms competing against each other in the market, long-term profits in the market as a whole will undoubtedly be modest.

1. The Publisher's Customers

The book publisher has two primary customers. Popular books and textbooks are bought in large quantities by book stores for resale to individuals. The book store's large quantity buys offer the publisher certain economies of scale in longer print run, shipping and handling, invoicing, and collection of accounts costs. Some of these cost savings are usually passed back to the book store in the form of a larger discount from list price than is available to the library buying a single copy.

The publisher's other customer are the libraries. The grade school and public libraries purchase primarily popular books, but they usually buy in single quantities and are a very small part of the publisher's market. The other side of the library market is made up of the academic and research libraries. They typically also buy single quantities, but they buy very few popular and textbooks.

The academic and research libraries are the publisher's primary market for scholarly monographs.

The larger publishers tend to pursue the popular and textbook markets, since this is where the bulk of the publishing industry's sales dollars come from. In fact, the combined grade school, secondary school, public, and academic and research library markets only make up about eight percent of the total book publishing industry sales. [Ref. 8:pp. 127-128] With the large publishers pursuing the large consumer retail market, this leaves the small publishers to fight out the labor-intensive and less efficient scholarly monograph market for academic and research libraries.

2. Problems with Publishers

Many of the academic and research librarians complain that the publishers are not very responsive to their needs. They complain that:

- Books are being remaindered sooner and are going out of print before they can be identified, researched and ordered,
- There are smaller initial print runs, causing them to miss the first printings and possibly the entire issue if the purchaser can't identify it quickly enough, and
- Prices are increasing faster than inflation, causing fewer books to be bought at a time when more books are being published. [Ref. 9:p. 151]

a. Books Going Out-of-Print Too Soon

What has caused the librarian's concern about these issues? Many, in all sectors of the industry, blame

the 1980 Internal Revenue Service (IRS) ruling against Thor Power Tool Company. In that ruling, the IRS said that a company could not write down its inventory to scrap value if the inventory was still being held by the company for possible future sale at the original full price. [Ref. 10:p. 204]

This ruling left the book publishers with a significant tax problem since they had always in the past written down old book inventories to scrap value, but then kept the books for a certain period of time hoping orders would come in for them. Because of the ruling, the publishers would have to either pay tax on the full value of the inventory, remainder the books at steep discounts or destroy the books. [Ref 10:p. 204]

A recent survey of acquisition librarians noted that three of four surveyed felt more books were now going out-of-print before they could purchase them for their library than before the Thor decision. To help the librarians offset this perceived trend, acquisition librarians have increased their use of approval plans by more than 50 percent. [Ref. 10:pp. 211-216]

Are books really going out-of-print sooner? A 1989 study of books in print shows that 66.4 percent of the scholarly titles initially published in 1979 were still in print ten years later. The percentage of 1983 scholarly imprints still available in 1988, five years later, was 84.4

percent. While no comparison was made to the percentages available prior to the 1980 Thor decision, this study appears to refute the claim that books are going out-of-print before the academic librarians can purchase them. This study goes on to state that:

While the Thor Power Tool ruling certainly has impacted the way the publishing industry manages its output, the latest technology in printing has made it more economical to reprint titles in small print runs, thereby permitting some publications to remain in print well beyond the expectations of most libraries. [Ref. 11:pp. 19-20]

b. Print Runs are Too Small

Some acquisition and research librarians claim that there are smaller initial print runs today than there were in the 1970s. This is undeniably the case. Is it caused by the Thor decision? Some would argue it's because:

During the past decade unit sales of books have declined. Scholarly monographs typically sell 600 copies around the world now, rather than the 2000 they used to expect. [Ref. 12:p. 15]

Shorter print runs were the trend of the 1970s. With new printing techniques reducing the set-up costs for the additional press runs, more expensive warehousing costs, and fewer average sales, it makes good business sense for the publishers not to print any more copies than they expect to sell quickly.

The solution to this problem may lie with the librarians rather than with the publishers. The librarians seem very reluctant to place orders for out-of-stock titles with the publishers to await additional print runs. But the

publishers won't print additional books without the backorders. So, if a librarian misses the original print run, the only way they are going to get the book is if enough of them will place the backorders. The choice is there. If an individual title is important enough for a sufficient number of librarians to place it on backorder, another printing will follow. If not, the economics of the market will eventually lead that title to go out-of-print.

c. Book Prices Increasing Too Fast

One of the more vocal complaints of the academic and research librarians is that the prices of scholarly monographs are increasing faster than inflation. That the books' prices are increasing faster than the Consumer Price Index (CPI) is not at issue. What is debated is why.

Some librarians claim that since the publishers are the sole printer for a book, they are charging whatever the market will bear (i.e., a monopoly price) and are receiving excess profits. [Ref. 13:p. 157] This may be true for some of the Fortune 500 publishing companies who are more likely to publish the popular trade books and elementary school textbooks than it is for the scholarly monographs required by academic and research libraries like Dudley Knox Library. The larger print runs available for popular and textbooks are not typically available to the smaller publishers selling their imprints book by book to

libraries. This drives the costs up and probably accounts for much of the increase in prices.

It may also be true for some journal publishers who capture a special niche in the market, like Commerce Clearing and Dun & Bradstreet, who have had an average return on equity of over 35 percent per year for the last five years. [Ref. 14:p. 314]

But for most publishers this simply is not possible. With few barriers to entry in the market, as mentioned earlier, any excess profits obtained by the industry as a whole would soon be eliminated by more firms entering the marketplace.

The cost of scholarly imprints is increasing faster than the CPI, but is that unjustified? Probably not. Even the small publishers are responsible to their capital contributors (i.e., stockholders) to make a profit. It is only reasonable that in face of ever-increasing costs, the prices for scholarly imprints will also increase. Librarians can have little direct effect on this situation, so their best course of action is to understand it and plan for it in their budget preparations.

The publishers are very important to library acquisitions. They decide which books get printed, in what quantities, and for what price. For the most part, the librarians are unable to directly influence the actions of publishers.

Their votes, however, do count. If enough librarians vote to backorder a title, the publishers will re-print it. If they vote not to buy a book because of the price, the publisher will either have to lower the price (sometimes by remaindering at steep discounts) or place the title out-of-print. In either case his lost sales translate into lost profits. A smart publisher won't make the same mistake again. A publisher who doesn't catch on quickly will eventually go out of business.

The publishers are in business to sell books to make their company a profit. The second major player, the wholesaler, is often used by publishers to assist in the actual distribution of their books.

B. THE WHOLESALER

The wholesaler, or jobber, is the middleman in the library distribution chain. His primary functions are to make it easier for the publishers to sell their books to the libraries and easier for the libraries to purchase the books they desire. Which wholesalers a particular library would use should depend on the strengths and weaknesses of the particular jobber.

There are two basic types of jobber the small and the large....The difference between the small and the large jobber can be explained in terms of discount and service. The small jobber is able to customize its services. The large jobber, through economies of scale, is able to offer large discounts through high volume. [Ref. 15:p. 259]

1. The Large Wholesaler

The level of service available from a large jobber is typically very limited. Because they depend on economies of scale to achieve a superior price over the small jobber, the large jobber is very efficient at delivering books from his inventory at a reduced price. His system is not, however, very efficient at obtaining books beyond his own inventory and the publishers' inventories. Even if copies are available elsewhere, the large jobber will not usually identify and procure them for the library.

In order to receive the large discounts from list price, the large jobber must buy books in large quantities. Since large quantities of scholarly monographs are not typically purchased, it then follows that most large jobbers deal primarily in popular books and textbooks.

This means that in most cases, the academic and research libraries must purchase their scholarly monographs from either small jobbers or directly from the publishers.

2. The Small Wholesaler

The small jobber is a service expert. He gains an edge on his competitors:

...by branding the generic book with the value-added services provided by that vendor, by differentiating that copy of the book bought from vendor X from that available from all the other sources including other vendors. When you use a full-service vendor, this branding process takes place through the value-added services and the feature of consolidation. When you use a vendor, you can then buy that book--along with titles from many other publishers, you can get it cataloged and processed, you can get it prebound, rebound, etc. You can get it on standing order;

you can get it through an approval program; you can order it electronically--you can even lease it--and the list can go on endlessly. What we see here is the branding process and with it the intention to build brand loyalty on the part of the customer base. [Ref. 6:p. 198]

In order to achieve the "brand" loyalty, the small jobber must convince the customer that he provides the best value for his monograph procurement dollar. This is a very subjective evaluation by the library acquisition staff, and could be determined by something as small as having a single point of contact for the library to talk to or how often the jobber visits the library. Each situation is unique and must be tactfully handled in order to maintain the relationship.

"In essence, when you hire a (small) jobber you are hiring extra librarians." [Ref. 16:p. 8] This is especially important in today's environment of clerical staff cutbacks. The small vendor can:

- Cut down on the amount of paper handled by having electronic ordering or another simplified ordering system,
- Reduce the number of shipments to be received and processed,
- Schedule billing so the library has to write fewer checks rather than a different check to each individual publisher,
- Process shipment errors by talking to one jobber rather than all the individual publishers, and
- Search the market more efficiently for hard-to-find titles. [Ref. 16:pp. 17-18]

The wholesaler is important to the academic and research librarian as well as the publisher. He helps the

publisher reduce his distribution costs and for that he receives a discount from the list price, with the amount of the discount usually dependent on the number of books the wholesaler buys. He helps the librarian reduce his costs of processing book orders and provides other services the librarian feels are worthwhile.

C. THE ACADEMIC AND RESEARCH LIBRARIAN

The academic and research library market has changed significantly over the past 30 years. The 1960s could have been characterized as years of stability, continuity, and prosperity. None of these characteristics applied to the 1980s. Some of the more significant ways in which the environment changed for the libraries in the 1980s were:

- Fewer libraries were being built,
- Staffs are now smaller,
- There are more books, serials and journals to choose from, with prices increasing faster than library budgets,
- Increased reliance on resource sharing, and
- Reduced retrospective buying. [Ref. 13:pp. 155-156]

These changes have caused major changes in the way academic and research librarians do their business. The changes will be discussed to show the effect they have had on the acquisition librarian.

1. Fewer Libraries were Being Built

With fewer libraries being built, the librarians must make do with the space they currently have. This means

finding more and more space for the ever-increasing numbers of volumes of books, serials and journals they have to house and maintain every year.

To accommodate these space requirements, special use and office spaces are being reduced. Decreases in office space can adversely affect working conditions and morale, and lead to a reduction in staff efficiency. Decreases in special use spaces reduce the level of service provided the library patron. Decisions to make these kinds of changes are not easily made, and must be balanced to reflect the least harmful solutions to space management problems.

