AD-A075 488 NAVAL POSTGRADUATE SCHOOL MONTEREY CA F/G 5/1
AN ANALYSIS OF THE RELATIONSHIP OF COAST GUARD ZERO BASE BUDGET--ETC(U)
SEP 79 C L MILLER

UNCLASSIFIED NI

1 OF 2
AD-
A075488



LEVEL II

(2)

NAVAL POSTGRADUATE SCHOOL

Monterey, California

AD A075488



DDC
RECEIVED
OCT 26 1979
E

(9) Master's THESIS,

(6) AN ANALYSIS OF THE RELATIONSHIP OF COAST GUARD ZERO BASE BUDGETING AND PLANNING, PROGRAMMING AND BUDGETING.

by

(10) Charles L. Miller, III

(11) September 1979

(12) 100

Thesis Advisor: K. Euske

Approved for public release; distribution unlimited.

DDC FILE COPY

251 450 mt

79 10 19 072

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) An Analysis of the Relationship of Coast Guard Zero Base Budgeting and Planning, Programming and Budgeting		5. TYPE OF REPORT & PERIOD COVERED Master's Thesis; September 1979 6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Charles L. Miller III		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Naval Postgraduate School Monterey, California 93940		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Naval Postgraduate School Monterey, California 93940		12. REPORT DATE September 1979 13. NUMBER OF PAGES 99
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Coast Guard Zero Base Budgeting

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The purpose of this study is to examine zero base budgeting and its affect on the Coast Guard. This study is divided into four chapters. Chapter One presents the theory and process of zero base budgeting. Chapter Two presents a summary of current Coast Guard planning, programming and budgeting process and the Coast Guard accounting system. Chapter Three presents a comparison of zero base budgeting and the Coast Guard planning,

CONT'D

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE
S/N 0102-014-6601

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

(20. ABSTRACT CONTINUED)

CONT

programming and budgeting. The strengths, weaknesses and support requirements of the two processes are discussed. Chapter Four presents four recommendations for the improvement of the Coast Guard planning, programming and budgeting process and accounting system to facilitate the use of zero base budgeting. The four recommendations concern reports; surrogate measures; standards; and reorganization of the Coast Guard planning, programming and budgeting process. Each recommendation contains a cost/benefit analysis and a discussion of the basic actions needed to implement the recommendations.

Accession For
NTIS GRA&I
DDC TAB
Unannounced
Justification
By
Distribution/
Availability Codes
Dist | Avail and/or special
A

Approved for public release; distribution unlimited.

An Analysis of the Relationship of Coast Guard Zero Base Budgeting and Planning, Programming and Budgeting

by

Charles L. Miller III
Lieutenant, United States Coast Guard
B.S., United States Coast Guard Academy, 1974

Submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL
September 1979

Author Charles L. Miller III

Approved by: K. J. Euske
Thesis Advisor

E. A. Fricke
Co-Advisor

Chairman, Department of Administrative Science

Dean of Information and Policy Sciences

ABSTRACT

The purpose of this study is to examine zero base budgeting and its affect on the Coast Guard. This study is divided into four chapters. Chapter One presents the theory and process of zero base budgeting. Chapter Two presents a summary of current Coast Guard planning, programming and budgeting process and the Coast Guard accounting system. Chapter Three presents a comparison of zero base budgeting and the Coast Guard planning, programming and budgeting. The strengths, weaknesses and support requirements of the two processes are discussed. Chapter Four presents four recommendations for the improvement of the Coast Guard planning, programming and budgeting process and accounting system to facilitate the use of zero base budgeting. The four recommendations concern reports; surrogate measures; standards; and reorganization of the Coast Guard planning, programming and budgeting process. Each recommendation contains a cost/benefit analysis and a discussion of the basic actions needed to implement the recommendations.

TABLE OF CONTENTS

Page

LIST OF TABLES 7

LIST OF FIGURES 8

INTRODUCTION 9

CHAPTER

I. ZERO BASE BUDGETING 11

An Overview of Zero Base Budgeting 11

Decision Units 13

Decision Packages 17

Ranking Decision Packages 22

Summary 26

II. U.S. COAST GUARD PLANNING, PROGRAMMING, BUDGETING AND OPERATION PROCESS 27

Historical Background 27

Missions 29

Coast Guard Organizational Structure 32

Coast Guard Planning, Programming and Budgeting 34

Coast Guard Planning 35

Coast Guard Programming 39

Management Responsibilities 39

Coast Guard Budgeting 41

Coast Guard Budget Structure 42

Appropriation Classification 44

Relationship Between Coast Guard Fund Distribution and Coast Guard Organization 46

Budget Process 47

Zero Base Budgeting in the Coast Guard 54

Summary 56

III. ZERO BASE BUDGETING AND COAST GUARD PLANNING, PROGRAMMING AND BUDGETING: STRENGTHS AND WEAKNESSES 57

Planning and Programming 58

Management Support 59

Zero Base Budget Preparation 62

Selection of Decision Units 64

Accounting 65

Summary 69

IV. RECOMMENDATIONS 71

Reports 74

Surrogate Measures 77

Standard Costs 80

Planning, Programming and Accounting 85

Process Installation 89

Top Management Support 89

Design 90

Time 91

Conclusion 91

BIBLIOGRAPHY 92

INITIAL DISTRIBUTION LIST 99

LIST OF TABLES

Table | Page

1. Coast Guard Internal Communications During the Coast Guard Planning, Programming and Budgeting Process 36

2. Inputs to the Planning, Programming and Budgeting Process 37

LIST OF FIGURES

Figure		Page
1.	Decision Package Formulation Process	19
2.	Ranking Process	23
3.	Budget Scheduling Chart	49
4.	Fund Distribution	66

INTRODUCTION

The purpose of this study is to examine zero base budgeting and its impact on the Coast Guard. This study provides an overview of zero base budgeting in comparison with the present Coast Guard budgeting process. The study discusses both the strengths and weaknesses of the Coast Guard budgeting process and zero base budgeting. Methods of providing information which can be used to increase the effectiveness of the zero base budgeting process are examined. However, the specific procedures for implementing these proposed changes are not explored. The operational development and implementation of the changes are topics for future studies.

This study is divided into four chapters. The first chapter is concerned with the theory and process of zero base budgeting. Included in this chapter is a discussion of the support elements that are essential to the successful operation of the process. The support element discussion includes both those support elements that are frequently dealt with in the zero base budgeting literature and support elements that are often ignored.

Chapter Two presents a summary of the Coast Guard planning, programming, budgeting and expenditure process. Beginning with the planning process it proceeds through the budgeting phase to the allocation, expenditure and recording of appropriated funds.

Chapter Three presents a comparison of zero base budgeting and the current Coast Guard planning, programming and budgeting process. Some of the topics that are discussed are the two

budgets submitted to OMB, the management structure of the Coast Guard, and the accounting system and management support. A major factor influencing the relationship between zero base budgeting and the Coast Guard process is the multi-mission capability and role that Coast Guard units occupy. The multi-mission capability is examined and related to the topics discussed.

In the fourth and final chapter methods to improve the current Coast Guard systems conformance to zero base budgeting are recommended. Included are recommendations for 1) changing the planning and programming process to a facility rather than program format, 2) an expansion or revision of the present accounting system to better identify not only the object on which funds are spent but the actual program for which the cost was incurred, 3) identification of standard program contributions and costs for resources to facilitate zero base budgeting, and 4) the use of surrogates as measures of output.

CHAPTER I

ZERO BASE BUDGETING

An Overview of Zero Base Budgeting

Zero base budgeting combines budgeting, planning, and decision making at all levels into one process to improve efficiency and reduce cost. An organization can use zero base budgeting in setting objectives, making operating decisions, and evaluating changing work loads [Pyhrr, 1975].

The zero base budgeting process has been described as a set of predetermined generalized rules that when applied are intended to create an efficient and effective budget [Pyhrr, 1975]. These predetermined general rules are not "hard and fast" procedures for utilizing a zero base budgeting process, but, rather define basic steps which should be taken to utilize the zero base budgeting process. Each application of the zero base budgeting process should be tailored, using the guidance provided by the general rules, to meet the needs of the individual organization. The general rules are as follows:

1. Develop a description of the purpose for and objective of the unit (facility).

2. Provide workload and performance measures.

3. Develop alternative methods of operation, including current operating procedures.

4. Examine the methods of operation using cost benefit analysis. A result of this examination will be the selection of the one or two alternatives, that best fit the objectives of

the organization, for further analysis.

5. Develop incremental analysis of the different alternatives including a minimum level of service and successive levels of service and costs with each level analyzed in terms of cost and output measures.

6. Specify line-item costs for each increment of service and cost [Check, 1977].

Once these rules, which are the core of the zero base budgeting process, have been operationalized for all levels of the organization a budget structure must then be established. The budget structure consists of three major elements. These three elements are:

1. Decision units
2. Decision packages
3. Ranking procedure

The first element of this strucutre is the decision unit and represents the basic element in the zero base budgeting process. Decision units are those organizational programs or activities over which managers have control or are responsible. Decision units may correspond to existing budget units or they may represent general or specific programs [Pyhrr, 1975]. Decision units are used to build the next element in the process.

The second element in the process is the decision package. Decision packages describe and define the operations of the decision units. Decision unit managers construct decision packages. A decision package includes the objective of the activity, a cost/benefit analysis, and performance measures

[Pyhrr, 1970]. Management prepares the decision package for different levels of funding which represent different levels of effort and cost for the accomplishment of the decision package objective. These levels are generally defined as the minimum level, improved level and maximum level. The purpose of the multiple levels is to give management as much decision making flexibility as possible [Pyhrr, 1975].

The third and final element of the zero base budgeting structure involves ranking of the decision packages. Zero base budgeting gives managers the opportunity to rank decision packages against one another and determine the best combination of decision packages for accomplishing the organizations objectives. The budget is then determined through the analysis of the decision packages and the different levels of funding and output. There are different methods of ranking decision packages, some of which are discussed later in this chapter.

Decision Units

This section presents a discussion of decision units which are the basic entities in the zero base budgeting process from which the budgets is prepared. Decision units must be identified and defined as a necessary step in implementing the zero base budgeting process. This step is part of the initial design of the zero base budgeting process and once completed need not be repeated in subsequent budget cycles, except to accomodate new activities or to improve the decision making usefulness of the zero base budgeting process. Decision units may be functions, programs, cost centers, organizational units or, in certain instances, line-items or appropriation items [Pyhrr, 1975].

A key consideration in selecting decision units is the organization's "responsibility structure" [Minmier, 1974]. This means that decision units should be selected to parallel the flow of responsibility for operational decision making within the organization [Pyhrr, 1975]. If managers have no control of or responsibility for an activity or program it is difficult to implement a zero base budgeting process, because no one manager or group of managers can be held accountable for the program's operation. Lack of control invites inefficiency and ineffectiveness [Minmier, 1974].

An illustration of the concept of decision units paralleling an organization's responsibility structure would be a firm that operates a chain of hardware stores each of which carries several different types of tools such as pluming tools, woodworking tools, and so forth. Decision units could variously be defined as: 1) each store including all the different types of tools sold within the store, 2) each separate type of tool provided in each store, or 3) each different type of tool aggregated across all the stores. If each store has a manager responsible for decision making within the store, then the individual stores may logically be selected as decision units. If each type of tool within the store has an identifiable manager responsible for decisions relating to the types of tools carried within the store then each type of tool within the store can be viewed as a decision unit. If management decisions affecting the types of tools sold within the stores are made system wide by identifiable managers at the organization's headquarters, then the

individual types of tools, aggregated across all the stores, would be logical decision units. The key criterion in the determination of decision units is how responsibility for resource allocation decisions is distributed.

Although the organization's responsibility structure is important there are moderating factors which influence the selection of the organization's decision units, such as size, the environment and the organization's accounting system. For example, the entire chain of hardware stores could be considered a decision unit. This classification is appropriate if the chain of hardware stores is a part of a larger company that owns and operates not only the hardware stores but also other types of businesses. Thus, size of the organization must also be considered when identifying decision units. Decisions would be made by top management affecting the decision unit identified as the chain of hardware stores owned by the company. However, the selection of hardware stores as a decision unit of the entire company does not preclude the selection of additional decision units internal to the chain of hardware stores. A subset of the chain of hardware stores, would provide control within narrower areas of management responsibility [Stonich, 1977]. A second moderating factor often affecting selection of decision units is availability of data from the organization's financial accounting and control systems [Minmier, 1974]. These systems may not provide proper or reliable information to allow the decision unit structure to parallel the flow of responsibility

in the organization. Often problems attributed to the zero base budgeting process are really the result of inadequate or improper support from the financial accounting and control systems [Minmier, 1974]. To alleviate this situation the account structure may have to be modified so that something approaching the preferred structure may become feasible at a later time.

An additional moderating factor in the selection of decision units is the environment [Pyhrr, 1975]. As the environment changes over time, often so do management responsibilities. As management responsibilities change, there may be a need to reevaluate the organization's definition of a decision unit.