The variable portion of the library budget, which usually contains the book budget, is being partially used to buy space-saving collection management systems. This portion of the budget is also being used to purchase and install automated card catalog systems to free up that space. This tends to squeeze out the number of books which can be purchased.

Some newspapers and journals are being purchased in an automated format or on microfilm to reduce space. While this does help with space constraints, using these formats can cost up to 35 percent more than in the traditional format. [Ref. 17:p. 6] This further tends to strain the money available for book orders.

Some public libraries are increasingly forced to retire older, underutilized volumes from their shelves

because of space constraints. This is a very hard decision for a librarian to make.

The space constraints imposed upon libraries today is causing significant problems for the library. They have to juggle office, special use, and collections space to come up with a optimum mix for everyone concerned. They also have to juggle financial resources to come up with the best mix of space savings and collection development. These efforts, along with the rest of the library functions, must now be accomplished with smaller staffs.

2. Smaller Staffs

Today's libraries are faced with having more to do with fewer personnel. Some of the more significant cuts were in the clerical support area:

...seeing a major cutback in personnel, coupled with book budgets that remain the same or actually increase. The government programs that brought CETA and other government-funded personnel are being slashed and we now are faced with libraries without a clerk in sight. [Ref. 16:p. 17]

In addition, college enrollments are dropping, causing a reduction of work-study students at the same time university administrators are decreasing full-time equivalent staff budgets. [Ref. 2:pp. 3-4]

When reductions of supporting personnel occur, the remaining professional library staff must spend some of their time on those functions traditionally performed by the clerical and other supporting staff. This contention is

supported by a recent survey of academic and research librarians which found:

A great deal of overlap between professional and nonprofessional work in acquisitions...a surprising number of professional librarians (were) involved in vendor selection, serial check-in, order placement and similar tasks. [Ref. 18:p. 42]

This situation is undoubtedly very frustrating for professional librarians. They must spend less of their time performing the function for which they were trained and hired and more of their time performing clerical functions.

3. More to Buy with Fewer Resources

There are now more books, serials, and journals available to purchase than there were in the 1960s. In addition, the prices for all three types of materials have been increasing faster than the materials acquisitions budgets of the libraries. The combined effect of these factors has been to squeeze the material budgets of the libraries.

But the burden doesn't fall evenly. Journal subscriptions are typically the largest portion of the materials budget, the fastest-growing part of the budget, and the hardest to cut. Not-carried journals also typically account for more unfilled demand than any other part of the library collection. A university's faculty depend upon its library to have the proper journals available in their areas of expertise in order to remain current. Their research and class preparation depend on it.

In addition, the number of journals has been increasing, as publishers specialize into journals of very small scope. Librarians have had to, in many cases, negotiate with the faculty to terminate less valuable subscriptions in order to obtain more highly desired ones.

Essentially, the journal portion of the materials budget is a required expense, which increases every year at a faster rate than the materials budget as a whole.

The serials budget is much the same as the journals budget. Once the library has invested in a serial for several years, it is very hard to stop. In addition, many of the serials have the same characteristics of a journal and it is necessary to maintain the series to remain current in the particular field of study.

The costs in the serials budget act very similar to the costs for journals. Once again, the price for serials increases faster than the increase in the materials budget.

The book budget is the most flexible portion of the materials budget, and probably of the entire library budget.

The firm-order book budget has become the most vulnerable spot in the library's annual planning. It is there, unencumbered or unspent at mid-year, to cope with unexpected increases in annualized obligations or, worse yet, with a take-back by the funding body responding to outside deficits. [Ref. 19:p. 241]

An example of how vulnerable the book budget is can be illustrated with an example. Assume that last year the library had a \$1 million materials budget, with 60 percent spent on journals, 20 percent on serials, and 20 percent on

books, with the average price of a book equal to \$50. In addition, assume the materials budget this year goes up by the amount of the CPI, five percent in this example, while the cost of all material purchases goes up by ten percent and the library must purchase all the journals and serials it purchased the year before. Given this scenario, the number of books purchased will be reduced from 4000 to 3091, a 23 percent reduction in one year, and the book budget has dropped from 20 percent of the materials budget to 16.2 percent.

As you can see by this example, the book budget is a consistently-shrinking portion of the materials budget. This is the squeeze the academic and research librarians are currently caught in.

With materials budgets increasing slower than the cost of the materials purchased, and given the relatively fixed nature of journals and serials, the librarians are increasingly faced with using other methods to ensure their library has adequate coverage.

4. Resource Sharing

The primary method used by libraries to increase their subject matter coverage with less materials budget purchasing power is through resource sharing. In resource sharing, a group of libraries enter into an agreement to loan materials between libraries. In some cases, the libraries designate specific core collections they will

pursue and coordinate this collection building with the other libraries in their resource-sharing network in order to maximize the collective assets available to their patrons. [Ref. 20:p. 350]

The libraries would, of course, prefer to not have to use resource sharing. They still prefer to own rather than just have access to the information. Resource sharing is, however, becoming a more and more important service to the library patron given current budgetary constraints.

5. Reduced Retrospective Buying

As mentioned previously, there is less time and money available to spend on book purchases. Books purchased years after initial publication (retrospective buying) take much more time to locate than current titles. This, combined with the perception that books are going out-of-print quickly, leaves many librarians to think their efforts in this area are usually wasted.

The end result of all these factors is likely to be a collection that has gaps in it, once again leading to reliance on resource sharing to fulfill the patrons' needs.

D. SUMMARY

The monographic marketplace is a dynamic and complex one. The publishers are fighting to increase their share of the market, and provide a reasonable return for their investors. Since fewer copies of scholarly monographs sell now than they did in the past, they must print more titles

in order to fully utilize their facilities and compete effectively in the publishing market.

The wholesalers reduce the transaction costs between the thousands of publishers and librarians. They reduce costs for the publisher by purchasing in bulk and reducing the paperwork costs associated with the book sales. They sell their unique services to librarians and attempt to cultivate long-term relationships with them. These long-term relationships serve to increase his share of the market and make a profit for their investors.

While dealing with the publishers and wholesalers, the academic and research librarians' methods of doing business have changed dramatically. The librarians have less money, smaller staffs and no increase in space to research, buy, maintain and store ever-increasing numbers of books, serials and journals than they had a couple of decades ago. This decrease in resources has come at a period of time when there are more new scholarly monographs and journals available than at any time in history. Librarians have had to become more imaginative in finding ways to serve the needs of their patrons. By using resource sharing, on-line card catalogues and other innovative techniques, today's librarians are finding more efficient ways to conduct their business.

III. BOOK PROCUREMENT AT DUDLEY KNOX AND OTHER DOD LIBRARIES

A. THE HISTORY OF THE SCHOOL

The Naval Postgraduate School (NPS) is chartered to provide graduate-level education to United States and international officers of the military services and federal agencies. The primary emphasis of the school is on programs that are required to support the missions of the Navy. The officers who attend the school receive full pay and benefits, and the activity that sponsors the officer pays for tuition and other direct costs of education. Upon graduation, these officers are then assigned, as soon as practical, to a tour of duty in which the officer will be required to use the knowledge and skills acquired at the school. [Ref. 21:p. 5]

The school was established in 1909 as a department of the U.S. Naval Academy at Annapolis, Maryland, and had an initial enrollment of ten students. In the late 1940s the school was established as a separate command, and the school was moved to Monterey, California in 1951. The school currently has an enrollment of about 1700 students and provides over 800 graduate-level degrees each year. [Ref. 21:p. 6]

B. THE HISTORY OF BOOK PROCUREMENT AT THE NPS LIBRARY

When the Naval Postgraduate School moved to Monterey in 1951, the school no longer had access to the U.S. Naval Academy library. To support the mission of the school by supporting faculty and students in the pursuit of education and research, the school established Dudley Knox Library.

For over 30 years, from 1951 to 1988, Dudley Knox Library was authorized to purchase most of its materials and services using a delegated blanket purchase agreement (BPA) call authority. This system worked very well for the library. This process of purchasing was acknowledged throughout the years during periodic reviews. Specific endorsements of the system were received in 1964 and 1974. [Ref. 22]

As originally set up, this system allowed Dudley Knox Library to order books under a BPA without establishing an obligation in the school's official accounting records at the time of order. The library earmarked the funds and tracked the obligations for book purchases internally, and as books came in, they were assigned a call number and the obligation and receipt documents were jointly forwarded for processing. Monthly invoices were received and matched to the receipts and forwarded by the library to the school comptroller for payment.

Since no obligation was established at the time of order, unusual steps had to be taken to ensure books were

not received after the end of the fiscal year. To clear the system of undelivered books, the vendors were prohibited from delivering books during the last month of the fiscal year. All orders outstanding as of that date were cancelled for the current fiscal year, and automatically re-instated as of the first day of the new fiscal year. [Ref. 22]

In September of 1986, a meeting was held to discuss a recently-concluded Naval Audit Service inspection. The use of BPAs for ordering monographs had been a major discrepancy discovered by the inspection team. The two areas that were identified by the audit team as needing correction were:

- Funds were not obligated at the time an order was placed, and
- There was no separation of the ordering and receiving functions. [Ref. 22]

The Dudley Knox Library lost BPA call authority in August 1988. Since that time, the library has been purchasing monographs through the Library of Congress Federal Library and Information Network (FEDLINK) system. When ordering books under FEDLINK, the library obligates a large block of funds designated for book procurement. The funds are transferred by the school to the FEDLINK program at the beginning of the year. FEDLINK services are not free. They charge a fee of six percent of the money allocated for book purchases to administer the contract. FEDLINK then places a delivery order with a previously-approved contractor. The library is then authorized to

place orders for the needed books. The vendor bills FEDLINK, FEDLINK pays the vendor and then provides the library a monthly statement of account. This system reduces the administrative paperwork to the minimum required for effective control of the funds spent. [Ref. 23]

C. MONOGRAPH PROCUREMENT AT MILITARY LIBRARIES

As of 1987, the Department of Defense had 1090 libraries. The largest percentage of these were general libraries which provide support to a base or station. Only 30 of these libraries were academic libraries like Dudley Knox Library. A recent survey of military libraries revealed the libraries used four primary methods to procure their books:

- Local procurement office,
- Delegated BPA call authority,
- FEDLINK, and
- Approval Plans. [Ref. 3:pp. 37-53]

1. Local Procurement Office

The local procurement office was used by every library surveyed. When a local procurement office purchases books, it has a wide variety of contracting methods available to it. It most often uses BPAs to purchase books. If it uses the same vendor for successive small dollar-value purchases, it can set up a BPA to simplify the paperwork required for the purchase. The General Services Administration (GSA) provides agreements with selected book

vendors which allow the local procurement office to order books by placing a delivery order with the vendor, with the terms and conditions previously negotiated by GSA. The third commonly-used method of procurement for small purchases at a local procurement office is a purchase order. A purchase order is typically used when neither of the two previously-mentioned methods of purchasing is available. A purchase order requires more administrative effort and time than a BPA call or a GSA schedule delivery order, so it is avoided as a method of purchasing small procurements whenever possible. [Ref. 3:pp. 40-45]

Using the local procurement office to purchase books causes significant problems for the library as well. In addition to making book selections, the library must:

- Fill out and provide the required paperwork for each title selected to the local procurement office,
- Keep track of each purchase request in manual records to account for funds obligated,
- Wait for the procurement office to buy the book, which can take up to 45 days or more depending on the method of local procurement used and the office backlog [Ref. 3:p. 45],
- Hope the local procurement office awards the purchase to a vendor that will be able to actually fulfill the order, and
- Once delivery has been made, wait for the receiving department to get the book to the library.

This process can more than double the required administrative efforts of the library acquisition staff. The total time to receive the books, once selected, could

also be doubled depending on local procurement office backlog and the contracting method used for the purchase.

While not efficient, local procurement offices must be used in cases where:

- Insufficient business is done with a vendor to warrant setting up a BPA,
- When the book can only be purchased directly through a publisher, or
- When a book cannot be purchased on GSA schedule, through FEDLINK, or on an approval plan.

2. Delegated BPA Call Authority

Local procurement offices will often delegate to a library the authority to purchase books by making calls to existing BPA vendors. This was the system used by Dudley Knox Library until August 1988. There are two primary advantages to a library for obtaining BPA call authority. When the library places the call:

- The purchase doesn't get tied up in the backlog of the local procurement office, and
- They can control who the purchase goes to.

The purchase of books is not a very high priority for most local procurement shops. Those purchases are competing with mission-essential purchases for the time of the buyer. It is hard for a buyer to perceive a book purchase being as important as the purchase of a repair part to fix a broken airplane. In addition, most local procurement offices have a significant backlog of work. The request for purchase of a book must wait in line for its

turn just like all the other routine purchase requests. Depending on the local purchase office, this backlog can at times be three to six weeks or longer. By doing it themselves, the library determines the priority of the purchase and how long it takes to get the purchase awarded.

When the purchase is completed by the library, it controls who receives the award. This can be very advantageous because of the experience of the library. Most library orders are best suited to be filled by one particular vendor. The library knows who is an appropriate vendor based on past experience in working with the vendors. This does not mean, of course, that the lowest-cost source will necessarily be selected. By selecting the proper vendor, the library can reduce follow-up and cancellation costs associated with selecting a vendor who cannot deliver. The local procurement office generally does not have this knowledge and will pick a vendor usually based on lowest quoted price.

This lowest price is quite often not the best value for the government. Books are low dollar value buys, for which the transaction costs are high. Personnel resources are tightly constrained at most libraries. Not purchasing from the vendor who will provide the best service means the library will spend extra time on order follow-up (the claiming process), cancellations and re-orders. If cancellations occur after the beginning of a new fiscal

year, the funds set aside for that purchase are lost to the library, and the book may never be purchased.

Proper use of a local procurement office BPA, however, still requires significant administrative effort.

- All the paperwork required when the local procurement office completes the purchase is still required when the library awards the purchase,
- Firm price quotes must be obtained for every book ordered,
- The orders must be shared equally among all qualified BPA vendors of the particular commodity being purchased, and
- Special procedures must be in place to track every book ordered to its assigned call number.

Each of these administrative requirements limits the efficiency of using BPAs to purchase books. Because of the cost and time associated with these requirements, BPAs will probably not be used as the primary means of purchasing books at Dudley Knox Library in the future.

3. FEDLINK

The Dudley Knox Library's use of FEDLINK was discussed earlier in this chapter. The primary advantages to using FEDLINK are:

- Reduced administrative paperwork for ordering books,
- Receipt of books can come directly from the vendor to the library rather than being channelled through the receiving department,
- Invoices for payment are processed by the FEDLINK program, reducing local receiving, invoice certification, accounting transaction, and bill paying costs, and

- There is no need to worry about competition or spreading the business since these steps have been fulfilled by the FEDLINK contracting process.

FEDLINK practically eliminates the administrative paperwork required to order books. The funds required to pay for FEDLINK-ordered books are obligated and expended by the school at the time they are transferred to FEDLINK. The official accounting records have no further need to interact with the book-buying process. The implications of this are very important.

Since the receipt of materials no longer need to be tracked to accounting records, the books can be processed directly by the library rather than being diverted through the receiving department. The receiving process becomes totally internalized within the library, with no documents needing to go to any outside activity.

The vendor bills are paid by FEDLINK, once again relieving the local authorities of that function. The local accounting office only pays one expenditure to FEDLINK rather than separate expenditures for every invoice. This provides cost savings to the library, the school comptroller, and the bill-paying office.

The need to spread the business when using a BPA is eliminated. The library has the option of using any of the approved FEDLINK vendors in any combination that best suits the needs of the library. This flexibility is a real advantage to the experienced librarian who knows which

vendor is most likely to be able to fulfill a given purchase.

These advantages dramatically reduce the cost of book procurement and provide for greater efficiency in the scholarly monograph procurement process. There are, however, some disadvantages to using the FEDLINK system. Some of these include:

- Book purchasing is currently limited to four vendors,
- It costs six percent of the funds forwarded for the book budget to have FEDLINK administer the program, reducing the funds available to purchase books,
- A large block of funds must be available and transferred to FEDLINK early in the fiscal year before any books can be purchased, and
- FEDLINK will accept no end of fiscal year funds.

These disadvantages are important. None of the four current FEDLINK book vendors is a specialist at providing scholarly monographs for a graduate-level educational institution. This means that the library acquisition personnel must spend significant amounts of time on the telephone with the vendors to determine if the vendor can ship titles that have been ordered. Those titles that are not available must be cancelled and re-ordered from another vendor. If the variety of vendors available was increased to include some vendors known to provide good graduate-level book service, the amount of library personnel time spent claiming, canceling and re-ordering books could be reduced.

The six percent fee is important. If the fee comes out of book-purchasing funds, as it typically would, it means that for every 16 books purchased, one must be left out of the collection to pay the fee. The total loss from the fee could, however, be offset somewhat by any increase in the reduction from list price the Library of Congress receives from the vendor because of the large dollar value of the contract, and the economies of scale involved in large orders from the publishers.

Setting aside a large block of funds at the beginning of the fiscal year is a hard task for a military library. Most activities aren't provided their budgets until well into the first quarter of the fiscal year. In addition to the FEDLINK contract, early fiscal year funds are often required for computer maintenance and usage services and journal and serial subscriptions. If not immediately available, book procurement can be totally shut down for the entire year.

Another problem is end-of-year funds becoming available for monograph purchases. End-of-fiscal-year funds are always hard for operating activities to handle. These funds are typically received during the last 30 days of the fiscal year. They must be obligated on the official accounting records prior to the end of the fiscal year. The local purchasing office is typically unable to buy everything requested during the last month of the fiscal

year. These funds could be quite easily spent by the library if the FEDLINK system would accept them. Because it won't, the library is forced to compete with all the other demands placed on the local procurement office to spend the funds or be forced to lose the funds to someone who can spend the money. Because of this eventuality, the military library is usually ready for end-of-year funds by waiting until then to purchase expensive sets of reference materials, even though this may not be the best use of the funds. [Ref. 23]

Despite the disadvantages mentioned above, the FEDLINK system has proven to be an effective way for Dudley Knox Library to purchase its scholarly monographs. The administrative savings are substantial. The existing small number of qualified vendors may be remedied when new three year contracts are awarded for fiscal year 1991. FEDLINK will probably remain the primary source of monograph procurement efforts for Dudley Knox Library for the immediate future.

4. Approval Plans

Although approval plans were used by only ten percent of the military libraries recently surveyed, it is a procurement method used often in civilian library procurement, and, as such, deserves serious consideration as a method of contracting for books in a military library. [Ref. 3:p. 49]

An approval plan is an agreement between a library book wholesaler and the library. In this agreement, the wholesaler and the library define what is required by the library as a base collection--those categories of books the library would definitely like to have in the book collection. The wholesaler then surveys the market for new titles which meet the requirements of the buying library's base collection. These books are purchased by the wholesaler and shipped to the library for review and approval. Those that are not approved are shipped back to the wholesaler and the library is not charged for the selection.

Some vendors structure their business to revolve around approval plans. They match customer requirements with publisher listings of new titles and buy their books in bulk. Bulk buys usually afford the vendor a larger discount from list price than is otherwise normally available. Some of this savings is usually passed on to the library in the form of lower book costs than would be available from any other purchasing method.

A second aspect of the approval plan is in handling book categories the library may want. Once again, the wholesaler, working with the library's staff, defines exactly which categories of books fit into its collection development criteria. Rather than sending the book, the wholesaler sends the library a notification slip that the

title is available. If the library decides to purchase the book, the library need only send the notification slip back to the wholesaler as an order slip, without the right to then subsequently disapprove the selection.

In either case, the wholesaler has performed a preliminary collection-planning function for the library. A firm, detailed collection-planning policy would have to be formulated for the library to institute an approval plan. Then the wholesaler screens the market just as the library would do, only probably more efficiently. If the library is small and personnel resources are scarce, the wholesaler is performing a function one time that will benefit many subscribing libraries. It is as if the library was able to hire additional collection-planning staff. Library personnel being used to fill that function can then be re-employed in other areas, such as researching hard-to-find back issues that are required for the library collection.

[Ref. 16:p. 18]

The advantages of an approval plan are numerous. An approval plan has the same cost-saving features as FEDLINK plus the collection-planning features previously mentioned. They can be established for up to five years, a long-term relationship that minimizes disruptions to both parties. It is more timely than any of the other procurement methods mentioned. Because the wholesaler does the collection planning and ordering of books prior to publication, the

library does not have to worry about base collection volumes going out-of-print prior to ordering the book. The approval plan also offers the library the option of looking at the book prior to purchasing it.

There are very few disadvantages to an approval plan. It can generally be started on a book budget as small as \$50,000. If funds are unstable, the plan can allow for periods of time when no books are sent. The approval plan may require considerable effort to start up, but it is then relatively easy to maintain thereafter. [Ref. 24:pp. 15-18]

Probably the most significant disadvantage to attempting an approval plan at a military library deals with selection of the approval plan wholesaler. The government procurement regulations require competitive procurements and awards to small businesses whenever possible. This process could lead to selection of a vendor who cannot provide as good service as a specialist in the particular needs of the library. Some of the risk associated with vendor selection can be offset by writing and justifying a statement of work that will only allow acceptable specialists to participate in the solicitation process. Source selection criteria can be written which will place a heavy emphasis on the technical capabilities of the vendor, rather than on price.