Organizations analyze decision units in at least two ways. Some emphasize a basic reexamination of the objectives, activities and procedures of each decision unit before the manager is permitted to continue on to the next element in the process, the creation of decision packages. In other cases only brief examination is paid to the questioning of objectives, activities, and procedures. In the latter decision units typically reflect existing activities [Gunderson, 1977]. Time constraints, cost and available analytical skills sometimes dictate that extensive review be sacrificed and attention focused on current operations. The type of decision unit analysis emphasized is a matter to be decided by the designers and users of the zero base budgeting process within the parameters of their operating environment.

Decision Packages

This section discusses decision packages and their use in the zero base budgeting process. The decision package is a building block of the zero base budgeting process, and the means by which decision unit managers justify their unit's existence [Pyhrr, 1975]. The creation of accurate decision packages is difficult. The decision packages must not only detail the costs of the decision units for the budget period, but the decision packages must also specifically detail how the decision units operate and meet their objectives [Wholey, 1978].

The content and design of decision packages will differ between organizations, but each decision package must provide all levels of management the information necessary to evaluate the package. The items of information necessary for decision package evaluation represent a specific application of the predetermined general rules of the zero base budgeting process. The information necessary for the decision package evaluation includes:

1. Purpose/objective of the decision unit.
2. Descriptions of the actions of the decision unit (What are we going to do and how we going to do it?).
3. Cost and benefits.
4. Workload and performance measures.
5. Alternative means of accomplishing objectives.
6. Incremental levels of effort. (What benefits do we get for different levels of funding. This includes the

consequences of not funding the decision unit.) [Pyhrr, 1977].

The information requirements provide a guide for decision unit managers in the development of decision packages. The form and content of the packages permit lower level managers to indicate to upper level managers how individual units will accomplish organizational objectives. Each decision package clarifies the decision unit's objectives within the framework of the organization and describes the procedures for attaining the unit's objectives [Stonich, 1977]. The decision package identifies alternative methods of operation and several incremental levels of spending based on different levels of performance [Minmier, 1974]. The workload measures, included in the decision package, provide top management with an indicator for comparing the performance of one work center with another. Using workload measures, management can identify inefficiencies in operations and also single out creative, efficient techniques which might apply to other decision units [McGinnis, 1976]. Additionally, workload measures provide lower level operational managers with established standards for the evaluation of individual units [Wholey, 1978].

Two items of required information that are especially important in the development of decision packages are: 1)alternative means of accomplishing objectives and 2) incremental levels of effort [Pyhrr, 1975]. The first item, developing alternative methods of accomplishing objectives, is important in the creation of an effective zero base budgeting process [Broadnex, 1978].

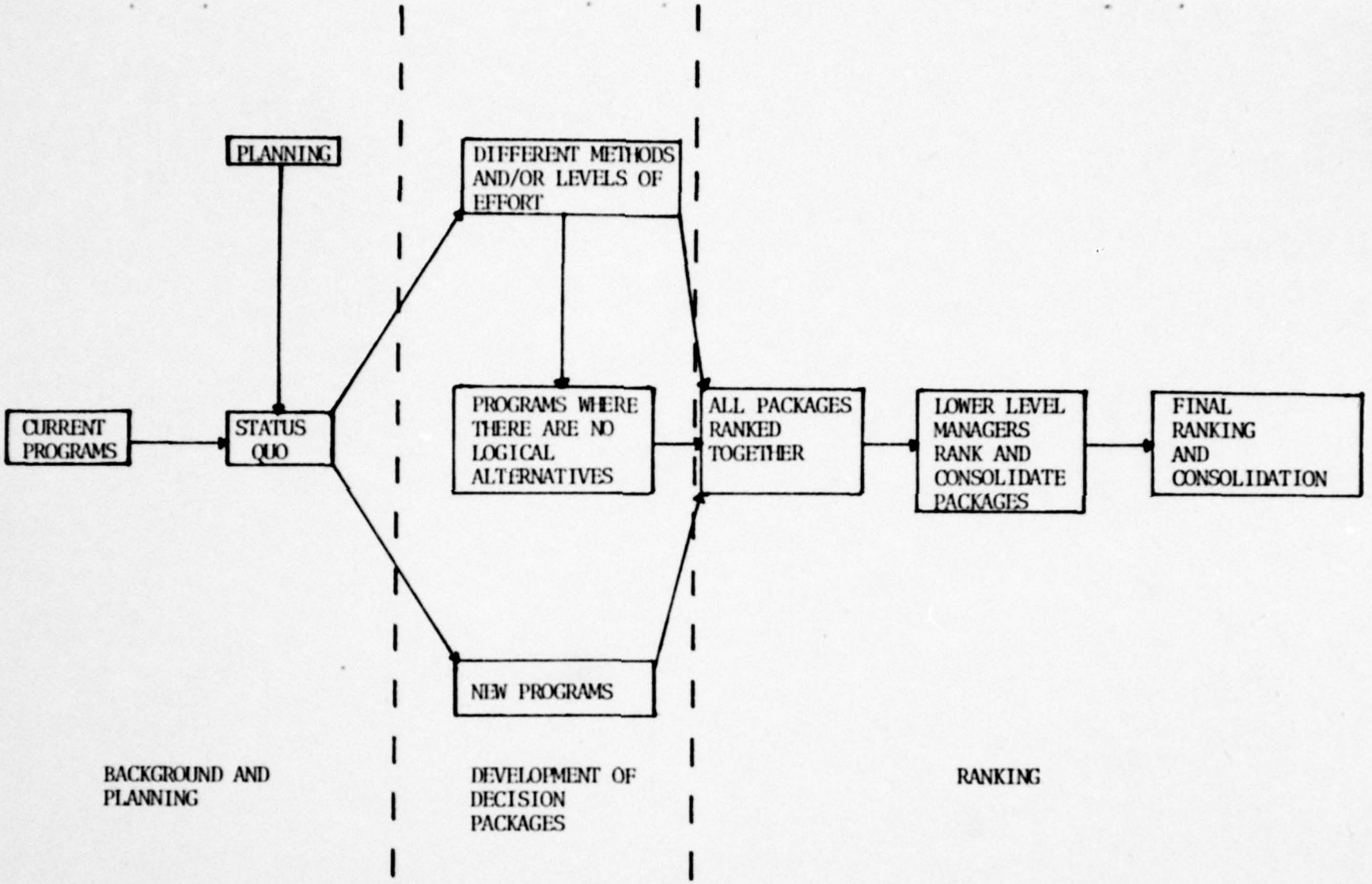


Figure 1. Decision Package Formulation Process

Decision unit managers must take the problem solution approach to analyzing decision units and decision packages [Emory, 1976]. The problem solution approach is illustrated in Figure 1. The decision unit manager must develop different or alternative methods for accomplishing the decision unit's objectives. Alternative methods provided might include, but are not limited to:

1. Combining operations
2. Subcontracting the operation
3. Centralizing the operation
4. Eliminating the operation
5. Decentralizing the operation [Stonich, 1977].

During the course of developing alternatives, additional information may be generated. This may necessitate the creation of additional decision packages for the new alternatives, within the original decision packages. Additionally, the development of alternatives provides a vehicle by which lower level managers can communicate to top management new or different approaches for accomplishing the organization's objectives [Pyhrr, 1975].

The second item, incremental levels of funding and effort in a decision package, are beneficial to management because if the budget request contains only one level of funding or effort management's alternatives are: to accept the request, reject the request, return the request for further evaluation, or make arbitrary cuts in order to meet fund limitations. However, in zero base budgeting the decision package usually contains at least three levels of funding or effort from which to chose

[Pyhrr, 1976]. One level of funding or effort is the current services level, which represents the funding level required to continue present programs with no change in scope. A second level represents an increment of service above the current level, which is used to justify increased expenditures and identify extra benefits accuring from the increased funding. In some instances there may be a number of incremental decision packages built upon the current service level [Pyhrr, 1970]. Finally, all decision packages have a minimum level of funding. The minimum level of funding is that level below which the operation of the unit would not be practical. In the federal government the minimum level must be set below the current services level [OMB Bulletin 77-9, 1977]. In private industry management normally defines the minimum level of operation for its decision units [Hill, 1977]. The decision unit manager, by identifying the minimum level is not recommending operations at this level. Instead, the manager is providing top management the option to fund the decision unit at this lowest level rather than eliminating the unit [Pyhrr, 1977].

Within each incremental level there may be additional decision packages [Pyhrr, 1975]. An illustration of decision packages within incremental levels is a basic decision package to cut a four foot wide trail through the forest. The four foot wide trail would be the minimum level of funding and effort required for the project. Anything less than this would not be worth the effort. Three initial incremental levels contained in the

decision package may consist of widening the trail four feet for each level. This would provide a minimum level of a four foot wide trail, with improved levels consisting of an eight wide trail, a twelve foot wide and a sixteen foot wide trail. Each level would contain the information, as defined previously, needed to make a decision on the width of the trail. Suppose that for each of the four different widths of the trail four types of paving are available. Each level of effort for the trail is in effect a decision package consisting of the specific width and the analysis of the costs and benefits for the four different types of paving. However, this type of analysis can become a long, time consuming and confusing process. Normally one package is built as a series of increments from the minimum level [Sarant, 1978].

Ranking Decision Packages

The final element in the zero base budgeting process is ranking the decision packages. The ranking procedure permits managers at various levels in the organization to decide the importance as well as the necessity of programs under their control. Also, through the use of the increments the ranking process identifies the most efficient use of resources to meet the objectives of the organization [Minmier, 1974].

The ranking process begins with management one level above the decision unit. Managers at this level must rank the increments of the decision packages developed by the decision units for which they have specific authority. The minimum level of

ONLY TWO PROGRAMS UNDER CONSIDERATION

DECISION PACKAGES FOR PROGRAMS C AND M

C1 ——— MINIMUM LEVEL ——— M1
C2 ——— CURRENT LEVEL ——— M2
C3 ——— IMPROVED LEVEL ——— M3

EXAMPLE ONE

Program C is a little more important than Program M

Ranking		
M3		
C3	PACKAGES ABOVE FUNDING LEVEL	PRIORITIZED BUT NOT FUNDED
FUNDING LEVEL		
M2		
C2	PACKAGES ABOVE CUTOFF LEVEL BUT BELOW FUNDING LEVEL	PRIORITIZED AND FUNDED
CUTOFF LEVEL		
C1,M1	PACKAGES BELOW CUTOFF LEVEL	PACKAGES ARE NOT PRIORITIZED AND ARE AUTOMATICALLY FUNDED

EXAMPLE TWO

Program C is a lot more important than Program M

Ranking		
M3		
M2	PACKAGES ABOVE FUNDING LEVEL	PRIORITIZED BUT NOT FUNDED
FUNDING LEVEL		
C3		
M1	PACKAGES ABOVE CUTOFF LEVEL BUT BELOW FUNDING LEVEL	PRIORITIZED AND FUNDED
CUTOFF LEVEL		
C1,C2	PACKAGES BELOW CUTOFF LEVEL	PACKAGES ARE NOT PRIORITIZED AND ARE AUTOMATICALLY FUNDED

Figure 2. Ranking Process

the decision package from the most important decision unit will generally be assigned the highest priority for funding. All other programs and increments will then be ranked in sequence by decreasing importance (See Figure 2). It is not required that the minimum level of one program be ranked before additional increments of other programs. The process of ranking the incremental level of one program before the minimum level of another program emphasizes the importance management places on the prior program relative to the latter. The ranking permits management the option of deciding which programs and increments give the organization the most efficient mix for accomplishing organizational objectives.

The next step in the ranking process occurs at the next level of management. Managers at this level examine all the decision packages for the decision units under their control and rank the packages and increments according to priority. The ranking process continues through the management structure until top management makes the final decision.

Often, due to the large number of decision packages within an organization, the ranking process may be made easier by looking at only those decision packages which are above some monetary cutoff level. The monetary cutoff level is established by management to minimize the number of packages that must be analyzed in the ranking process. All the packages above the monetary cutoff level must be prioritized, those below the level are automatically funded. The packages below the cutoff level

are considered high priority items which would be funded even if they were prioritized with all the other decision packages [Pyhrr, 1975]. These high priority items are decision packages so important or beneficial to the organization, that there is no question about funding them. Care must be taken by management to insure that the high priority items are extremely important and beneficial to the organization [Emory, 1976].

Once the decision packages above the cutoff level are prioritized they must be analyzed in relation to a given funding level. Given that the high priority decision packages below the cutoff level will be funded, consideration only has to be given to those decision packages above the cutoff level. Those packages above the cutoff level but below the funding level will be funded. If decision packages are above the funding level they will be eliminated [Pyhrr, 1975]. By establishing cutoff and funding levels, management frees itself to concentrate on decision packages which are close to the funding level and therefore may or may not be funded [Stonich, 1977].