This process takes a lot of effort and can backfire on the library. Vendors excluded from the solicitation could protest the statement of work as being too restrictive

for the needs of the library. A protest stops the process and could delay the approval plan indefinitely. The purchasing offices could unilaterally ease the requirements to help him meet his small business goals. The uncertainty of source selection alone has probably kept many military libraries from adopting approval plans.

D. SUMMARY

For the first 30 years of its existence, Dudley Knox Library used a delegated BPA call authority to purchase scholarly monographs. This system, when used according to all the required rules of military purchasing, proved to be paperwork-intensive and untimely. The library switched to FEDLINK in 1988 as a means of reducing the paperwork burden and increasing the timeliness of book purchasing.

The delegated BPA call authority and FEDLINK systems that have been used by Dudley Knox Library are two of the four methods primarily used by Defense Department libraries to purchase books. The other two are using the local procurement office and setting up an approval plan.

Reliance on the local procurement office has the same major disadvantages as using delegated BPA call authority. In addition, it takes even longer to award the purchase and the order may be awarded to a vendor who may not be able to deliver with the level of service required.

Using FEDLINK or an approval plan practically eliminates the paperwork involved in a government procurement. In

addition, the books usually cost less because the wholesaler can buy in large quantities with a larger discount than when buying individual copies. Approval plans have the added feature of allowing a vendor to reduce the collection planning effort necessary at the library.

The next chapter will compare book procurement at Dudley Knox Library with book procurement at a local civilian academic and research library.

IV. CIVILIAN LIBRARY PROCUREMENT

A. INTRODUCTION

Book purchasing for Defense Department libraries is different than for civilian libraries. To more fully understand these differences, the book buying practices of Dudley Knox Library will be compared with those at University of California Santa Cruz (UCSC). While the missions and resources of the two libraries are different, the book buying practices of the two schools illustrate, in general, how the libraries have adapted to their book-buying environments.

UCSC has primarily an undergraduate student population while NPS students are all studying beyond the undergraduate level. This means that the two libraries will have different requirements for the kinds of books they should buy to meet the needs of their patrons. No two academic and research libraries, however, have exactly the same patron needs. Selecting different vendors to fill different collection requirements does not, in and of itself, negate a comparison of the book buying practices.

Another big difference between the two libraries is their materials purchases budgets. In 1989, UCSC had a total materials budget of about \$2.1 million. Of that, about \$700,000 was set aside for monograph (book)

procurement, with the remainder available to purchase serials and journals. [Ref. 25] Dudley Knox Library, on the other hand, had a total materials budget of about \$615,000 in 1989, of which \$64,500 was spent on books. [Ref. 23]

Although the materials budget for UCSC is three times as large as it is for Dudley Knox Library, it should not be significant in the book-buying practices comparison. This comparison is more concerned with how the purchasing environment affects the book-buying process. Funding levels should not matter once the minimum level is reached where all methods used by one library could be used by another.

The libraries are similar in that they are both academic and research libraries, whose patrons are primarily faculty and students. This similarity is important in that the two libraries have the same general mission--to provide a sufficient level of service to their patrons as efficiently as practical.

B. THE BOOK PURCHASING ENVIRONMENT

The book buying environment at UCSC is quite different than it is at Dudley Knox Library. Some of the more notable differences include:

- Stability of funding,
- Collection planning, and
- Contracting regulations.

1. Stability of Funding

The UCSC library receives its full-year allotment of funds at the beginning of the calendar year. These funds are appropriated by the California State Legislature. Through prior agreement, the percentage of funds provided to each of the University of California campuses is predetermined. The legislature has not cut the funds since this agreement came into existence in 1980, and when the budget allows, the Legislature provides increases to match inflation. The funds are all provided at the beginning of the year and are never added to or reduced. While UCSC tries to use all its funds prior to the end of the year, the funds can be carried over so they are not lost if not spent by the last day of the year. Any funds recouped from cancellations which occur in the new year can also be used in the new year. [Ref. 25]

Dudley Knox Library, on the other hand, operates in a very volatile funding environment. Funds are initially appropriated by Congress for base operations in general. These funds eventually flow down to the school. Once received by the school, the library must compete with all the other users of funds on the base. Seldom are the budgeted and received amounts close to the same. In a given year, the materials funds received are just as likely to decrease as they are to increase, and there is seldom much prior indication which way they will go. Funds available to

purchase books at Dudley Knox Library for the past five fiscal years are shown below. The amounts in brackets denotes that portion of the yearly total which was provided as end-of-year funds which are not available for routine book purchases. [Ref. 23]

FY85	\$122,000	[\$31,000]
FY86	\$ 89,000	[\$18,000]
FY87	\$135,000	[\$27,000]
FY88	\$116,500	[\$10,000]
FY89	\$ 64,500	[\$40,000]

Eventually the budget is provided to the library, sometimes three or four months into the new year. But that isn't the only constraint on the funds. The funds are usually provided on a quarterly basis, with no carry-over allowed between quarters. Large amounts of funds are occasionally made available during the last 30 days of the year, making it very hard to plan and use the funds to their best advantage.

The UCSC library has a tremendous advantage over Dudley Knox Library when it comes to stability of funds. Funds are available sooner, they last longer, and the level of funding is more predictable. This fund stability provides the UCSC library with the ability to better plan its purchases to the best advantage of the library collection.

2. Collection Planning

Collection planning is done totally differently at the two libraries. At UCSC, personnel funds are available to hire six full-time subject bibliographers. In addition, 11 other library personnel perform collection planning on a part-time basis. [Ref. 26] These people decide which books, serials, and journals are purchased by the library. In most cases, they have intimate knowledge of the subject area which they manage.

In contrast, at Dudley Knox Library, there are several collection planners who manage subject areas as a collateral duty. They average about one hour per week each on this function. [Ref. 23]

The library collection planners provide preliminary selections to faculty library council members for each department by reviewing current journals and other sources for potential book purchases. The library council member reviews these selections and makes selections of their own based on their own research, and fliers, pamphlets and catalogs distributed by publishers.

These recommended purchases then go to the acquisition librarian who further screens the book requests since there are usually insufficient funds to purchase all the books selected. The books which cannot be purchased when ordered are filed. As funds become available these books can then be ordered. If a request sits in the file

for two years, it is normally discarded. Many books are not available after two years so any available funds are best spent on books the library has a better likelihood of receiving. The acquisition librarian then purchases the books just selected on this last round of reviews.

The UCSC library has a balanced and efficient approach to collection planning. The collection is not biased in favor of a professor or acquisition librarian who may know very little about certain areas for which they are tasked to recommend books. The process is also more streamlined in that only one person makes the decision to buy a title, rather than going through three layers of selection to get a book ordered.

3. Contracting Regulations

The vast array of contracting regulations is probably the most significant environmental difference between the two libraries. At UCSC, the library performs its own acquisitions. It has the authority to make any materials budget purchase. The primary rule the purchasing operation must follow is that purchases and receipts are required to be recorded in the computer system, which prints out the order document. This computer system also provides the required information to accounting for invoice payment.

The purchasing regulations that Dudley Knox Library must operate within were mentioned in Chapter III. The Dudley Knox Library or its supporting local purchasing

office must get competition, go to small business concerns whenever possible, and account for their funds manually, to name a few. The administrative burdens associated with these regulations, along with unstable funding and an inadequate collection planning function drive Dudley Knox Library to purchase books differently than at the UCSC library.

C. BOOK PURCHASING AT UCSC

Because the two libraries operate in different environments, it necessarily follows that they would adapt to those environments and purchase books differently. Most of the current book-buying practices at Dudley Knox Library were explained in Chapter III. Those practices will be compared with the book-buying practices at the UCSC library. The UCSC library uses three primary ways to purchase books. They are:

- Firm orders,
- Standing orders, and
- Approval plans. [Ref. 26]

1. Firm Orders

Firm orders are used when the library orders a specific title. A firm order will usually result from a student or faculty request for a book to be placed in the collection. Additionally, the bibliographer will sometimes try to order a specific title to fill a void in the collection.

When using a firm order, the bibliographer will ensure the book is not on hand or on order, and then request the purchasing department to place the order directly with a vendor. The purchasing department will find a suitable vendor and order the book through the computer system. Dudley Knox Library buys all its monographs that are not serials by direct order.

2. Standing Orders

Standing orders are orders for books not yet published, but scheduled for publication. Standing orders are most often used to purchase serials and conference proceedings. UCSC and Dudley Knox Libraries both use standing orders for the same kinds of purchases. The problems for Dudley Knox Library are that it takes much longer for them to get a standing order established, and, once established, it is only good for the year in which it is established. At UCSC, a standing order runs indefinitely --until either party changes the agreement. Because of these differences, gaps can develop in the Dudley Knox Library collection for those titles which are released when the library is without contract coverage.

3. Approval Plans

Of the \$700,000 UCSC spent on books in 1989, \$425,000 of it was spent on their 13 approval plans. Up to one-half of the remainder of the book funds could also go to

the approval plan vendors for slip selections and other direct orders. [Ref. 25]

When setting up an approval plan, UCSC solicits proposals from all the vendors it feels can deliver the correct books with an appropriate level of service. This process can take up to six months for a large approval plan. Service is the primary determinant in the selection on a new approval-plan vendor, with price being a very minor factor.

Once established, an approval plan is usually maintained for a long period of time to ensure reliable service and minimize disruptions associated with changing the vendor. Approval plans are usually terminated only if the level of service being rendered by the vendor is considered insufficient.

D. SUMMARY

The purchasing environment for civilian universities is much less restrictive than for Defense Department academic and research libraries. The civilian universities have more stable funding, larger collection-planning staffs and fewer purchasing regulations.

To operate more efficiently in their environment, they use approval plans to purchase the majority of their monographs. To more closely emulate the private sector efficiencies, Defense Department libraries should consider the feasibility of using approval plans to purchase their books.

V. METHODOLOGY AND DATA PRESENTATION

A. METHODOLOGY

This chapter is designed to provide a least-cost model to help NPS determine which method of procuring its standard-order books is most efficient for the school. The most efficient methods for purchasing reference sets, books purchased with end-of-year funds and books which must be purchased from the publisher are not included in this study. It does include, therefore, the costs to order routine standard-order books.

All costs to NPS that can be directly identified to purchasing its standard-order book-buying process will be identified, and to the extent possible, quantified. Costs to other activities, such as the cost to pay the bills, were not considered as part of this model. While important, the costs to other activities are not directly relevant to the resource allocation process at NPS.

The costs identified in this study are average costs, not marginal costs. Marginal costs would be ideal for the marginal decision, but they are much harder to quantify than average costs. This study is concerned with the overall efficiency of the book-buying function. Average costs are more relevant than marginal costs when concerned with overall efficiency of an operation. This study should help

NPS more efficiently allocate its resources by buying books at the lowest overall cost to the school whenever possible.

The data elements included in the cost model were decided upon based on information received during the interview process. The questions asked of interviewees were, for the most part, open-ended. This allowed a free flow of information. The following kinds of information were requested during the interviews:

- The types of costs NPS incurs from each book procurement method,
- The kinds of benefits NPS receives from each procurement method, and
- Actual dollar value of each type of cost for each book procurement method.

From the literature, it was determined that there were four primary methods available to Dudley Knox Library for purchasing books. They were identified in Chapter III as:

- Local purchasing office,
- Delegated BPA call authority,
- FEDLINK, and
- Approval plans.

The costs associated with each of these book procurement methods will be identified, quantified and presented in this chapter. The costs and benefits of each purchasing method will be analyzed in Chapter VI.

Sixteen individual cost elements were directly identified to book purchasing. Each of these cost elements

fits into one of the following four categories of book procurement costs:

- Up front costs,
- Pre-order costs,
- Order and follow-up costs, and
- Receiving and cataloging costs.

Some costs were identifiable on an individual title basis. Some costs are defined by total annual costs. Still others are identified on a per-order basis. In each case, the dollar value will be placed on a total annual dollar basis to facilitate comparisons.

To annualize the costs, an assumption must be made concerning how many books will be purchased using standard-ordering procedures. For fiscal year 1991, Dudley Knox Library budgeted \$176,000 for book procurement, with the average standard-order book costing \$47. This study assumes 2500 standard-order books will be purchased, with the remainder of the book budget used to purchase stub orders (non-standard book orders).

All the costs provided in this model are estimates by Dudley Knox Library acquisition department staff unless noted otherwise. All calculations are provided in Appendix B.

B. THE DATA

1. Up-front Costs

Up-front costs are those costs which are necessary to set up and use the various procurement methods. Three cost elements are identified as up front costs. They are:

- Approval plan set-up costs,
- Approval plan maintenance costs, and
- The FEDLINK delivery order administration fee.

No up-front costs are associated with using the local purchasing office or the delegated BPA call authority. There is normally a cost to set up a BPA, but since the BPAs are already in existence, no additional cost is involved.

Total up-front costs are shown in Table 1.

TABLE 1

UP-FRONT COSTS

Method of Ordering

	FEDLINK	Local Purchase Office	Delegated BPA	Approval Plan
Set-up Approval Plan	\$ 0	\$ 0	\$ 0	\$ 2,701.05
Maintain Approval Plan	0	0	0	605.88
FEDLINK Admin Fee	<u>7,050.00</u>	<u>0</u>	<u>0</u>	<u>0</u>
Totals	\$7,050.00	\$ 0	\$ 0	\$ 3,306.93

a. Approval Plan Set-up Costs

These are the costs to initially start an approval plan. Labor costs are associated with writing a statement of work and source selection criteria for the government-contracting process. In addition, it takes time to develop the book-collection plan to determine which categories of books will be sent to the library on approval.

These costs were estimated to be 120 hours of library acquisition staff time and 39 hours of library council member faculty time. The total cost for this activity is estimated at \$2701.05. This cost is only applicable to approval plans.

b. Approval Plan Annual Maintenance Costs

This is the cost of maintaining the approval plan after the initial set-up is complete. It is the process of reviewing the book-collection plan with the vendor and faculty members to ensure the approval plan continues to provide adequate subject area coverage. These reviews take place at pre-determined intervals and whenever a potential problem area is uncovered.

The cost estimate for approval plan maintenance includes 30 hours of library acquisition staff time and six and one-half hours of faculty time annually. The total annual cost for this activity is \$605.88. This cost is applicable only to approval plans.

c. FEDLINK Delivery Order Maintenance Fee

This cost element is the FEDLINK charge to administer the FEDLINK contract. It is six percent of the dollar value forwarded to FEDLINK for book purchases.

It was assumed that 2500 books at a cost of \$47 per book would be available in fiscal year 1991. Six percent of this \$117,500 makes the cost to use the FEDLINK contract \$7050. This cost is applicable only to the FEDLINK method of purchasing books.

2. Pre-order Costs

Pre-order costs are those costs that are necessary to research and plan which books will be ordered. Three cost elements are identified as pre-order costs. They are:

- Library staff collection planning,
- Faculty collection planning, and
- Library acquisition staff selection and research.

These three cost elements are constant whether the method of purchase is FEDLINK, the local purchasing office, or a delegated BPA.

None of these costs are applicable to an approval plan. Once set up, an approval plan does the collection planning for the library. Since the books are shipped directly to the library without the library asking for them directly, no research is required to ensure the library is ordering the right book.

Total pre-order costs are shown in Table 2.

TABLE 2

PRE-ORDER COSTS

Method of Ordering

	FEDLINK	Local Purchase Office	Delegated BPA	Approval Plan
Library Staff Collection Planning	\$ 18,069.48	\$ 18,069.48	\$ 18,069.48	\$ 0
Faculty Collection Planning	90,203.75	90,203.75	90,203.75	0
Select and Research	<u>10,460.83</u>	<u>10,460.83</u>	<u>10,460.83</u>	<u>0</u>
Totals	\$118,734.06	\$118,734.06	\$118,734.06	\$ 0

a. Library Staff Collection Planning

Various members of the library staff are tasked with collection planning as a collateral duty. The library collection is divided into 27 subject areas, such as economics and operations research, to support the school curriculum. The collection planners review the journals and catalogs for the subject areas they are assigned to find selections the library may want to purchase. They fill out green order-form cards for those titles chosen. The forms are then forwarded to NPS faculty members for screening. To receive adequate coverage, each of the 27 subject areas should average one hour of collection planning time each week.

The salaries of the collection planners are estimated to average at the GS-9 level. The total estimated annual cost for library staff collection planning efforts is \$18,069.48. This cost is not applicable to an approval plan because the vendor performs this function as a part of his literature review.

b. Faculty Collection Planning

Dudley Knox Library has a library council which is partially made up of departmental faculty members. These 13 faculty members serve a liaison function between the library and the other faculty members. In addition, they coordinate the book collection efforts of their department.

To determine the extent of faculty involvement in and feelings about book collection development at Dudley Knox Library, the library council members were surveyed. Results were obtained from eight of the 13 members, and are presented below.

(1) Question 1. How many hours per week do faculty members in your department spend reviewing literature for library book collection development?

Purpose: The purpose of this question is to provide the amount of time the faculty spends on collection development efforts so that it may be factored into the cost model.

Response: The responses ranged from one-half hour per week to 30 hours per week. The average of all

responses was six and one-quarter hours per week. When extrapolated out for all 13 departments, the NPS faculty is estimated to spend 81.25 hours per week conducting collection planning efforts. The total annual estimated cost for faculty member collection planning is \$90,203.75. As was mentioned previously, this is an average cost, which is relevant to the overall efficiency of the process.

This cost is not applicable to approval plans since the vendor performs this function as a part of his literature review. Any time a faculty member would spend researching book selections would now be incidental to collection planning purposes. This time would now, in most cases, be incurred for course materials or special interest purposes.

(2) Question 2. How many green book order cards do you receive from the library in an average week?

Purpose: The purpose of this question was to determine about how much output was received from the library collection planning efforts.

Results: The responses ranged from a low of one to a high of 50. The average of all responses was ten. When extrapolated out for all departments, the NPS faculty received from the library collection planners a cumulative average of about 130 green order cards per week. This averages 4.8 green order cards per subject area.

(3) Question 3. How would you characterize the entire book collection development effort at Dudley Knox Library?

Purpose: To determine the level of satisfaction the library council members felt towards book collection efforts.

Results: Three faculty members rated the book collection development efforts good (37.5 percent), three rated the efforts adequate (37.5 percent), and two rated the efforts poor (25 percent).

(4) Question 4. How would you feel if the library set up an approval plan to do the book collection development effort at Dudley Knox Library?

Purpose: To determine library council member receptiveness to a library approval plan.

Results: Six faculty members thought an approval plan was a good idea (75 percent). The other two did not care one way or the other (25 percent).

c. Library Acquisition Staff Selection and Research

Since insufficient funds are available to purchase all the scholarly works everyone would like to have in the library, the library acquisition staff must decide which of the recommended selections actually get purchased. This selection process and the time required to verify the particulars of the purchase make up this cost element.

All selections are made by the book acquisition librarian. This process averages three minutes per title. Some of these selections are easier to research than others. The easy selections can be researched in about 20 minutes by the book-acquisition clerk. The harder ones take an average of 30 minutes by the book-acquisition librarian. Five of every six books are easy to research. The total annual estimated cost for this function is \$10,460.83.

This cost is not applicable to approval plans. With an approval plan, selections are not made by the library-acquisition staff and no research is required.

3. Order and Follow-up Costs

Order and follow-up costs are those costs necessary to place a book on order and ensure it is received by the library. Five cost elements are identified as order and follow-up costs. They are:

- RLIN input costs,
- RLIN order-documentation costs,
- Firm order-placement costs,
- Obligation document-input costs, and
- Claiming and canceling costs.

The applicability of these cost elements varies widely by purchasing method used, and will be addressed within each individual cost element.

Total order and follow-up costs are shown in Table

3.

TABLE 3
ORDER AND FOLLOW-UP COSTS

	<u>Method of Ordering</u>			
	FEDLINK	Local Purchase Office	Delegated BPA	Approval Plan
RLIN Input Costs	\$ 4,797.92	\$ 4,797.92	\$ 4,797.92	\$ 0
RLIN Documenta- tion Costs	5,731.25	4,956.25	4,956.25	0
Order Placement Costs	8.22	43,870.42	7,963.34	197.34
Obligation Document Costs	11.25	1,875.00	1,875.00	270.00
Claiming & Canceling Costs	<u>2,671.04</u>	<u>5,342.08</u>	<u>1,335.52</u>	<u>0</u>
Totals	\$13,219.68	\$60,841.67	\$20,928.03	\$467.34

a. RLIN Input Costs

Research Libraries Information Network (RLIN) is an on-line collection of computer programs supporting multiple library functions. The system is primarily used for acquisitions, bibliographic searching and cataloging. Dudley Knox Library uses RLIN to produce order documents and to track book orders until received. The RLIN system is compensated for its services based on the number of entries into the system and the number of output items (i.e., order

cards) requested by the library. The costs are accumulated and paid on a lump-sum basis to RLIN periodically.

RLIN input costs are those costs directly related to placing an order in the RLIN system. Some orders are easier to place on RLIN than others. The easy orders, which are five of every six orders, can be completed in an average of ten minutes by the acquisitions clerk. The remaining orders require creation of new data information in the RLIN system and must be accomplished by the book acquisition librarian. It takes an average of 20 minutes to input these records.