Another method of ranking decision packages is to review all the decision packages at every level of management. This method involves reviewing every alternative and increment of every package. In a large organization, such as the federal government, this can become very expensive and time consuming [Anthony, 1977]. If this approach is used, the examination of every package continues up the management chain until top management sets the final ranking and publishes the budget.

As with any form of budgeting there are several ways in which the zero base budgeting process can be circumvented for personal benefit. However, the analysis and discussion of these budgeting ploys is beyond the scope of this study. Several of the books and articles listed in the bibliography contain excellent discussions of the topic [Anthony, 1977; Check, 1977; Pyhrr, 1977].

Summary

Zero base budgeting is a process that requires managers to review and justify new and old programs in order to facilitate the allocation of resources in accordance with organizational objectives. The zero base budgeting process is simple. A manager that is responsible for a function or program prepares a budget justification that is evaluated by higher levels of management in terms of costs and benefits. The review and ranking of the programs that follow is continued until a budget reflecting the highest priority programs is developed for the organization. As with other budget processes, zero base budgeting is a management process that must be supported by and involve management throughout the entire process if it is to improve efficiency and reduce costs [Stonich, 1977].

CHAPTER II

U.S. COAST GUARD PLANNING, PROGRAMMING, BUDGETING AND OPERATION PROCESS

This chapter discusses the Coast Guard planning, programming, budgeting and operations process. The chapter specifically discusses the Coast Guard organizational elements that manage the planning, programming and budgeting process and the inputs used in the operation of the process. The chapter also examines the Coast Guard budget. Included is an overview of the budget structure, appropriation classification, fund allocation and budget cycle. The final section of the chapter deals specifically with the zero base budgeting process as practiced by the Coast Guard.

The traditions, habits, values, relationships and behaviorial patterns of the Coast Guard were shaped and molded as the Coast Guard developed over the past two centuries. To fully appreciate and understand a discussion of the Coast Guard planning, programming, budgeting and operating process it is necessary to be cognizant of the history of the organization in which this process evolved and operated. Thus, prior to the formal discussion of the planning, programming, budgeting and operating process an overview of Coast Guard history, mission and organizational strucutre is presented.

Historical Background

The major source for the information contained in this section is a thesis by LT Donald M. Morrison, Jr., USCG (1966).

This section is not a complete history of the Coast Guard. This section is intended to lay a foundation for the understanding of the present environment in which the Coast Guard operates. If more information is desired the reader should consult the work by LT Morrison (1966).

The beginnings of the present day Coast Guard can be traced back to the first United States Congress and the first Secretary of the Treasury, Alexander Hamilton. In 1789 Congress passed a law which gave title for twelve lighthouses built by the colonies along the Atlantic coast to the Secretary of the Treasury and placed responsibility for constructing and maintaining aids to navigation in the Office of the Secretary of the Treasury. Later in 1790, at Secretary Hamilton's request Congress also authorized the construction of ten revenue cutters. The organization given charge of these vessels was named the Revenue Cutter Service. The revenue cutters were vessels designed for patroling the coasts of the young nation with the primary goal of reducing smuggling by sea. The presence and activities of the revenue cutters were intended to force merchants to follow the proper import procedures and hence pay the customs tariffs on their goods. At the time, these tariffs represented the primary means of financing the new nation's government.

Over the next 125 years, the growth of the United States led to the establishment of new duties originating in the Treasury Department and related to the country's responsibilities to its seafaring community. Two of the major activities placed under the Treasury were the Lifesaving Service in 1874 and the Bureau

of Marine Inspection and Navigation in 1838 [U.S. Coast Guard Organizational Manual].

The organization entitled the U.S. Coast Guard was created in 1915 by an act that merged the Revenue Cutter Service and the Lifesaving Service creating a peculiar organizational arrangement. The act specified that during peacetime the Coast Guard would be part of the Department of the Treasury, however, during wartime the service would be transferred to the Department of the Navy.

During the period of 1915-1979 the United States Coast Guard continued to have its range of responsibilities increased. The most important activities that occurred during this period were:

1. The Bureau of the Lighthouses incorporated with the Coast Guard....1939.

2. The permanent transfer of the Bureau of Marine Inspection and Navigation to the Coast Guard....1946.

3. The transfer of the Coast Guard from the Department of the Treasury to the newly formed Department of Transportation... 1 April 1967 [U.S. Coast Guard Organization Manual].

In the period since 1967 the Coast Guard has continued its traditional duties and has become increasingly active in the prevention of narcotics smuggling into the United States.

Missions

Statutory authority, major functions, and responsibilities of the Coast Guard are codified in Title 14 of the United States Code. In broad succinct terms the mission objectives of the

Coast Guard are:

Search and Rescue - To minimize the loss of life, injury, and property damage by rendering aid to persons and property in distress in the marine environment, including inland waters.

Ice Operations - To facilitate maritime transportation and other activities in the national interest in ice-laden domestic and polar waters. Services provided also assist in meeting the needs of marine safety and environmental protection in the ice environment.

Aids to Navigation - To assist mariners in determining their position and to warn of dangers and obstructions so that they may follow a safe course.

Marine Environment Protection - To maintain or improve the quality of the marine environment through preventive measures. To minimize the danger caused by pollutants discharged into the marine environment by providing coordinated and effective response to remove discharges of oil or hazardous substances.

Port Safety - To safeguard the nation's navigable waters and adjacent shore areas, including ports and their related facilities, from accidental or intentional harm. By assuring the safety of ports and waterways and of persons and property nearby, the utilization of these vital marine transportaion links is facilitated

Recreational Boating Safety - To reduce the risk of the loss of life, personal injury, and property damage associated with the use of recreational boats in order to provide boaters with maximum safe use of the nation's waterways.

Enforcement of Laws and Treaties - To enforce all Federal laws in the marine environment.

Merchant Marine Safety - To assure the safety of life and property on the high seas and internal waters through law enforcement and regulation of merchant vessels, their officers and crews.

Military Readiness - To maintain the Coast Guard as an effective and ready armed force prepared for and immediately responsive to assigned tasks in the time of peace, or national emergency. This includes readiness to function as a specialized service in the Navy in the time of war, responding to national disasters and domestic emergencies, and the efficient conduct of peacetime missions.

These mission objectives, implemented through Coast Guard programs, demonstrate that the Coast Guard engages in a wide spectrum of activities.

The Coast Guard developed from a single purpose service engaged in the enforcement of customs laws along the eastern coast of the United States into a multi-purpose agency. The development has been influenced by the Coast Guard's ability and willingness to accept additional duties to meet new

and dynamic interests. The evolution of the Coast Guard has produced a unique organization, military in posture yet humanitarian in purpose, with dedicated personnel using limited resources to accomplish a variety of missions.

Coast Guard Organizational Structure

The Coast Guard is organized in accordance with a vertical-general staff system similar to that of the Army. Each military chief at each hierachical level is responsible not only for the complete operational effort assigned to that hierarchical level, but also for the administration of the business and logistics of the command. The basic line organization of the Coast Guard has three hierarchical levels: the Commandant, District Commanders, and the operational and logistics unit Commanding Officers. In the case of certain Headquarters units, this three tier structure is modified by the elimination of the Distict Commander. For these Headquarters units the chain of command proceeds directly from the Commandant to the Headquarters unit Commanding Officer.

The Commandant (G-C), as the senior Coast Guard officer, is responsible for the overall performance of the Coast Guard and reports to the Secretary of Transportation, or the Secretary of the Navy when the Coast Guard is operating within that department.

The immediate assistants to the Commandant are the Vice Commandant, Chief of Staff and their staffs. The Vice Commandant (G-CV) is the second in the chain of command and assists the Commandant in the operation of the Coast Guard.

The Chief of Staff (G-CCS) coordinates policy and program development and exercises general management policy control for the Commandant within the Coast Guard. General management policy control encompasses establishing procedures for reporting, recording, and operating the various activities carried out by the Coast Guard. The Chief of Staff is also responsible for the administration and control of funds within the Coast Guard. The Chief of Staff has several assistants under direct supervision. These include staff personnel in the Chief of Staff's immediate office and the Coast Guard Program Directors/Managers at Headquarters and Districts. The primary purposes of the Chief of Staffs' wide span of control is to secure coordination between Headquarters and Coast Guard field units.

Next in the chain of command are the District Commanders. Each District Commander is in charge of a collection of operational and logistical field units. These units are expected to perform all the Coast Guard missions within the designated district boundry.

A significant feature of the operational field units is their multi-mission capability. Each unit is deliberately designed, manned and trained to perform diversified duties. For example, the Coast Guard Base at Ketchikan, Alaska is primarily an industrial support facility providing for the maintenance of buoys and other aids to navigation, the maintenance of small boats and patrol craft, electronic maintenance of Coast Guard equipment, and the construction and major repairs to Coast Guard facilities throughout Alaska. However, in addition to

industrial support activities, Base Ketchikan also participates to a significant degree in other programs; such as; aids to navigation, boating safety and search and rescue [Kendall, 1958]. The multi-mission use of Base Ketchikan is typical of the utilization of all Coast Guard units.

Coast Guard Planning, Programming and Budgeting

This section first examines the planning and programming process used by the Coast Guard. The section examining planning and programming is followed by an examination of the management personnel responsible for operating the process and a brief look at the inputs used by the managers to accomplish their task. Next the section examines the Coast Guard budgeting process. Contained within this examination will be an overview of the budget structure, the appropriation classifications, the relationship between Coast Guard fund distribution and the Coast Guard organization structure, the budget process, and zero base budgeting as practiced by the Coast Guard.

The nature of the planning, programming, and budgeting process is iterative, and the lines of demarcation between planning, programming and budgeting can not be clearly and absolutely defined [Anthony, 1975]. For example, planning is normally associated with those years in advance of the budget year. Programming is primarily concerned with the budget year and to a lesser degree with the current year. Budgeting is associated with both the budget year and the current year. The inability to clearly distinguish where planning ends and programming begins makes the exchange of information and ideas essential among

those individuals involved in planning, programming and budgeting to insure the proper development and execution of each Coast Guard program [COMDTINST M16010.1, 1978].

Coast Guard Planning

Planning processes may be classified into three types: "Top-down, Bottom-up, and Interactive" [Anthony, 1975]. The Coast Guard process can be characterized as interactive, that is, while the decision making authority rests with top management, the process is structured to maximize inputs and recommendations from every level of the organization. Conceptually the Coast Guard planning process can be viewed as a formal, stylized dialogue between the Commandant, the Program Directors and field commanders. (See Table 1)

Programs are the major element in the planning process. A program is described as a major Coast Guard endeavor defined in terms of specific actions and resource allocations required to reach a stated objective [COMDTINST M16010.1, 1978]. The planning process is carefully controlled through the use of long, intermediate and short range inputs and controls. (See Table 2) There are currently 14 operational and 12 support programs in the Coast Guard [COMDTINST M16010.1, 1978].

Table 1

Coast Guard Internal Communications
During the Coast Guard Planning,
Programming and Budgeting Process

PROGRAM DIRECTORS	COMMANDANT	DISTRICT

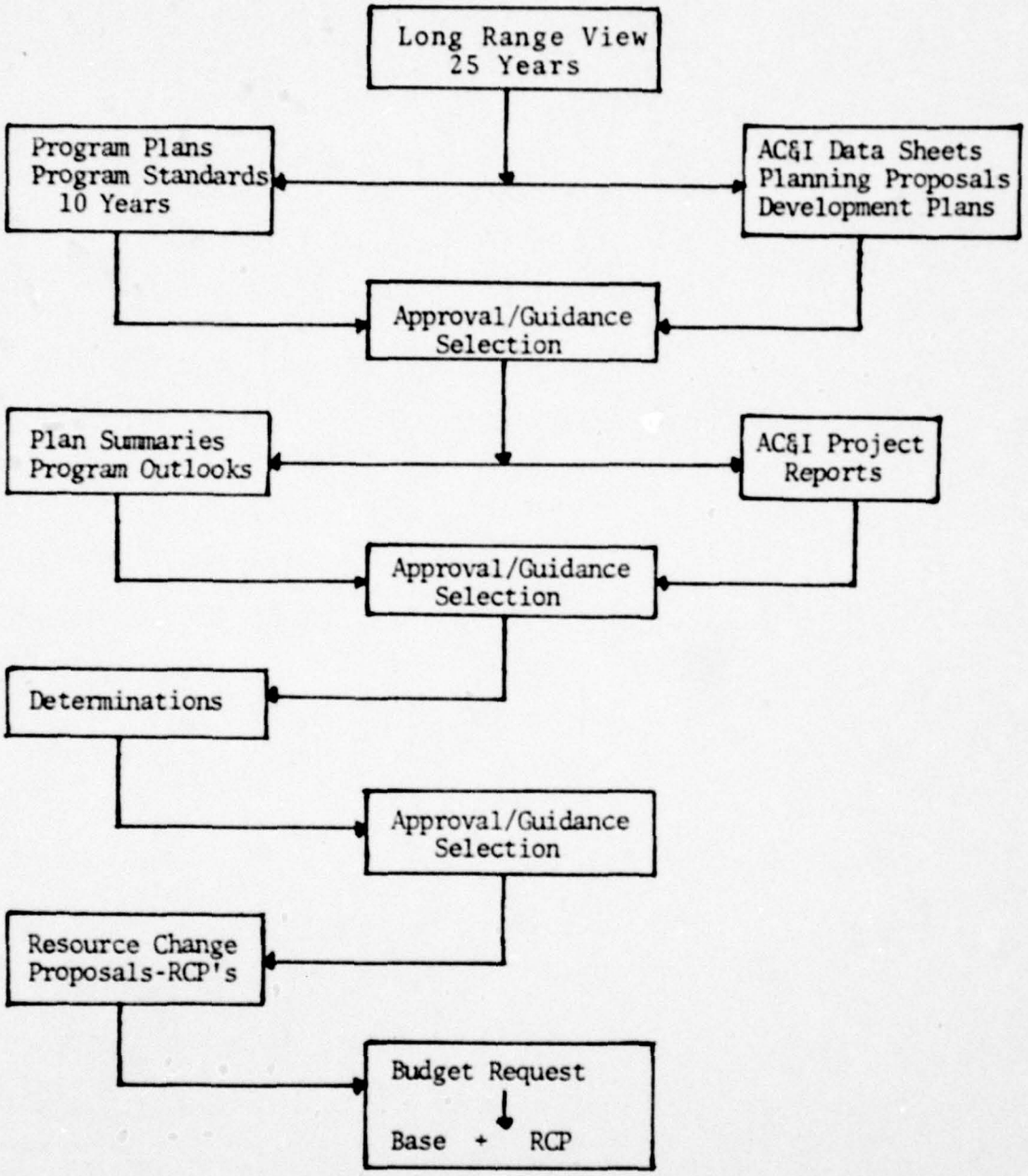


Table 2

Inputs to the Planning, Programming and Budgeting Process

Inputs to the Planning, Programming and Budgeting Process	Originator	Purpose
Long Range View	Commandant	Commandant's view of planning and environment and policy over next 25 years
Program Plans	Program Manager	Translates Coast Guard Objectives into action oriented plans for Commandant's approval (10 years)
Programs Standards (contained in Program Plans)	Program Manager	Specifies the Resources required to achieve each of several levels of program output (10 years)
Planning Proposals	District	Initiates field generated planning for future (3-5 years)
Development Plans	District	Initiates field generated planning for future requirements at large multi-mission shores facilities

Facility Plans Aviation Cutter Boat Shore Facility	Headquarters	Each addresses the present and future uses of and requirements for its respective facility (10 years)
Plan Summaries	Program Manager	Defines the goals and milestones for the near term (5 years) reflecting the Program Standards selected by the Commandant
Program Outlooks	Program Manager	Briefly summarize program plans (5 years)
Acquisition Construction and Improvements Reports	District	Description of a specific capital investment in facilities
Determinations	Program Managers	Provide specific alternative analysis of all changes (+ or -) to be accomplished in the budget request
Resource Change Proposals	Program or HQ Planning Coordinator	Description of a specific investment in facilities

Coast Guard Programming

Programming in the Coast Guard is defined as a specific action to allocate resources to carry out a decision [COMDTINST M16010.1, 1978]. The programming process in the Coast Guard translates the Coast Guard's view of the environment as developed from the planning process into a viable, realistic, justified budget request. The programming process in a strict sense covers the period from the submission of the Commandant's determinations to the submission of the budget request to the Office of the Secretary of Transportation (See Table 1 and 2) [COMDTINST M16010.1, 1978]. However, there is no absolute line between the planning and programming process in the Coast Guard.

Management Responsibilities

Managers responsible for the operation of the planning, programming and budgeting process in the Coast Guard at the Headquarters level are:

1. Commandant
2. Chief of Staff
3. Program Director
4. Program Manager

Managers at the District level are:

1. District Commander
2. District Program Manager

#It is important to note that a program (noun) is an endeavor by the Coast Guard, through specific actions and resource allocations to reach an objective. Programming (verb) on the other hand is a specific action to allocate resources to carry out a decision.

The Commandant, the Chief of Staff, the Program Directors and Program Managers are the principals in the planning, programming and budgeting process as operated by the Coast Guard. The responsibilities of the Commandant and the Chief of Staff are focused on the overall objectives of the Coast Guard while the Program Directors and Managers are oriented toward the component parts (programs) that make up the overall Coast Guard objectives.

The Commandant, as the head of an operating administration of the Department of Transportation, is responsible to the Secretary of Transportation for developing and implementing approved Coast Guard programs which are responsive to statutory and executive direction. The Commandant accomplishes this by providing guidance through policy decisions and exercising approval or disapproval action. (See Table 1) Policy guidance is also provided by the Commandant through the use of program inputs to the planning programming and budgeting process. (See Table 2) Additionally, as the head of the operating administration, the Commandant normally appears before Congressional committees as required and may also appear before the review staff of the Office of Management and Budget.

The Chief of Staff is responsible to the Commandant for coordinating the development and successful execution of Coast Guard programs. Through the Program Directors and with the guidance of the Commandant, the Chief of Staff not only insures that policy is followed, but keeps the Commandant advised and assists in policy formulation as required. In order to properly perform this duty, the Chief of Staff becomes the focal point for

policy and program review.

The Program Directors act for the Commandant in the management of Coast Guard programs. A Program Director at Headquarters is a flag officer or civilian office chief who has the immediate responsibility for the overall management of a program [COMDTINST 16010.1, 1978]. Program offices are the location where major policy is translated into plans, budgets and routine program policy for the specific direction of lower level units.

Assisting the Program Director is the Program Manager. This position through continuous review and implementation of routine program policy assists in the day-to-day operation of programs. As the Program Directors' implementing and reviewing arm for the program, the Program Manager is routinely involved in detailed planning, programming, budgeting and program execution. It is at this level that the vast majority of program documentation and studies are generated [COMDTINST 16010.1, 1978]. At the District level the District Commanders and District Program Managers stand in the same relation in the conducting of Coast Guard programs at the field level as the Commandant stands to the Program Directors/Managers at the Headquarters level.

Coast Guard Budgeting

Budgeting in the Coast Guard is the procedure by which specific plans and objectives are translated into financial requirements for purpose of executing those plans [CG-255, 1976].

The Coast Guard, as an operating administration of the Department of Transportation, prepares budget requests which are incorporated into the President's budget submission to Congress

each January. These budget requests reflect the statutory responsibilities of the Coast Guard and the policies for carrying out these responsibilities as defined by the President. The Office of Management and Budget (OMB) acts as the President's immediate link in dealing with Executive agencies on matters of budget formulation and execution.

Coast Guard Budget Structure

Funds appropriated by Congress for various programs of the Coast Guard are received in separately administered direct appropriations, revolving funds, special funds and trust funds, as detailed in the Coast Guard Manual of Budgetary Administration. In brief form these are:

1. Direct Appropriations

a. Operating Expenses.(OE) These funds provide for the operation and maintenance of all Coast Guard programs not otherwise specifically provided for.

b. Acquisition, Construction, and Improvements. (AC&I) These funds provide for the major acquisition, construction, and improvement of vessels, aircraft, shore units and aids to navigation, excluding minor acquisitions, alternations, additions, renewals, and replacements funded in the OE appropriations where estimated costs of a project are $75,000 or less.

c. Alteration of Bridges. (AB) These provide for the Governments portion for the altering or removal of railroad or publicly owned highway bridges, so as to insure free navigation of waters of the United States.

d. Retired Pay. (RP) Provides for the retired pay of

former military members of the Coast Guard, Coast Guard Reserve, and members of the former Lighthouse Service.

e. Reserve Training. (RT) Funding provided under this appropriation provides for all the necessary expenses for the operation and administration of the Coast Guard Reserve Training program.

f. State Boating Safety Assistance. (SBSA) These funds provide for financial assistance to state boating safety programs as provided for by the Federal Boating Safety Act of 1971, as amended.

2. Revolving Funds. Revolving funds are authorized by specific legal requirements as self financing operations. Funds are received by charging patrons for service or materials provided. The funds generated from these operations are completely available for meeting authorized costs. Since the concept of the fund is to be self sufficient, annual appropriations are not normally made for these funds, although occassionally appropriations may be requested to increase the funds' total capital structure. The Coast Guard has two revolving funds that appear in the budget. These are:

a. Coast Guard Supply Fund

b. Coast Guard Yard Fund

These funds, as their titles imply provide authorized goods and services to members of the Coast Guard on a reimburseable basis.

3. Trust Funds. As specified by law, trust funds are established to account for receipts which are maintained for utilization in carrying out specific tasks or programs in

accordance with an agreement or statute. Trust funds are financed through gifts or bequests and not appropriations from Congress. The Coast Guard has one trust fund that appears in the budget. This trust fund is the Coast Guard Gift Fund.

4. Trust Revolving Funds. Trust revolving funds differ from the other revolving funds in that they represent funds held for a specific purpose provided by law. They differ from other trust funds in that cyclical handling of receipts and expenditures are involved. The Coast Guard has two revolving trust funds represented in its budget. These funds are:

a. Cadet Fund

b. Commissary Stores Surcharge Fund

These funds are used to discharge obligations according to law and generally do not receive direct appropriations from Congress.

5. Special Funds. A special fund is an account established to receive and control receipts which are designated for a special purpose, but are not generated by a continuing sequence of operations for which there is authority to reuse such receipts. An example of a special fund is the Pollution Fund established under the Federal Water Pollution Control Act and amended by Public Law 92-500. This fund provides money to insure immediate clean-up of oil and other polluting substances. The fund may be used when a spill occurs and the responsible party does not or can not accomplish immediate clean-up with its own resources. Expenditure from the fund is later reimbursed by the responsible party [CG-255, 1978].

Appropriation Classification

This section describes how the Coast Guard distributes

Congressionally approved funds to its operating and support units. The distribution of these funds falls into two categories the first is direct appropriations and the second category is revolving, trust and special funds.

When the Coast Guard distributes direct appropriations, a single allotment is established for each appropriation. An allotment is a dollar amount designed for a specific appropriation classification. All the direct appropriations are defined by a specific dollar amount. The sum total of the six direct appropriation classifications equals the total amount of direct appropriations made to the Coast Guard.

To aid in the management of the direct appropriations and establish better control of funds below the allotment level targets are established. Targets are established internally by the Coast Guard and represent a firm obligation limit for each of the major organizational functions in the Coast Guard. For operating expenses and reserve training appropriations these targets are called administrative operating targets and for all other appropriations they are identified as project targets. Administrative operating targets may be further divided into operating guides. Operating guides are flexible obligation limits which must total the administrative operating target. All targets build upon each other. For example, operating guides total to an operating target which then add to the total allotment amount.

In the other four direct appropriations classifications project targets represent the planned obligation limit for the

project. Headquarters, Districts and Headquarters Units are normally the only levels that administer these project targets.

The second category for distributing appropriated funds involves revolving, trust and special funds as defined earlier. The total of the funds appropriated and given to the Coast Guard is the allotment level for the respective fund. A further form of administrative control for these funds are the capital authorization targets or project targets.

Relationship Between Coast Guard Fund Distribution and Coast Guard Organization

Funds are requested from Congress using program requests. These requests are made up of two parts: 1) a current base, which is made up of the total of previous program requests, 2) resource change proposals (RCP's) which are made up additions, cut-backs or deletions of programs. The funds approved by Congress are managed by the Commandant of the Coast Guard through the use of a financial obligation plan. This plan is developed along functional lines rather than program lines. For example, air stations or vessels will appear in the financial obligation plan as opposed to specific programs such as search and rescue or aids to navigation. The financial plan is intended to parallel as closely as possible the division of responsibilities outlined in the Coast Guard Organizational Manual, (CG-255, 1978).

Program Directors/Managers prepare the requests for funds that are incorporated into the Coast Guard budget request. These requests are based upon the needs of the programs that the Coast Guard operates. But, the appropriations are distributed, through

the chain of command, in accordance with the financial obligation plan, which is function oriented. This procedure produces complexities in fund administration in that the Headquarters managers who generate budget requests are "program responsive" while in many instances the managers to whom responsibility for fund management is assigned are "function or hardware responsive" [Coast Guard Organization Manual]. In some appropriations, such as Reserve Training, the program and functional responsibilities are basically incorporated into one. This means money appropriated for the program is almost entirely expended on that program and is easily traceable in the accounting system. In others, such as AC&I, administration of project funds is also relatively simple and well defined.

However, if a unit has more than one function or multi-mission capability, program and function responsibility become complicated. An example of this problem is the expenditure of Operating Expenses. These funds, as defined previously, are used to support the operation and maintenance of units. Given the multi-mission capability of the unit the identification of the program to which the expenditure of funds should be charged is extremely difficult. The funds are requested by one program and used to support several programs, with accounting for these funds done by function.