The total estimated annual cost to input records on RLIN is \$4797.92. This cost is applicable to all ordering methods except approval plans. With an approval plan, no record is established until receipt and acceptance of the book.

b. RLIN Order Documentation Costs

Three different documentation costs exist when creating a record. Each entry into the RLIN system costs 71.4 cents, and it takes an average of 1.25 entries to establish an order on RLIN. The total annual cost to establish records on RLIN is \$2231.25.

Obtaining the forms used to place the orders is another RLIN cost. Each order form costs 31 cents, making the total annual cost for order forms \$775.00.

The third RLIN documentation cost is report costs. Reports help the acquisition librarian track the progress of book orders. Reports cost an average of \$1.09 per book, for a total annual report cost of \$2725.00.

All three costs are necessary when using FEDLINK, for a total combined annual cost of \$5731.25. When using a delegated BPA or the local purchasing office, the actual order is not placed by the order forms, so that cost is avoided. The total annual RLIN documentation costs for these two ordering methods is \$4956.25. No RLIN documentation costs apply to an approval plan since no orders are input until books are received.

c. Firm Order Placement Cost

Firm order placement costs are the government-required administrative costs of placing an order. The costs are different for each method of ordering.

(1) FEDLINK. The only documents required to order books using FEDLINK are one local purchasing office document and one entry in the library budget records. The total annual cost using FEDLINK is \$8.22.

(2) Local Purchasing Office. When using the local purchasing office, three different costs apply. The first is the cost to the local purchasing office to place the order. These costs are not tracked by the NPS purchasing office on an average cost or marginal cost basis. To determine a cost for this element, the researcher

contacted Naval Supply Center San Diego's Long Beach Small Purchase Office Detachment. This office is allocated operating funds based on the number of contract actions it awards. Long Beach is paid \$17.00 for every line item costing less than \$2500 it places on order, regardless of order method. [Ref. 27]

Since a firm order price is required for every book, each book is a line item. If the Long Beach Small Purchase Office was making the purchases, they would be reimbursed \$42,500.00. Since no costs are available for the local small purchase office, the cost for the Long Beach Office is used as a proxy.

The second administrative cost of using the local purchasing office is the cost to fill out the paperwork required for the local purchasing office to accept the order. Each order (of 15 books) takes the acquisition clerk one hour to fill out. The total annual cost to fill out the required purchase request paperwork is \$1265.00.

The third cost of using the local purchasing office is the cost to maintain the library budget records. For every library order it takes the acquisition clerk five minutes to record the entry in these records, for a total cost of \$105.42.

The total firm order placement costs to use the local purchasing office is \$43,870.42.

(3) Delegated BPA Call Authority. When purchasing by delegated BPA call authority, the local purchasing office is no longer placing the order with the vendor. The library must now call up the vendor, obtain firm price quotes, and maintain a BPA call log. It takes the book acquisition librarian ten minutes per book to get a firm price. This costs the library \$6487.50.

The acquisition clerk must record each order in the BPA call log. This takes an average of five minutes per order for a total cost of \$105.42. The cost to fill out the paperwork required of the local purchasing office is still relevant, since this is the document the comptroller uses to establish an obligation on the official accounting records. The cost to fill out the library budget records still exists when using delegated BPA call authority.

The total estimated firm order cost using delegated BPA call authority is \$7963.34.

(4) Approval Plan. The same costs that are relevant for FEDLINK also apply to an approval plan. An approval plan should be set up so that books are shipped from the vendor on a pre-determined schedule. If shipments are received twice each month, then 24 local purchasing office documents and 24 library budget record entries will need to be made. The total annual cost for required government paperwork is \$197.34.

d. Obligation Document Input Costs

Every time an order is placed, an obligation needs to be created in the official accounting records. The comptroller department places these obligations. For 1989, the average cost to establish that obligation was \$11.25. [Ref. 28]

When using FEDLINK, all funds are obligated at the beginning of the fiscal year. Since only one obligation document is created, the total annual cost for this activity using FEDLINK is \$11.25.

When using either the local purchasing office or a delegated BPA call authority, the average order size is 15 books, so 166.67 obligations would be established each year for a total cost of \$1875.00.

There would be 24 shipments to the library using an approval plan. Each shipment would require an obligation document. A total of 24 obligations would be established for a total cost of \$270.00.

e. Claiming and Canceling Costs

Claiming is the process of following up on a book when it is not received within a reasonable time. Four costs are associated with claiming and canceling book orders.

The first cost is the time of the book acquisition librarian to resolve late book orders. The second cost is the document cost RLIN charges for

automatically-generated claim forms. These forms are provided after a book has been on order for 90 days, 180 days and 270 days. The third cost is the documentation cost RLIN charges for cancellation forms. Cancellation forms are automatically provided when a book has been on order for one year. The fourth is the cost of RLIN system entry fees.

These costs are different for each purchasing method. Re-order costs are not considered because by the time most books are canceled, the funds used to buy them have expired and cannot be used.

(1) FEDLINK. Using the current FEDLINK system, the acquisition librarian spends an average of three hours each week claiming and canceling book orders for a cost of \$2428.92. RLIN automatically generates ten claim forms each week for a total annual cost of \$78.00. RLIN also automatically generates two cancellation forms each week. The annual cost for these forms is \$15.60. Four book orders are cancelled every week under the current FEDLINK system, causing \$148.52 in annual RLIN entry fees. Total annual claiming and canceling fees using FEDLINK are estimated at \$2671.04.

(2) Local Purchasing Office. Local purchasing offices often do not go to the best source for a book, increasing the number of claims and cancellations. In addition, it takes more time for an order to be placed than when using FEDLINK, meaning more selections will be

unavailable when requested. It is estimated that all claiming and cancellation costs would double by using the local purchasing office for standard book orders, for a total estimated annual cost of \$5342.08.

(3) Delegated BPA Call Authority. FEDLINK is currently limited to four book vendors, and none of them is a specialist in providing graduate-level books. The BPA vendors, however, are. Because the library would be able to select the best vendor for the purchase under delegated BPA call authority, the claiming and canceling costs across the board are estimated to be one-half as much as when using FEDLINK, for a total estimated annual cost of \$1335.52.

(4) Approval Plan. Since no orders are established prior to receipt of books when using an approval plan, there are no claiming and canceling costs.

4. Receiving and Cataloging Costs

Receiving and cataloging costs are those expenses which occur from the time a book arrives at the school until the book is placed on the shelf for the use of the library patron. Five cost elements are identified as receiving and cataloging costs. They are:

- Library receiving costs,
- Cost to review approval plan books,
- Cost to return rejected approval plan books,
- Invoice certification costs, and
- Cataloging costs.

Total receiving and cataloging costs are shown in Table 4.

TABLE 4
RECEIVING AND CATALOGING COSTS
Method of Ordering

	FEDLINK	Local Purchase Office	Delegated BPA	Approval Plan
Library Receiving Costs	\$ 4,947.50	\$ 6,528.75	\$ 6,528.75	\$ 6,975.00
Review Books	0	0	0	6,487.50
Return Books	0	0	0	509.16
Invoice Certifica tion Costs	0	13,333.33	13,333.33	480.00
Cataloging Costs	<u>36,930.00</u>	<u>36,930.00</u>	<u>36,930.00</u>	<u>36,930.00</u>
Totals	\$41,877.50	\$56,792.08	\$56,792.08	\$51,381.66

a. Library Receiving Costs

These are the costs to: (1) unpack the book from the wrapping materials, (2) receive the book on the RLIN system, and (3) process any required receiving paperwork.

(1) FEDLINK. There are two costs to the receiving process when using FEDLINK. The first cost is the

RLIN entry fee. It costs 71.4 cents to enter the RLIN system to receive a book. It seldom takes more than one entry to process the receipt for a total annual cost of \$1785.00.

The second cost is the labor necessary to process the receipt at the library. This cost includes the time to unpackage the book and process the receipt on RLIN. There is no receipt paperwork to process outside the library when using FEDLINK. On average, this takes the acquisition clerk ten minutes per book, for a total annual cost of \$3162.50.

The total annual estimated receiving cost to the library using FEDLINK is \$4947.50.

(2) Delegated BPA and Local Purchasing Office.

All the receiving costs to the library using FEDLINK also apply to these two methods of purchasing books. In addition, receipt paperwork for every book received must be verified and forwarded to the invoice certification office so the vendor can be paid. It takes the acquisition clerk an additional five minutes on average per book to process this paperwork. The additional cost to process this paperwork is \$1581.25, making the total annual cost when using these two purchasing methods \$6528.75.

(3) Approval Plan. The receiving costs for an approval plan are somewhat different. The library places the books in the RLIN system at the time of receipt. This

saves an entry into the system since the since the record can be established and received all in the same system entry. It still requires an average of 1.25 entries to establish the record, for an annual system entry cost of \$2231.25.

The time involved in receiving books under an approval plan is quite different. Since books are received twice each month, the costs to unpackage books is reduced. When books are received on approval plan, they are almost always on the RLIN system, so the acquisition clerk can input all the order records. There is also less receiving paperwork to handle. It would take an acquisition clerk an average of 15 minutes to process an approval plan receipt. The labor costs required to receive a book under an approval plan are \$4743.75.

The total estimated annual cost to receive books under an approval plan is \$6975.00.

b. Costs to Review Approval-Plan Books

The second cost element is only applicable to approval-plan purchases. Since books are not ordered directly under an approval plan, they must be reviewed by the library to ensure they are appropriate for the library collection. It is estimated that it would take the acquisition librarian an average of ten minutes to properly review a book. The total cost for this function is \$6487.50.

c. Cost to Return Rejected Approval-Plan Books

The third cost element in this section is also applicable only to approval plans. When reviewing approval plan books upon receipt, the library staff estimates that about five percent will be returned to the vendor as not suitable for the library collection. The average receipt will be 104 books if there are 24 shipments each year. An average of five books will need to be mailed back to the vendor from each shipment. Three costs are required to ship books back to the vendor.

The first is the labor to properly package the books. It is estimated to take the acquisition clerk 30 minutes to prepare a package for shipment, for a total annual labor cost of \$91.08.

The second cost is for the packaging materials. The books must be securely packaged to ensure they are not damaged in shipment. To provide the proper packaging should cost no more than \$7 per shipment for a total annual cost of \$168.00.

The third cost is the postage. The library staff estimates postage costs an average of \$2 per book, or \$10 per shipment. The total annual cost for postage is \$250.08.

The total annual estimated cost to return books received on an approval plan is \$509.16.

d. Invoice Certification Costs

Invoice certification is the process of matching signed receipt documents with vendor invoices and processing them up to the point of payment. Actual vendor payment is not performed at NPS and is not considered as a cost for purposes of this study.