Budget Process

This section discusses the budget process in the Coast Guard which is basically a continuous effort that gradually changes from broad policy inputs and programs to specific actions. There are, however, distinct milestones, consisting of externally

imposed constraints, that serve to divide this process into four stages. These stages are:

1. Forecast Stage
2. Office of Management and Budget Stage
3. Congressional Stage
4. Operating Stage [Manual of Budgetary Administration, 1976].

The budget process is basically program oriented and supported by the planning process discussed earlier. Figure 3 illustrates the budgeting process.

The first stage of the budget process is the forecast stage. This consists of formulating the basic budget requests using current appropriation levels and additions and deletions of funds as requested by Program Managers/Directors through Resource Change Proposals.

Once the Coast Guard has developed the topics that are included in the request, the budget is sent to the Office of the Secretary of Transportation for review. After review by the Secretary of Transportation the Coast Guard receives limitations by appropriation for the coming year. The Coast Guard is permitted to appeal these limitations within a reasonable time normally defined as 48 hours. After the appeals have been acted on instructions are issued for the preparation of a formal budget document as prescribed in Office of Management and Budget Circular A-11. The issuing of the instructions marks the end of the forecast stage and the beginning of the Office of Management and Budget Stage.

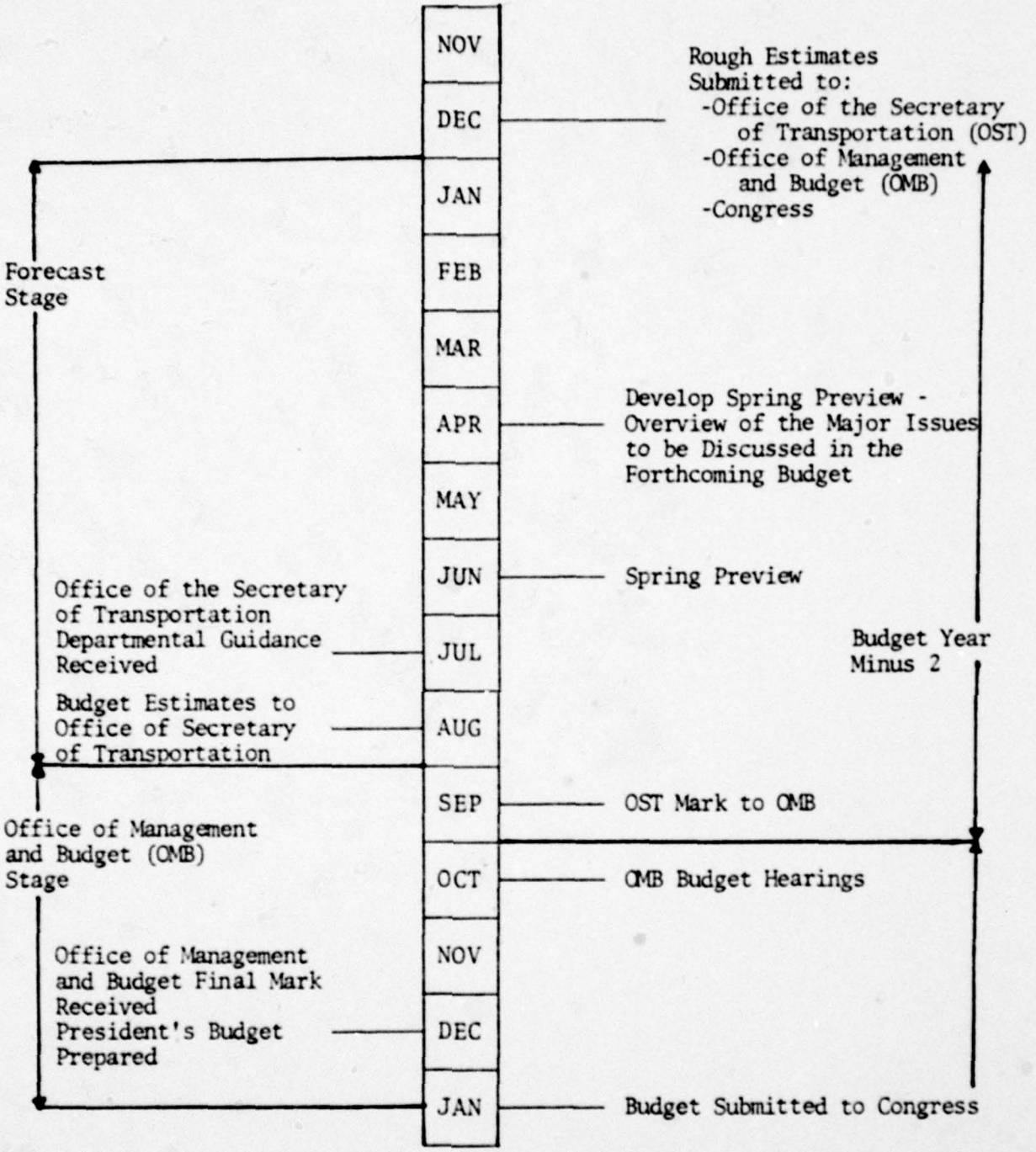


Figure 3. Budget Scheduling Chart

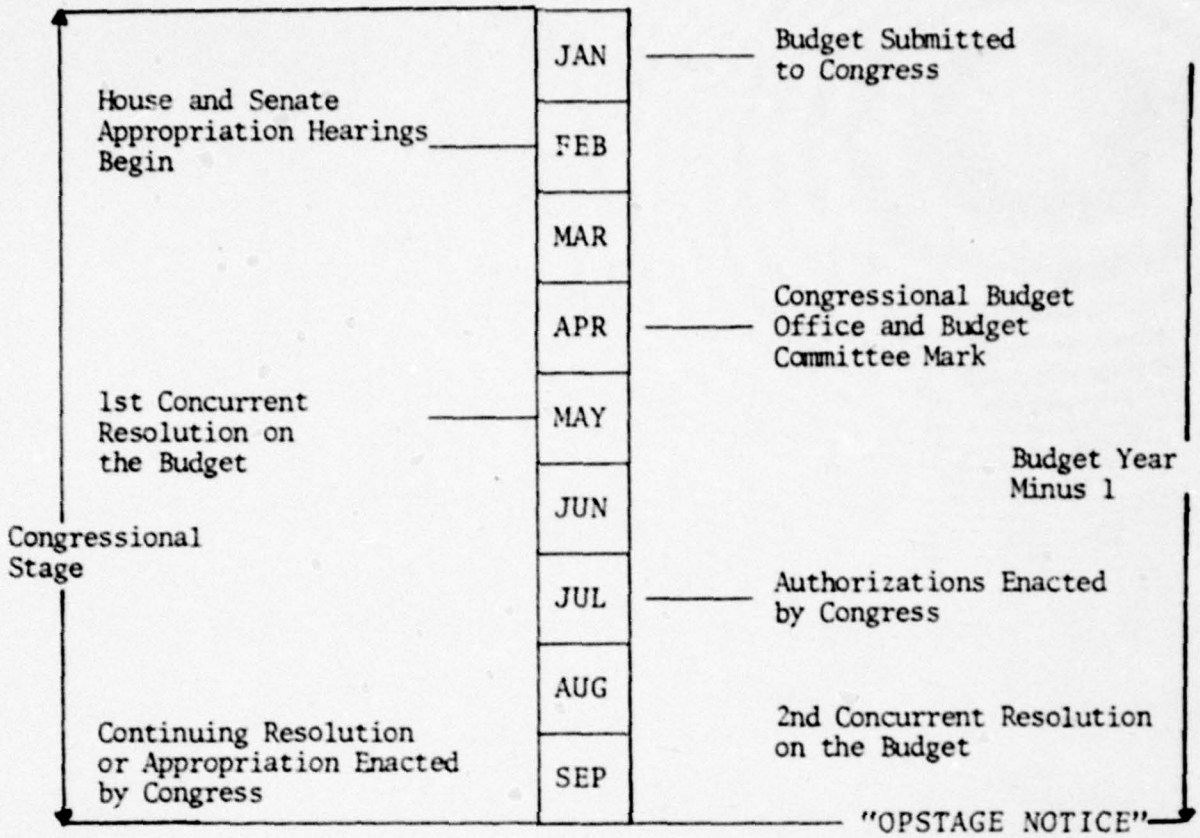


Figure 3 (Cont'd)

The Office of Management and Budget is the President's representative in the budget process. This office receives two forms of the budget request. One form is the incremental form which consists of the base or current services level and the accompanying incremental levels generated by the resource change proposals. The second form of the budget submitted to the Office of Management and Budget is in the zero base form.

The Office of Management and Budget holds hearings on the budget requests and based on these hearings and Presidental guidance establishes a level for the total budget of the United States and allocates appropriation ceilings to the government agencies. Once the final levels are defined the budget request is ready for submission to Congress, which begins the Congressional Stage of the budget process.

Congress receives the budget request in the incremental form only. The Coast Guard budget request proceeds through the Congressional Committee hearings and is supported, as required by the committees, by testimony from the Commandant and staff of the Office of Management and Budget. During the Congressional stage of the budget process, the zero base form of budget is available to Congress. However, the view of Congress seems to be that the detailed incremental budget, plus the knowledge and experience of the Congressional committees and the Staff of the Office of Management and Budget provide the necessary and sufficient information to make appropriation decisions [COMDTINST M16010.1, 1978].

During the Congressional committee review of the budget request the approximate amounts of funds that will be appropriated

are estimated by the Coast Guard. This estimate is obtained through monitoring the Congressional committee's proceedings and discussions with managers in the Office of Management and Budget. This "best estimate" is the amount of funds the Coast Guard believes will be available for the coming fiscal year. Based upon this "best estimate" the Coast Guard publishes its Financial Planning Factors. Using the Financial Planning Factors as a guide, the units in the Coast Guard submit requests and justifications for funds for the current year. The Coast Guard uses these requests, modified to fit the final appropriation levels, as the basis for distributing funds to its units.

The distribution of funds to the units marks the beginning of the final stage of the budget process, the Operating Stage. The Operating Stage (OPSTAGE) involves the distribution, expenditure and accounting for appropriated funds.

A unit is alloted funds based on its budget request made to Coast Guard Headquarters and the amount of funds actually appropriated by Congress. The budget request and eventually the funds proceed through the chain of command until the funds are finally placed in the unit's account. Once the funds are placed in the units account, they may be used for the operational needs of the unit. Guidance for the proper use and identification of the responsibility for the funds is primarily found in the Coast Guard Organizational Manual, CG-229. There are, however, several other sources of information available to the Coast Guard manager.

The instructions for the accounting of the expenditures of funds are located in the Coast Guard Comptrollers Manual, CG-264.

Basically funds are accounted for using a four digit object code. This code identifies the class or type of object on which the funds were spent. Normally no problems or questions arise unless the unit commander overspends the alloted funds or improperly takes money from one operating guide or appropriation category to purchase materials or fund a project that is not authorized in the instructions contained in the Coast Guard Comptrollers Manual [Burk, 1974]. If, however, funds are over expended or improperly expended a violation of the Anti-deficiency Statutes occurs. These statutes are designed to insure funds are spent for the purpose for which they were appropriated and only the amounts appropriated are spent [CG-255, 1976].

Anti-deficiency responsibility in the Coast Guard is found at the target level of fund allocation. For example, the Chief of Staff is the responsible officer, known as the target officer, for any anti-deficiency violations in the Operating Expense category. A complete list of officers responsible for anti-deficiency violations can be found in the Coast Guard Manual of Budgetary Administration (CG-255). However, this does not mean that corrective action or punishment for violations can not occur below the target level. Internal corrective action and punishment may be taken through the chain of command all the way down to the unit which violated the statutes. Generally, however, funds are expended and recorded in the proper account.

The procedure for recording expenditures will now be illustrated using Operating Guide 30 as an example. Operating Guide 30 was chosen since it is the largest and most common type of funds

used by units in the Coast Guard [Department of Transportation, 1979]. Operating Guide 30 is used to fund the normal and ordinary operating costs incurred by a unit. During the course of the year, a unit commanding officer may have occasion to purchase paint for the continuing maintenance of the unit's vessels. The purchase and account classification would be recorded under an object code found in the U.S. Coast Guard Comptrollers Manual. The actual object code is not important for this example. However, the fact that the object code identifies the object or class of objects for which the expenditure was made and not the program or programs for which it was made is important. Thus, at the end of the accounting period the unit's accounts will show the amount of funds spent on a particular object or class of objects, but not the program or programs to which the funds should be credited.

The collection of data and submission of information are two additional activities that occur during the OPSTAGE that impact the Coast Guard planning, programming, and budgeting process. There are two reasons for the collection of data and submission of information: 1) Government requirements; and 2) Cost Guard planning. The majority of these reports are submitted in compliance with government regulations promulgated outside the Coast Guard. The remaining portion of these required reports are promulgated by Coast Guard Program Directors/Managers and are used to collect data for planning purposes.