Invoice certification costs are different for each purchasing method and will be identified separately. They are estimated at \$20.00 for each invoice processed. [Ref. 29]

(1) FEDLINK. Funds are transferred to FEDLINK at the beginning of the fiscal year and automatically expended in the official accounting records. There are no invoices to certify when using FEDLINK. There are, therefore, no invoice certification costs when using FEDLINK.

(2) Delegated BPA and Local Purchasing Office. It was previously estimated that each order would average 15 books, for 166.67 book orders each year. Furthermore, book orders of this size are seldom shipped all at once. It is estimated that each order will average four separate receipts and invoices. At \$20.00 per invoice, the total invoice certification cost using either of these two purchasing methods is \$13,333.33.

(3) Approval Plan. The approval plan has 24 shipments each year. All books are received in the single

shipment so there is only one receipt and one invoice for each shipment. The total annual invoice certification cost using an approval plan is \$480.00.

e. Cataloging Costs

Cataloging is the process of establishing library records for a new purchase. It entails: (1) establishing card or electronic cataloging information, (2) placing that information in the files, and (3) physically preparing the books for placement on the shelves.

Some cataloging efforts are easier than others. When a suitable record has been established by another library, the process of copying and using that record is relatively easy. If there is no usable record available, the process of creating a record is more time consuming and takes more highly-trained personnel. A recent study estimated it costs a library \$12.00 to copy an existing cataloging entry and \$48.00 to create an original cataloging record. [Ref. 30:p. 339] There is no reason to believe the numbers would be appreciably different at Dudley Knox Library.

By reviewing Dudley Knox Library cataloging records for the six month period April 1989-September 1989, 1919 of 2079 or 92.3 percent of all cataloging was accomplished by copying existing cataloging records. The total annual estimated cost to catalog 2500 books at Dudley

Knox Library is \$36,930.00. This cost does not vary between the various book purchasing methods.

C. SUMMARY

This chapter has presented the costs of purchasing a book to the Naval Postgraduate School. This presentation was inclusive of all costs identified as significant by the interviewees listed in Appendix A.

The data were designed with two purposes in mind. First, the data are designed to provide a least-cost model for NPS to evaluate and potentially increase the overall efficiency of the book-buying process.

Secondly, the data provide the total cost of the book-buying process to the school by purchasing method. Purchasing cost data are seldom inclusive of all the costs involved in the purchase. The data presented in this chapter are an effort to provide that data for book buying. The process could also be used as a base for further total cost purchasing studies.

The total cost by purchasing method is presented in Table 5. The data presented in this chapter along with the benefits of the various purchasing methods will be analyzed in Chapter VI.

TABLE 5

TOTAL COSTS

Method of Ordering

	FEDLINK	Local Purchase Office	Delegated BPA	Approval Plan
Up-Front Costs	\$ 7,050.00	\$ 0	\$ 0	\$3,306.93
Pre-order Costs	118,734.06	118,734.06	118,734.06	0
Order and Follow-up Costs	13,219.68	60,841.67	20,928.03	467.34
Receiving and Cataloging Costs	<u>41,877.50</u>	<u>56,792.08</u>	<u>56,792.08</u>	<u>51,381.66</u>
Totals	\$180,881.24	\$236,367.81	\$196,454.17	\$55,155.93

VI. ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS

A. ANALYSIS

1. Transaction Costs

The data in Table 5 shows that for all purchasing methods other than the approval plan, the cost of the book is less than 50 percent of the total costs to purchase the book. These costs are the transaction costs necessary to identify, purchase and receive the books. The data show that the transaction costs are much higher in the normal government purchasing methods than in the more traditional civilian-purchasing method, the approval plan.

Civilian libraries and book publishers have developed very specialized channels of distribution. They have, through competition, reduced the transaction costs by performing collection-planning functions on a large scale for multiple libraries covering a large part of the publishing industry. Because the vendors perform collection-planning functions on a large scale, they can cover the sources of publishing information more efficiently than can the individual libraries.

The vendors are able to buy in bulk from publishers to meet the needs of their customers, the libraries. This allows the publishers to provide larger discounts from list price than would be available to the

individual library. Some of these savings are usually passed on to the individual approval-plan library.

Civilian libraries also traditionally have long-term relationships with their vendors. These long-term relationships increase stability of the book-buying function. The vendor and the library are able to become comfortable with their working relationship, knowing the relationship will continue as long as both parties are happy with the agreement.

The potential for long-term relationships exists in Department of Defense libraries. Contractual arrangements exist which can provide for continuation of a current contract for up to five years. While these contracts do take more up-front effort than other purchasing methods, they should be considered when they are more efficient in the long-run.

By using a vendor and an approval plan, the civilian library is able to substantially reduce its transaction costs of buying books. The U.S. Government should look more closely at the total transaction costs involved in a purchase than it currently does. Models like the one used in this study can be adapted to almost any repetitive purchasing situation.

Whenever possible, steps should be taken to imitate the purchasing methods used in the civilian sector. The forces of a market economy have already dictated those

methods which reduce transaction costs. Firms not adopting these efficient methods of purchasing hurt their competitive positions with respect to the rest of the industry.

The area where using civilian sector purchasing methods appears to have the most immediate promise is in buying items already sold in large quantities in the civilian sector.

2. The Least Cost Purchasing Method

The data clearly show that using an approval plan is the least costly method of procuring standard-order books for Dudley Knox Library. The area where this shows up most closely is in the pre-order costs. The approval plan totally eliminates pre-order costs.

The effort required to select books and prepare the selections for ordering account for more than one-half the total ordering cost for all purchasing methods except approval plans. This process, as currently performed, is very inefficient. There are three layers of selection and no guarantee that the best books will be purchased because funding is insufficient to purchase all requests.

If an approval plan is set up, NPS would be able to free up these resources to more productive uses. The collection-planning function could be transferred to the more efficient approval-plan vendor. Books required for the library collection are less likely to go out of print prior to receipt when an approval plan is used. The books are

also received sooner under an approval plan. In addition, the library would probably get the books less expensively than under current purchasing methods.

All these advantages mean the library will be better able to serve the library patron when their books are ordered through an approval plan.

B. CONCLUSIONS

This research has led to several conclusions.

- Conclusion 1. The approval plan is the least costly method for Dudley Knox Library to use to purchase standard order books.

Significant savings are available in the pre-order stage of library purchasing when using an approval plan. These savings will result in better purchases, better utilization of resources, and better service to the library patron.

- Conclusion 2. The Department of Defense can reduce its transaction costs by making better use of commercial buying practices when buying repetitive purchases and items sold in substantial quantities in the private sector.

Commercial products and other off-the-shelf purchases lend themselves quite easily to commercial purchasing methods. The data presented specifically supports the conclusion that using a commercial purchasing method (i.e., approval plans) reduces the transaction costs. The basic methodology used in this study could be adapted to other cases as well.

- Conclusion 3. Funding for books at the Naval Postgraduate School is not as stable as funding at civilian university libraries.

The large variation in funds available for book purchasing at Dudley Knox Library has had a negative impact on the school's ability to service its patrons. Fiscal Year 1989 was a dismal year for book buying at Dudley Knox Library. As a result, many books requested by faculty members were not bought, and it is now too late to purchase them. There are now more holes in the collection caused by inadequate funding of the book budget.

C. RECOMMENDATIONS

- Recommendation 1. Dudley Knox Library should set up an approval plan for the purchase of standard-order books.

An approval plan will provide a better collection, faster receipt of books, and a better level of service to the library patron. In addition, the Naval Postgraduate School will be able to use existing resources more efficiently.

- Recommendation 2. The Naval Postgraduate School should stabilize the materials budget at Dudley Knox Library, and provide that funding at the beginning of the fiscal year.

The primary mission of the school is to provide a complete graduate education to its students. Unstable funding hurts the library's ability to provide sufficient support to its patrons in their research efforts. Stable, up-front funding of Dudley Knox Library would allow the library to better plan its purchases to meet the needs of students and faculty.

D. REVIEW OF RESEARCH QUESTIONS

A summarized response to each research question, primary and secondary, is provided below:

- Secondary Question 1. What Department of Defense authorized methods for procuring monographic publications are currently being used in Department of Defense libraries?

As discussed in Chapter III, Department of Defense libraries can use the local purchasing office to purchase its books. It can obtain a delegated BPA call authority to purchase books directly from the vendors. The library can use the Library of Congress FEDLINK system to purchase its books. And, finally, it can contract with a vendor through the purchasing office to set up an approval plan to supply its books.

- Secondary Question 2. How do the current procurement practices of Dudley Knox Library compare with those of the University of California Santa Cruz?

Chapters III and IV provided the answers to this question. The University of California Santa Cruz uses approval plans to purchase over 60 percent of its books, with even more of its purchases going to these vendors as direct orders. Dudley Knox Library, on the other hand, directly orders almost all of its books from vendors using the Library of Congress FEDLINK program.

- Secondary Question 3. What costs and benefits should be considered when conducting a least cost analysis for the procurement of monographic materials at Dudley Knox Library?

As discussed in Chapter V, up-front costs, pre-order costs, order and follow-up costs and receiving and cataloging costs are relevant costs to this study. The benefits of using an approval plan over the other authorized purchasing methods was discussed in Chapters III and IV. Essentially improved collection planning, reduced book cost and quicker receipt of books are some of the more significant benefits that should be considered when using approval plans.

- Secondary Question 4. What are the costs and benefits associated with each Department of Defense authorized method of procuring monographic publications?

Chapter V provides the costs of each purchasing method. Chapter III provides the benefits of each purchasing method in relation to the others. Those costs are summarized in Table 5 of Chapter V. All purchasing methods other than approval plans are costly to manage, and take longer to acquire books. The local purchasing office is the most costly method to purchase books, while the approval plan is the least costly.

- Primary Research Question. What is the most cost-effective procurement method for Dudley Knox Library to use to purchase monographic publications?

The information to answer this question is provided in Chapter V. An approval plan is the most cost effective procurement method for Dudley Knox Library to use to purchase monographic publications. A properly set-up

approval plan also has more benefits than any other purchasing method.

APPENDIX A

INTERVIEWEES

1. Anderson, P.
Cataloging Librarian
Naval Postgraduate School
Monterey, California
25 April 1990
2. Bailey, S.
Officer-in-Charge
Small Purchase Office
Naval Supply Center, San Diego
Long Beach Detachment
Long Beach, California
20 April 1990
3. Boyd, B.
Supply Officer
Naval Postgraduate School
Monterey, California
Various
4. Carrick, P.
Associate Professor
Naval Postgraduate School
Monterey, California
23 April 1990
5. Chang, C.
Professor
Naval Postgraduate School
Monterey, California
20 April 1990
6. Dahl, H.
Professor
Naval Postgraduate School
Monterey, California
20 April 1990
7. Eagle, J.
Associate Professor
Naval Postgraduate School
Monterey, California
23 April 1990

8. Fabbrey, M.
Accounting Department
University of California Santa Cruz
Santa Cruz, California
7 February 1990
9. Hawkins, A.
Comptroller Department
Naval Postgraduate School
Monterey, California
24 April 1990
10. Healey, J.
Associate Professor
Naval Postgraduate School
Monterey, California
20 April 1990
11. Jay, B.
Deputy Comptroller
Naval Postgraduate School
Monterey, California
20 April 1990
12. Joshi, J.
Assistant Professor
Naval Postgraduate School
Monterey, California
23 April 1990
13. Kuntsal, M.
Acquisition Librarian
Naval Postgraduate School
Monterey, California
Various
14. Linser, S.
Receipt Control Branch
Supply Department
Naval Postgraduate School
Monterey, California
26 April 1990
15. Lundy, G.
Assistant Professor
Naval Postgraduate School
Monterey, California
20 April 1990

16. Mokrzycki, K.
Library Purchasing Supervisor
University of California Santa Cruz
Santa Cruz, California
7 February 1990
17. Moore, C.
Comptroller Department
Naval Postgraduate School
Monterey, California
23 April 1990
18. Taylor, M.
Subject Bibliographer
University of California Santa Cruz
Santa Cruz, California
31 January 1990
19. Winterford, D.
Adjunct Professor
Naval Postgraduate School
Monterey, California
20 April 1990

APPENDIX B

CALCULATIONS

1. Preliminary

a. Hourly Salary of an Associate Professor:

Average annual salary of \$41,000 obtained from NPS Comptroller Department. Assumed four weeks per year for leave and sick leave for a total of 48 productive weeks each year.

$$\frac{\$41,000 \text{ per year}}{48 \text{ weeks} \times 40 \text{ hours per week}} = \$21.35 \text{ per hour}$$

b. Hourly Salary of a GS-11 Acquisition Librarian:

The actual salary of the incumbent in the position is used with the same productivity assumptions as before.

$$\frac{\$29,891 \text{ per year}}{48 \text{ weeks} \times 40 \text{ hours per week}} = \$15.57 \text{ per hour}$$

c. Hourly Salary of a GS-4 Acquisitions Clerk:

The actual salary of the incumbent in the position is used with the same productivity assumptions as before.

$$\frac{\$14,573 \text{ per year}}{48 \text{ weeks} \times 40 \text{ hours per week}} = \$7.59 \text{ per hour}$$

d. Hourly Salary of a GS-9 Collection Planner:

The actual salary of one of the incumbents in the position is used with the same productivity assumptions as before.

$$\frac{\$24,705 \text{ per year}}{48 \text{ weeks} \times 40 \text{ hours per week}} = \$12.87 \text{ per hour}$$

2. Approval Plan Set-up Costs

a. 120 hours Acquisition Librarian X \$15.57 per hour
= \$1868.40.

b. 3 hours each X 13 Departmental Library Liaison
Faculty members X \$21.35 per hour = \$832.65.

c. Total Approval Plan Set-up costs:

$$\$1868.40 + \$832.65 = \$2701.05$$

3. Approval Plan Yearly Maintenance Cost

a. 30 hours Acquisition Librarian X \$15.57 per hour
= \$467.10.

b. One-half hour each X 13 Departmental Library
Liaison Faculty members X \$21.35 per hour = \$138.78.

c. Total Approval Plan Yearly Maintenance Cost:

$$\$467.10 + \$138.78 = \$605.88$$

4. FEDLINK Delivery Order Maintenance Fee

a. 2500 books ordered each year X \$47 cost per book
= \$117,500.

b. \$117,500 spent each year X 6% Administration Fee
= \$7050.

5. Library Staff Collection Planning

One hour per week X 27 subject areas X 52 weeks per
year X Collection Planner hourly salary of \$12.87 =
\$18,069.48.

6. Faculty Collection Planning

6.25 hours per week per Department X 13 Departments X
52 weeks per year X Associate Professor Hourly Salary of
\$21.35 = \$90,203.75.

7. Library Acquisition Staff Selection and Research

a. $1/20$ hour per selection X 2,500 selections X Acquisition Librarian hourly salary of \$15.57 = \$1946.25.

b. $5/6$ X 2500 = 2083.33 books can be researched by Acquisition Clerk X $1/3$ hour per book X hourly rate of \$7.59 = \$5270.83.

c. $1/6$ X 2500 = 416.67 books must be researched by Acquisition Librarian X $1/2$ hour per book X hourly rate of \$15.57 = \$3243.75.

d. Total Library Selection and Research Costs:

$$\$1946.25 + \$5270.83 + \$3243.75 = \$10,460.83$$

8. RLIN Input Costs

a. $5/6$ X 2500 books X $1/6$ hour per book X Acquisition Clerk time hourly rate of \$7.59 = \$2635.42.

b. $1/6$ X 2500 books X $1/3$ hour per book X Acquisition Librarian hourly rate of \$15.57 = \$2162.50.

c. Total RLIN Input Costs:

$$\$2635.42 + \$2162.50 = \$4797.92$$

9. RLIN Order Documentation Costs

a. 71.4 cents per entry X 1.25 entries to establish a record X 2500 records = \$2231.25.

b. 2500 order forms X 31 cents per form = \$775.00.

c. 2500 books X 1.09 per book = \$2725.00

d. FEDLINK Costs:

$$\$2231.25 + \$775.00 + \$2725.00 = \$5731.25$$

e. Local Purchase Office and Delegated BPA Costs:

$$\$2231.25 + \$2725.00 = \$4956.25$$

10. Firm Order Placement Costs

a. FEDLINK:

One local purchase office document X 1 hour per document X Acquisition Clerk hourly rate of \$7.59 = \$7.59.

One library budget record entry X 1/12 hour per entry X Acquisition Clerk hourly rate of \$7.59 = \$.63.

$$\$7.59 + \$.63 = \$8.22$$

b. Local Purchase Office:

2500 line items X \$17.00 per line item = \$42,500.00.

2500 books ordered/15 books per order X 1 hour to fill out required purchasing paperwork X Acquisition Clerk hourly rate of \$7.59 = \$1265.00.

One library budget record entry X 1/12 hour per entry X 2500/15 entries X Acquisition Clerk hourly rate of \$7.59 = \$105.42.

$$\$42,500 + \$1265.00 + \$105.42 = \$43,870.42$$

c. Delegated BPA:

1/6 hour per book X 2500 books X Acquisition Librarian hourly rate of \$15.57 = \$6487.50.

Purchasing paperwork as above = \$1265.00.

Library budget record entry as above = \$105.42.

One BPA call log entry per order X 2500/15 orders X 1/12 hour per order X Acquisition Clerk hourly rate of \$7.59 = \$105.42.

$$\$6487.50 + \$1265.00 + \$105.42 + \$105.42 = \$7963.34$$

d. Approval Plan:

One library budget record entry per order X 24 orders X 1/12 hour per order X Acquisition Clerk hourly rate of \$7.59 = \$15.18.

One local purchase document per order X 24 orders X one hour per document X Acquisition Clerk hourly rate of \$7.59 = \$182.16.

$$\$15.18 + \$182.16 = \$197.34$$

11. Obligation Document Input Cost

a. FEDLINK:

$$1 \text{ obligation} \times \$11.25 \text{ per obligation} = \$11.25.$$

b. Local Purchase Office/Delegated BPA:

$$2500/15 \text{ obligation documents} \times \$11.25 \text{ per document} = \$1875.00.$$

c. Approval Plan:

$$24 \text{ obligations} \times \$11.25 \text{ per obligation} = \$270.00.$$

12. Claiming and Canceling Costs

a. FEDLINK:

$$3 \text{ hours per week} \times 52 \text{ weeks} \times \text{Acquisition Librarian hourly rate of } \$15.57 = \$2428.92.$$

$$10 \text{ claim forms per week} \times 15 \text{ cents per form} \times 52 \text{ weeks per year} = \$78.00.$$

$$2 \text{ cancellation forms per week} \times 15 \text{ cents per form} \times 52 \text{ weeks per year} = \$15.60.$$

$$\text{RLIN cancellation entry fees } 4 \text{ per week} \times 52 \text{ weeks per year} \times 71.4 \text{ cents per system entry} = \$148.52.$$

$$\$2428.92 + \$78.00 + \$15.60 + \$148.52 = \$2671.04$$

b. Local Purchase Office:

$$\$2671.04 \times 2 = \$5342.08$$

c. Delegated BPA:

$$\$2671.04/2 = \$1335.52$$

13. Library Receiving Costs

a. FEDLINK:

$$2500 \text{ receipts} \times 71.4 \text{ cents per receipt on RLIN} = \$1785.00.$$

1/6 hour per receipt X 2500 receipts X
Acquisition Clerk hourly rate of \$7.59 = \$3162.50.

$$\$1785.00 + \$3162.50 = \$4947.50$$

b. Local Purchase Office and Delegated BPA:

RLIN entry fees as above = \$1785.00.

Receiving costs as above = \$3162.50.

1/12 hour per book X 2500 books X Acquisition
Clerk hourly rate of \$7.59 = \$1581.25.

$$\$1785.00 + \$3162.50 + \$1581.25 = \$6528.75$$

c. Approval Plan:

2500 books X 1.25 RLIN entries per book X 71.4
cents per entry = \$2231.25.

1/4 hour per book X 2500 books X Acquisition
Clerk hourly rate of \$7.59 = \$4743.75.

$$\$2231.25 + \$4743.75 = \$6975.00$$

14. Costs to Review Approval Plan Books

1/6 hour per book X 2500 books X Acquisition
Librarian hourly rate of \$15.57 = \$6487.50.

15. Cost to Return Rejected Approval Plan Books

2500 books/24 shipments per year = 104.17 books per
shipment.

104.17 books per shipment X 5% rejection rate = 5.21
books rejected per shipment.

1/2 hour per shipment to package books X 24 shipments
per year X Acquisition Clerk hourly rate of \$7.59 = \$91.08.

24 shipments per year X \$7.00 per shipment for
packaging materials = \$168.00.

24 shipments X \$2.00 per book X 5.21 books per
shipment = \$250.08.

$$\$91.08 + \$168.00 + \$250.08 = \$509.16$$

16. Invoice Certification Costs

a. Local Purchasing Office and Delegated BPA:

\$20.00 per invoice X 2500/15 orders per year X 4
invoices per order = \$13,333.33.

b. Approval Plan:

\$20.00 per invoice X 24 invoices per year =
\$480.00.

17. Cataloging Costs

1919 copy entries/2079 total entries = 92.3% of all
entries copied.

92.3% X 2500 books X \$12.00 per book for a copy entry
= \$27,690.00.

7.7% X 2500 books X \$48.00 per book for an original
entry = \$9240.00.

\$27,690.00 + \$9240.00 = \$36,930.00

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