Zero Base Budgeting In The Coast Guard

Throughout the section on the budget process mention was made of the preparation of a Coast Guard budget using zero base budget

techniques. This budget goes to the Office of Management and Budget and is available for use by Congress during the Congressional Stage of the budget process. This section summarizes Coast Guard zero base budgeting preparation.

The primary budgeting effort in the Coast Guard is made using incremental budgeting techniques. A budget base with incremental levels is prepared by Coast Guard budgeting personnel. In addition, a zero base budget is prepared for submission to the Office of Management and Budget along with the incremental budget request. The zero base budget is prepared in accordance with the Office of Management and Budget Circular A-11. There are no formal instructions for zero base budgeting, other than a brief discussion and illustration on zero base budgeting contained in COMMANDANT INSTRUCTION M1601.1.

All zero base budgeting is done at the Headquarters level in the Budget Division, (G-CBU). The Budget Division is the office that collects information from the Program Directors/Managers and forms it into the Coast Guard zero base budget request. Historical costs, the incremental budget request, the personal experience and knowledge of the Budget Division staff and the informational support of the Program Directors/Managers underlie the preparation of the zero base budget request. This effort results in the zero base budget request that is submitted to the Office of Management and Budget as required by Office of Management and Budget Circular A-11.

Examination of the zero base budget request reveals that there is no uniform format for the decision packages and no direct

relationship between the zero base budget request and the incremental budget request [Department of Transportation, 1979]. The absence of any direct link between the two budgets can be attributed to the lack of sufficient guidance and support from Congress, the Office of Management and Budget and the Coast Guard [COMDTINST M16010.1, 1978].

The Coast Guard recognizes that there are problems in implementing zero base budgeting and is attempting to comply with current Executive Branch instructions. However, in as much as Congress has not adopted zero base budgeting for its authorization and appropriated process and the Office of Management and Budget has left it up to the individual agencies how to implement zero base budgeting, most of the emphasis in budget preparation is placed on the incremental budget request. The failure of Congress to adopt the zero base budgeting process has also permitted the Coast Guard to retain its present form of planning and programming which does not specifically accommodate zero base budgeting.

Summary

In this chapter the Coast Guard planning, programming, budeting and operating cycle has been examined. The examination of inputs, participants and procedures provide a basic working knowledge of how the Coast Guard operates financially.

Several problems and strengths were alluded to but not specifically examined. The specific strengths and weaknesses of the Coast Guard system in comparison with the zero base budgeting process are examined in Chapter III.

CHAPTER III

ZERO BASE BUDGETING AND COAST GUARD PLANNING, PROGRAMMING AND BUDGETING: STRENGTHS AND WEAKNESSES

This chapter compares zero base budgeting and the current Coast Guard planning, programming and budgeting process. Comparisons of the planning and programming process, management support, selection of decision units, financial accounting and control systems and zero base budget request preparation are topics presented in this chapter in separate sections. However, the fact that these topics are listed separately does not imply that they are independent entities. Each topic is a component of a complete process. Changes in the components stimulate changes in the composition and operation of the process and often alter the final output of the process. The interaction of the components must be kept in mind when examining the individual sections.

Additionally the treatment of the components in separate sections does not imply that each component has the same information requirements. Those components that are early in the process or at the top management tier in the organization, do not require specific or "how to" information. General planning and objective information suffices at this stage, whereas in the individual field unit specific detailed information and plans are often needed to complete assigned missions [Anthony, 1975].

Planning and Programming

Although planning is not a formal component of the zero base budgeting process, it is one of the support areas that must exist if the process is going to properly operate. If there are no objectives and plans on which to base the budgeting process then the process serves no useful purpose [Minmier, 1974].

The Coast Guard planning and programming provides information for Coast Guard budgeting. Centralized guidance and coordination provided by the Commandant of the Coast Guard and Headquarter's staff control the flow of information. Although the planning and programming process is dominated by top management, the interaction between Program Directors/Managers, District Commanders and their staffs, and field units provide the flow of information required for the planning and programming process.

The planning and programming process provides for long range (25 years), intermediate (10 years), and short range (3 to 5 years) planning, with goals and objectives becoming more detailed as they proceed through time.

Most planning in the Coast Guard process is interdependent and cuts across the established lines of responsibility. Since planning is done by program and the programs impact across lines of responsibility, this presents a problem for zero base budgeting. Also, accounting for individual programs that cut across lines of responsibility create difficulty for the zero base budgeting process.

The Coast Guard planning and programming process is based on management concepts that methodically provide inputs for the

preparation of the Coast Guard budget request. The process has and continues to provide viable inputs for the incremental budget request. However, the failure of the process to conform to the responsibility structure of the Coast Guard seriously hampers its use for zero base budgeting.

Management Support

The original instruction promulgated by the Office of Management and Budget, Circular A-11, directed that all government agencies must implement a zero base budgeting process. However, the creation and implementation of the process was left to the individual department to develop. The Office of Management and Budget did not specify why the creation and implementation of the zero base budgeting process was left to the individual departments. As a result of the lack of guidance and support from the Office of Management and Budget this freedom of implementation has the potential to have a good or a bad effect on the zero base budgeting process. In Chapter I it was noted that the zero base budgeting process should be tailored to fit the specific organization. It is not unreasonable to assume that the Office of Management and Budget promulgated the zero base budgeting guidance in a general form to give department freedom in which to tailor the zero base budgeting process to individual department needs.

However, the freedom created by the lack of guidance may also hurt the zero base budgeting process. This appears to be the case in the Coast Guard. The lack of any specific guidance and support from the Office of Management and Budget and Department of Transportation, other than Circular A-11, has permitted the

Coast Guard to relegate the zero base budgeting process to a lightly taken management exercise. Adding to the lack of external management support is the absence of any internal Coast Guard instructions or directions for changes in or creation of a zero base budgeting process. A brief discussion in Appendix V of COMDTINST M16010.1, at the time of this writing, is the only internal guidance and management support the Coast Guard offers. The intentional or unintentional freedom provided by the Office of Management and Budget has permitted the Coast Guard to continue directing its primary budgetary efforts toward the incremental budgeting process and dedicate minimum time and effort to the zero base budgeting process. Support for the contention that the Coast Guard is not placing much emphasis on the zero base budgeting process appears in the one brief piece of published internal guidance available to Coast Guard managers. Appendix V of COMDTINST M16010.1 comments that the Coast Guard recognizes the shortcomings of the current planning and programming process when applied to zero base budgeting, but, since Congress does not utilize the zero base budget request no action for modifying the planning and programming to accommodate the zero base budgeting process will be instituted in the future. No support or future guidance from management appears to be forthcoming. The specific weakness of the planning and programming input to the zero base budgeting process will be discussed later in this chapter.

In order to increase the understanding of why the lack of management support may have developed there are two facts that

must be kept in mind. The first fact is that people tend to resist changes [Wildvasky, 1965]. The second fact is that Congress does not use the zero base budget request [COMDTINST M16010.1].

The incremental budgeting process, as currently practiced by the Coast Guard is a well documented and understandable process that has been used to prepare the budget request [CG-255, 1976]. Budgetary personnel are familiar and comfortable with this process and know how to manage the process in order to get the desired results [Wildvasky, 1965]. This is not to say that they could not learn to be comfortable with the zero base budgeting process, but, their present familiarity with the current process creates a resistance to change that is difficult to overcome [Anthony, 1975].

The second fact that assists in understanding why there is a lack of guidance and support for zero base budgeting is that Congress does not use the zero base budget request [Anthony, 1977].

Two budget requests are sent to the Office of Management and Budget, a zero base budget request and an incremental budget request. Only one budget request, however, is sent to Congress. This is the incremental budget request. Congress, the body responsible for the appropriation of funds, does not require the zero base budget request. Being practical about the budgetary process, it is only logical that the Coast Guard use its resources to concentrate its effort on the incremental budget request, the request that is ultimately used for appropriation of funds. The

zero base budgeting process becomes the "second" budget request prepared basically to comply with Circular A-11. There is no reason to place an emphasis on zero base budgeting.

Zero Base Budget Preparation

Management support, will to a great extent, determine how decision units and packages are prepared and ranked. Support in the form of instructions on how to define, construct and rank decision units and packages is important [Minmier, 1974]. This support assists management in properly creating a specific zero base budgeting process which conforms to the generalized rules of the zero base budgeting process. Instructions and guidance from top management are needed to insure that there is a degree of comparability between both decision units and decision packages. If there is no basis upon which to compare the relative merit of each decision package then the ranking and selection process becomes extremely difficult and often meaningless [Pyhrr, 1975].

An examination, by the author, of the Coast Guard zero base budget request submitted to the Office of Management and Budget, reveals that the decision packages prepared for the different appropriation classifications were prepared and submitted using different parameters and formats. This was evident through the amounts and forms of information contained in each appropriations' decision packages. For example, one appropriation classification had a detailed explanation of the incremental levels contained in the package. These levels were complete with detailed costs and explanations of the package. However, another classification only has dollar amounts given as the incremental levels, with only a

brief general description of the package. The failure of the second type of decision package to follow the generalized rules makes it difficult for managers to decide priorities for the final budget request. Also the failure of the second type of decision package to properly describe its activities is dangerous to the Coast Guard. There may be, hidden somewhere in the decision package, an extremely important project or program that may be inadvertently cut in the final budget analysis because no one above the Program Director/Manager knew it was contained in the level of the package that was cut.

Another weakness in the Coast Guard zero base budget request preparation is the absence of participation by levels of management below the Headquarters level. As discussed in Chapter I, the failure of top management to provide guidance, support and involve lower level management in the zero base budgeting process eliminates a valuable input to the process. This input is the knowledge and the experience that lower level managers obtain while on the job.

In the Coast Guard process top management prepares and ranks the decision packages with no input from any other levels. Thus, there is no need for any guidance or support from top management within the Coast Guard. However, the lack of guidance, support and participation eliminates any potential benefit that might be gained from lower level management and weakens the zero base budgeting process.

Selection Of Decision Units

This section deals with the selection of decision units in the Coast Guard budgeting process and is also directly linked to the next section dealing with accounting. This link occurs because improper selection of decision units for budgeting often complicates the accounting system. This may also work in reverse. Decision units may be appropriate for accounting purposes, but, impossible to budget with. The problem of the selection of appropriate decision units arise because there is no capability to trace costs as recorded by the accounting system to the decision units for which they were budgeted [Minmier, 1974].

In the current Coast Guard process decision units are programs. Planning, programming and budgeting is done through Program Directors/Managers using a defined Coast Guard program as the base for requesting funds.

Program decision units present problems to the Coast Guard since funds generated by a specific program are often utilized in other programs. The reason these funds impact upon several programs lies in the multi-mission capability of the Coast Guard facilities. Resources funded by one program are often used in the accomplishment of a mission assigned to a different program. The problems created by the multi-mission capability also create the opposite set of problems. If a resource funded by one program is deleted from the budget, the absence of that resource may also adversely affect another program.

Another problem arising from using programs as decision units is they do not correspond to the Coast Guard management responsibility

structure. The selection of decision units should parallel the responsibility structure for making budget decisions within the organization. If this concept is followed the responsibility for definite action is fixed. It also creates better management control and assists managers in carrying out the organization's goals and objectives [Minmier, 1974].

The use of programs as decision units follows the planning stage of the Coast Guard process, but, not the budgeting and expenditure stage. This is an overall weakness in the process.

Accounting

The information provided from the accounting system should be in a form that is directly comparable to the budget [Minmier, 1974]. The budget is an approved plan for spending. The accounting system should report actual spending. Unless the two are comparable, there is no reliable way of determining whether actual spending occurred according to the budget [Wildvasky, 1965]. At the end of the accounting period, managers should be able to take the accounting data and verify that actual spending corresponded to planned spending. The manager should also be able to use the accounting data to plan and support future periods' budget requests [Pyhrr, 1975].

The Coast Guard plans and budgets by program, however, the Coast Guard distributes and accounts for the expenditures by function (See Figure 4). The accounting information, recorded using object codes, identifies the type or class of objects on which the funds were expended. Unless the expenditure of funds is for a project or resource peculiar to a program, the multi-mission

Programs / Functions	SAR $10,000	ELT $20,000	MEP $30,000	... $40,000	... $50,000	Total Funding for Function
Air Station	$2,000		$10,000	$15,500		$27,500
378 Foot Cutter	$4,000	$12,000	$5,000		$25,000	$46,000
Coast Guard Group	$2,000	$6,000		$8,000	$6,000	$22,000
...	$2,000	$2,000	$15,000	$16,500	$19,000	$54,500
Total	$10,000	$20,000	$30,000	$40,000	$50,000	$150,000

Funds are budgeted by program. Approved funds are then taken from the programs and distributed to the various functions. The total of the amounts of funds received from the programs equals the total budget for the function. Expended funds are then accounted for by object code within the function.

Figure 4. Fund Distribution

use of the resources at Coast Guard units makes tracing of costs back to the funding program difficult because the budgeting process is based on programs and the fund distribution and accounting system on functions.

Within the current Coast Guard accounting system and budgeting process, the failure of the accounting system and budgeting process to coalesce has positive and negative affects [CG-255, 1976]. On the positive side the multi-mission nature of the facility demands flexibility in the expenditure of funds. The commanding officer of a unit must be able to quickly respond to the needs of the unit in order to meet the needs of the general public. The object codes in the accounting system are general definitions concerning the type or class of object on which the funds may be expended. The object code definitions are broad enough to permit the manager to shift funds to meet the changing needs of the unit, but narrow enough to ensure that the general intent for which the funds were budgeted is adhered to [CG-255, 1976].

However on the negative side, at higher levels in the management hierarchy the flexibility provided by the accounting system becomes a negative factor in the budgetary process. An example of how the flexibility could be a problem can be shown by the purchase of life jackets by the Search and Rescue program. Once the need has been identified a resource change proposal is prepared to justify the budget request. The request is approved and placed in the direct appropriations portion of the budget. After the funds are approved they are allotted to the unit and expended to purchase life jackets.

The life jackets were purchased primarily for use during the search and rescue operations of the facility. However, they will undoubtedly be used during the other operations the facility engages in. Marine environmental protection and enforcement of laws and treaties are only two of the programs that may benefit from the search and rescue program purchase of the life jackets. Other programs may have benefited from the purchase, but no part of the cost has been assessed to the different programs. Also, the program manager that requested the funds does not ultimately know, unless it is a major purchase that merits monitoring through the system, if the funds were a duplication of effort or did indeed solve the program's original problem. The only cost information available is the object code totals from the units and original resource change proposal.

The failure of the process and accounting system to match, with the result being the inability to trace costs accurately to programs, presents additional problems.

The first problem is the inability to measure performance. Since it is not possible to accurately assign costs to a program, efficiency and economy are difficult to measure. This failure impacts on management's control of the programs and inhibits monitoring by and assistance from top level management.

The second problem is an extension of the first problem. If costs are improperly assigned to a program at the benefit of another program, the elimination of the funding for one program can adversely affect the other program. Since the accounting system does not provide costs that can be traced to the budgeting

process, the total effect of the elimination of funds from one program during the budgeting process is difficult to predict. Currently, Coast Guard managers partially overcome this problem through personal experience and knowledge of the program relationships as they exist. The ability of the Coast Guard managers to compensate for this weakness is a strength of the managers in the Coast Guard and not a strength of the accounting system and budgeting process.

Summary

Whatever the process, pure zero base budgeting, the current Coast Guard process or some combination of the two, the information required to operate the process properly is often complex and confusing. Different tiers in the management hierarchy often require different forms of budgeting information and sometimes flexibility or lack of flexibility taxes management's ability to effectively and efficiently manage.

Support elements, such as the accounting system and planning, must be matched to budgeting to expedite and simplify the flow of information. If the support elements are not matched then management must act to compensate for the total process shortcomings. This appears to be the case with the current Coast Guard process. Experience, personal knowledge and cooperation enable Coast Guard managers at all levels to plan and budget for the operation of the Coast Guard. This experience and knowledge also enables top level Coast Guard managers to create a zero base budget from the primary or incremental budget. The creation of

this zero base budget, even if it is not accomplished in the text book manner, displays the confidence and knowledge the managers have in their programs.

However, no matter what is said about the Coast Guard process, it must be remembered that the Coast Guard has been successful in budgeting for its needs.

CHAPTER IV

RECOMMENDATIONS

This chapter presents recommendations for the improvement of the Coast Guard's current planning, programming and budgeting process and accounting systems to facilitate the use of zero base budgeting. The recommendations, although discussed in separate sections, should not be considered independent of each other. Though the implementation of each recommendation will affect the process in its own way, it may or may not impact upon the other recommendations. The recommendations have a common goal. The recommendations are presented as a means to provide a better zero base budgeting process for the Coast Guard.

The first recommendation presented involves the study and use of Coast Guard reports as a means to relate the current planning, programming and budgeting process to the accounting system. The ability to relate program budget requests, as developed by the planning, programming and budgeting process, to the actual expenditure of funds would provide planning and performance data for use in the zero base budgeting process. The requirements for and use of the data are contained in the predetermined generalized rules outlined in Chapter I.

The second recommendation presented concerns the development and use of surrogate output measures as a method of relating program budget requests to actual expenditures. A surrogate output measure is defined as something that serves as a substitute measure of output. A substitute measure of output is used because

actual output is difficult to measure. Surrogate output measures would provide a means of comparing actual and planned program costs. This comparison would be useful for future planning and the measurement of program performance. This information is important to the zero base budgeting process as discussed in Chapter I.

The third recommendation involves the use and development of program contribution and cost standards. Program contribution and cost standards are defined as the amount of benefit or cost which should be attributed to a program as a result of the operation of a resource. A resource is defined as any Coast Guard personnel, equipment or unit used to accomplish the missions of the Coast Guard as outlined in Chapter II. The standards are important because a resource may be funded by several different programs and currently there is no procedure for tracing the costs and benefits accrued by the resource back to the funding program. If standards were developed, data would be available for the creation of performance measures and planning information as required for the zero base budgeting process.

The fourth recommendation involves changes in the planning, programming and budgeting process and the accounting system. Changing the planning, programming and budgeting process from a process based on programs to a process based on functions, would facilitate the tracing of costs to the budgeting function through the accounting system. A comparison of actual and planned costs would then be possible and planning and performance measures could be utilized. Additionally, a change in the accounting

system is recommended which will facilitate the tracing of program costs back to the funding program. The recommendations if implemented will increase the availability of planning and performance information.

This chapter also contains a cost/benefit analysis of each recommendation. The analysis provides an estimate of the feasibility of undertaking the recommendations. The data required to develop the cost/benefit analysis was obtained through interviews with Coast Guard Headquarters personnel. All estimates used in the computations contained in the cost/benefit analysis are taken from the interviews.

For the purposes of this study the basic unit in the development of the estimated cost of extracting, modifying and developing program data is termed a program item. A program item is defined as a specific request for funds found in the Coast Guard budget request. These program items, as found in the budget request, are developed by one of the twenty-six programs in the Coast Guard. Thus, any program item can be identified with some program in the Coast Guard. In the fiscal year 1979 budget request there were approximately 1450 program items. The mean numbers of program items identified with each of the 26 programs is 56.

Headquarters personnel indicated that personnel costs are the major cost involved in extracting, modifying and developing data for program item requests. They estimate that it requires each program an average of 21 program staff working days to obtain the needed information. The cost to obtain the information necessary for an individual program item was estimated by dividing

the total salaries of the mean billeted personnel strength of a Headquarters program office by the mean number of program items identified with a program. This cost, defined as the mean estimated program item cost, is $450. The mean estimated program item cost is used as the standard against which all other cost savings or increases, associated with the recommendations, are compared.

The $450 estimated is sensitive to the 21 day time frame used in its computation. If, for example, the 21 day time frame varies plus or minus seven days the cost varies between $620 and $325 per program item. When assessing the cost/benefit analysis portion of each recommendation it must be remembered that each analysis is based upon best estimates of actual data and changes in the best estimates may alter the results.

Reports

In Chapters II and III material was presented demonstrating the difficulty the Coast Guard has in tracing actual program costs and charging them against the proper funding program. Coast Guard reports, as mentioned in Chapter II, may provide the needed information to trace costs back to the funding program, thereby providing the link between actual program costs and funding programs.

This section discusses the use of reports as a means to relate the planning, programming and budgeting process to the accounting system. The ability to relate or crosswalk program budget requests, through the use of information contained in reports, to the actual expenditure of funds provides the zero base budgeting process with needed planning and performance information.

It is recommended to insure reports are correctly developed and reflect the best information possible a committee composed of the Coast Guard Program Directors/Managers, with the Chief of Staff as chairman, be established. The Program Directors/Managers, as stated in Chapter II, are the central figures in the development and operation of Coast Guard programs. The Program Director/Manager is responsible for the development of major program policy and the supervision of the day-to-day operation of Coast Guard programs. The Program Director/Manager staff serve as the point of collection for program information and provide the Program Directors/Managers with the broadest outlook on the informational requirements of each program. Collectively, the Program Directors/Managers have an overall view of the Coast Guard that will enable them to modify and develop reports that fit the total Coast Guard program needs. The exact procedure for developing these reports is a matter for discussion between Coast Guard Program Directors/Managers. Any impasses the Program Directors/Managers reach can be settled by the Chief of Staff, since this office is directly responsible to the Commandant for the operation of the Coast Guard programs.

As an example of how this committee would operate, assume that each unit in the Coast Guard currently submits a monthly report on the number of personnel assigned to the unit. This report is used to monitor the active duty strength of the Coast Guard. The report only represents the total number of active duty personnel. Assume that the Program Directors/Managers decide that if they know the total number of Chief Petty Officers in

the Coast Guard they can, by multiplying this number by the average salary of a Chief Petty Officer, which can be generated by using the accounting system, determine program output and costs. Through the action of the committee the personnel report could be modified to detail not only total strength, but, a breakdown indicating the total number of Chief Petty Officers at each unit. It then becomes a simple matter to add up the individual unit counts to determine in any month the number of Chief Petty Officers in the Coast Guard.

It should be noted that the use of this report by all of the Program Directors/Managers could result in multiple counting of resource utilization and the benefits derived from the resources. It is anticipated that problems of this nature may arise due to the multi-mission nature of the Coast Guard. However, the committee provides a forum within which problems of this nature can be discussed. If the problems are not settled the Chief of Staff can make the final decision.

The initial cost to organize a committee of this nature and develop or modify the required reports is estimated to be approximately $410,000. This cost consists mainly of rewriting approximately one third of the existing reports and instructional manuals at an estimated rewrite and distribution cost of $8000 each. The availability of the new reports and manuals, however, should reduce the program item costs to approximately $100 per program item as compared to the current $450 per program item. The $100 figure is computed using the cost of three days of personnel time to extract, modify and develop the needed data for a program item

instead of the current average estimate of 21 days of personnel time. Using the current government discount rate of 10% it will take approximately one and one half years to recoup the initial additional cost of rewriting the reports and manuals. After this time the Coast Guard will not only save money and time, but, will have the capability to build a permanent program data base that does not completely rely on the experience and knowledge of the Program Director/Manager. The solution to the problem of the planning, programming and budgeting process would no longer be solely dependent on the ability of the manager as was discussed in Chapter II. The ability to relate the planning, programming and budgeting process to the accounting system would facilitate the task of the Program Director/Manager in planning and operating Coast Guard programs.

Surrogate Measures

This section discusses the use of surrogate measures to trace the use of funds and resources for use in the zero base budgeting process. A surrogate measure is used when it is not feasible to use a principle measure of program output [Anthony, 1975]. In the Coast Guard process the principle measure of input is the cost of programs. However, once the funds are distributed to the units the actual expenditure of the funds become difficult to trace back to the funding program. This makes measuring performance, as indicated by the expenditure of funds, difficult since there is no direct link between the inputs of funds and the use of funds. The Coast Guard currently traces the use of funds back to the requesting program using surrogate measures. An example

of the current use of surrogate measures is the Coast Guard Abstract of Operations Report. This report provides a units estimate of the time it spends performing Coast Guard program missions. The time is then used to estimate the portion of the units total expenditures that should be charged to a program.

The general rules presented in Chapter I specify that performance measures be provided for zero base budgeting. These performance measures provide managers with an indicator for comparing one work center with another. Also performance measures provide lower level operational managers with established standards for the evaluation of individual units. If better surrogate measures relating to the program output can be developed at the unit level, then links between inputs and outputs will be established and performance measurements available.

In March 1975, Lt. R.A. Asbey, USCG, suggested the use of message traffic as a measure of resource allocation. Lt. Asbey classified each type of message, by specific program, and assumed that each message was directly related to the use of specific program resources. The number of messages received and the classification of the messages provided a breakdown for charging resource utilization back to the programs. In this manner performance measures and planning information were available.

However, there are dangers inherent in the use of surrogate measures. One danger is that the achievement of the surrogate could become more important than achieving the unit's objective. For example, Coast Guard personnel could become intent on sending SAR messages, to demonstrate the importance of their program and

neglect the actual objectives of the SAR program as defined by the Coast Guard. Instructions and guidance on the use and relationship of the surrogate measure to the program must be defined and understood by the personnel using and being evaluated by the measure. If the personnel do not understand the function of a surrogate measure then the use of the surrogate measure is meaningless [Emory, 1976]. Given the potential for the surrogate measure to promote dysfunctional behavior, management must frequently monitor the use of the surrogate measure.

Another danger in the use of surrogate measures may come about when there are no SAR messages during a specified accounting period. If there was no SAR activity during that period, no credit should be given to the SAR program. Successive zero SAR message periods might indicate that the SAR program should be eliminated from the budget request. However, the benefit of unused SAR capability may be greater than the cost of the program. Overreliance on the use of surrogate measures has the potential to lead to incorrect management decisions. Surrogate measures never provide a complete solution, but, they are better than no solution at all [Anthony, 1975].

The development and use of surrogate measures should take place at the Program Director/Manager level. As discussed in Chapter II, the Program Director/Manager is responsible for the operation of the program and thus, should have the best knowledge of its operation and requirements. This information, coupled with current and historical trends and patterns, should assist the manager in developing surrogate measures for the program [Burke, 1974].

The Program Director/Manager can provide the manpower to facilitate the development of the required program surrogate measures.

The estimated program item cost to develop surrogate measures of output is approximately $1100. This estimate is based on a development time of 4½ weeks for each surrogate measure. The 4½ week time period includes: 2 weeks for the personnel to familiarize themselves with a unit and its operations; 1½ weeks to collect and organize data; 1 week to develop the data and a one month time period during which 2 full working days out of the month are devoted to monitoring and updating the surrogate measures. If surrogate measures need to be developed for 2/3 of the estimated program items it will initially cost an estimated $1.6 million to develop and test the measures. The 2/3 estimate is based upon the multi-mission capability of the Coast Guard units and the likelihood that there will be some overlap in the measures and thus there will be no need to develop measures for all program items. Once the measures are developed the estimated time to extract data for program use will be reduced from a current 21 days for each program to an average estimated 2 days for each program. Using the average billeted personnel cost of a program office this results in an annual savings of $380,000 each year for the Coast Guard. Given the $380,000 annual savings discounted at 10%, it would take approximately 6 years to recover the $1.6 million initial investment.

Standard Costs

In Chapter I the predetermined generalized rules for zero base budgeting require the assignment of costs and benefits to

decision packages. These costs and benefits are used in the preparation of a cost/benefit analysis for each funding level. The information derived from the decision package analysis then plays a part in the priority ranking of the basic decision package and its incremental levels [Emory, 1976].

In the Coast Guard the multi-mission role of its operational units and the failure of the accounting system and the planning, programming and budgeting process to coalesce makes it difficult to accurately assign costs and benefits to any program. The inability of management to assign costs and benefits hinders management control and planning in the zero base budgeting process [Pyhrr, 1975]. When actual costs and benefits are not available, standard costs and benefits may be developed and used in decision making [Gorden, 1974].

This section discusses the development of program contribution and cost standards for use in the Coast Guard zero base budgeting process. The ability to identify and assign program contribution and cost standards directly affects the zero base budgeting process in two areas. The first area is management control information and the second area is planning.

In the first area, management control information, standard program contributions and costs provide the base to which actual program contributions and costs can be compared. Cost and program overruns can be detected by comparing actual and standard contributions and costs. Standards are useful in controlling costs because they provide goals for performance and references against which actual performance may be evaluated.

The second area where standards affect zero base budgeting is in planning. If standard costs and program contributions for a resource are known, managers can predict how the addition or deletion of a resource affects a unit. This information would not only provide the total cost change, but, if standards and program contribution measures are properly developed, the standards would help identify to what programs the changes should be charged.

It is recommended that the control and development of the standard costs and program contributions should be the responsibility of Headquarters Program Directors/Managers. The Program Directors/Managers control the planning, programming and budgeting process in the Coast Guard. Additionally, they are directly responsible to the Chief of Staff for the successful completion of Coast Guard programs. The responsibility vested in these personnel makes the Program Director/Manager the best location for the development and maintenance of the standards.

There are several areas of information that are available to the Program Director/Manager for developing the standards. These areas are historical data, personal knowledge, experience, and statistical sampling [Gordon, 1974]. Initially historical data and personal knowledge and experience provide the most available information for the creation of standards.

It is estimated that using senior program personnel's knowledge and experience it would take approximately 21 days to examine and develop program contributions and cost standards at a cost of $300 per program item.

This represents a savings of $150 per program item over the current $450 per program item and results in an estimated $220,000 a year total savings to the Coast Guard. The $150 per program item savings is the result of the assumption that only senior personnel would be involved in the development of the program standards. This frees the rest of the program personnel for other tasks and saves the personnel costs associated with them. The $220,000 annual savings computation is based upon average of 56 program items per program; 26 programs in the Coast Guard and a savings of $150 per program item development over the initial estimate of $450 per program item. The standards can be developed, utilized and updated every year and still save $220,000 annually.

The standards based on experience and personal knowledge should, however, be used cautiously. The variation of management skills from manager to manager would indicate that the quality of the standards could vary. The potential variability would require the continual updating and monitoring of the standards to insure that they reflect accurate measures. This updating could be done during the year at negligible additional costs. The utilization of personal experience and skill is a quick method of developing the required information for the planning and program performance measurement.

Another method of developing program contribution and cost standards is through statistical sampling of program resources. It is estimated that it would take 2 months to select, examine and sample the resources determined necessary for the development of program standards. The resources selected for the study

would have to be carefully selected by program personnel to insure they reflect an accurate measure of the program output. It is recommended that the selection of these resources be based upon the knowledge and experience of program personnel. The cost of statistically developing these standards is estimated at $1100 per program item or approximately $1.6 million for the entire Coast Guard. This estimate is based on personnel costs of $54,000 plus additional travel costs of $6000 for each program. Once the standards are available it is estimated that it will only take 3 days to extract and modify the required program information needed for planning and performance measure development. This represents a future information cost of only $100 per program item instead of the current $450 per program item. Using an annual savings of $350 per program item, 56 items for each program and 26 programs in the Coast Guard, this means an annual cost of $510,000 to extract, modify and develop the needed program information. This represents a savings of $160,000 a year for the Coast Guard over the current costs. The time needed to recover the initial $1.6 million cost of developing the standards, using the current government discount rate of 10%, is in excess of 20 years.

In order to better understand how program contribution and cost standards could be utilized assume the Coast Guard has established standard costs and program contributions for small boats. The small boat has multi-mission capability, even though it may have been purchased using funds from one specific program such as Search and Rescue (SAR). The program contribution standards of this multi-mission resource are estimated as the percentage of

time the small boat spends accomplishing its various missions. For this example it will be assumed that surveys and the unit logs indicate that the small boat is used 35% of the time for SAR, 35% for ELT and 30% for MEP. Thus, instead of the purchase funds being completely charged to the SAR program, the standard program contribution percentage established for small boats would enable managers to credit the individual programs with the proper percentage of the costs. The operating costs of the small boat could also be charged to the individual programs to present a better representation of the program costs. Managers would also be able to predict the impact of the addition or deletion of the small boat from the budget request and determine what percentage of the costs should be charged to the individual programs. However, it is an oversimplication to assume that the funding of the small boat in the example is that simple. For example, if the ELT Program Director/Manager refuses to fund the 35% of the standard program contribution costs it is unrealistic to use 65% of a small boat. There still must be communication and coordination between programs to insure problems of this nature do not happen.

Planning, Programming and Accounting

This section discusses some changes in the planning and programming process and the accounting system which could be made to facilitate zero base budgeting.

In Chapter I it was argued that the selection of decision units for budget preparation should parallel the responsibility structure of the organization [Minmier, 1974]. This means that

decision units should be selected to parallel the flow for operational decision making in the organization [Pyhrr, 1975]. In the Coast Guard the operational decision making for fund expenditure is by function. Functions are defined in the Coast Guard financial obligation plan and consist of entities such as air stations, Coast Guard Groups and vessels. The expenditure of funds is also accounted for by function.

Chapter II, however, explains that planning and programming for budget preparation in the Coast Guard is done by program. This produces a problem because the expenditures by function cannot readily be traced to the original budget allocation operation decision making which is by program. If functions were used in planning and programming, then the present operational decision making structure and accounting system, would parallel each other. This would permit the tracing of costs back to the responsible functions and provide information for planning and development of performance measures. An example would be to consider air stations as a decision unit. A decision package could then be created using all the air stations and/or the mission they provide. Each air station and/or a mission would then represent an incremental level in a package. The impact of the addition or deletion of an air station mission or complete air station could then be determined. Additionally, performance levels would be easily traced back to the function since the two processes match.

The modification of the planning and programming process to fit the accounting system must be the responsiblity of the Commandant

and Chief of Staff of the Coast Guard. The Commandant, as the head of the Coast Guard is the only official within the organization with the authority to reorganize the agency [CG-229]. The Chief of Staff is the officer responsible for the general operation of the Coast Guard and is directly responsible to the Commandant for the successful operation of the agency.

The Commandant and the Chief of Staff will have to study the functions of the Coast Guard and determine what programs the functions encompass. Once this study is completed each function could be allocated program personnel to fill its requirements. These program personnel would provide the program requirements knowledge for the function and insure that funds for the functions programs are requested in the budget.

The estimated cost to reorganize the Coast Guard along functional lines of responsibility, change existing instructions and manuals and retrain personnel is estimated at $3.8 million. It is estimated that the reorganization would enable personnel to obtain the palnning and performance data in approximately 1/3 of the time it presently takes. This is possible because all decisions for requesting, expending and accounting for data would now be done on a common functional basis and not fragemented across programs. The ability to estimate monetary savings that would result from such a reorganization is extremely difficult. Currently there is no knowledge of the average number of program items or even the number of programs that would exist within the new system. It is reasonable to assume that any savings would take considerable time to recover given that the initial cost of

reorganizing the Coast Guard is so substantial. A less costly way to develop the needed information would be to increase the number of object codes in the accounting system.

The recommendation involving the accounting system requires increasing the number of object codes so each object code is more program specific. The ability to classify an expenditure by an object code that is traceable to a program would assist managers in future planning and development of performance measures. The modification of the accounting system to be more program specific would create a parallel structure of the responsibility for expending funds and budget preparation.

The responsibility for developing the object codes will focus on the Program Directors/Managers. The Program Directors/Managers are the center of all budgeting activity and provide the opportunity to develop knowledge concerning program operation and development. It is recommended that the Program Directors/Managers, working in conjunction with Coast Guard financial accounting personnel, develop the object codes required to operate Coast Guard programs. Coast Guard financial personnel are included in the development of the object codes, because they are responsible for the accounting system and have the experience and knowledge to determine what will and what will not be compatible with the system.

It is estimated that it would take approximately one month for the development of the information and object codes necessary to accomplish this recommendation. Additional requirements to implement this recommendation include printing and distribution

costs of manuals, instructions and training of personnel. The total initial cost for the implementation of this recommendation is estimated at $780,000. It is estimated, however, if this recommendation were implemented the cost of obtaining data would be reduced from $450 to $100 per program item. This is based on the estimate that it would take 3 program staff personnel working days to obtain the needed program item data instead of the current estimated 21 days. Using the current government discount rate of 10% it will take a little less than 2 years to recoup the initial cost of this recommendation.

Process Installation

If any of the recommendations made earlier in this chapter are accepted it is helpful to understand how these recommendations could best be implemented. There are several prerequisites that must be considered before any successful attempt is made to modify any management process or structure. These prerequisites are: top management support, design and time [Anthony, 1975].

Top Management Support

A prerequisite to the successful installation of a new management process or structure is the active support and involvement of the top management [Anthony, 1975]. Management support means more than acquiescence. Top management must understand the general concepts and objectives of the new process well enough to see the benefits accruing to each individual, and must explain to lower level managers how the new process will help them and the organization as a whole. Top management must also provide

guidance and instruction to lower level managers to assist them in the operation of the process.

Design

Another prerequisite for success is the creation of an adequate staff of people to design and install the new process [Falcon, 1965]. Designers are staff personnel doing a specialized task. They require ready access to top management in order to insure the process reflects the style of management that top management wants.

Designers must also spend time with lower level managers who will operate the process. These managers can assist the designer in determining information requirements needed to properly operate the new process. However, the designer should be careful when determining what information lower level managers believe they need.

It has been found, in recent years, that operating managers do not know what information they need [Anthony, 1975]. In particular, lower level managers are not aware of the existence of information which could be of great assistance to them. The best approach is, therefore, for the designer to indirectly determine what information the lower level manager needs and design the process based on what the manager should need [Anthony, 1975].

Finally, the discussions with lower level managers are important, second only in importance to the support of top management, in that they assist in obtaining support for the new process. The more lower level managers believe they are involved in the changes, the greater their willingness is to accept those changes.

Time

A final prerequisite to the successful implementation of a new process is that the design and implementation of the process be given time to evolve [Burk, 1974]. However, the time allowed will never be quite enough because there are always refinements and additional educational efforts that would be worthwhile.

Conclusion

In conclusion it has been demonstrated that a problem in the interaction of the Coast Guard planning, programming, and budgeting process; and the accounting system; and zero base budgeting exists. This problem is the inability to relate actual program costs and outputs to program inputs. The result is difficulty for the Coast Guard in developing planning and performance information which is necessary for the development and operation of a proper zero base budgeting process. This study discusses several recommendations that if implemented, will facilitate zero base budgeting in the Coast Guard. The specific procedures for implementing these recommendations are topics for future studies.

BIBLIOGRAPHY

An analysis of the president's budgetary proposals for fiscal year 1979 (Congressional Budget Office). Washington D. C.: U. S. Government Printing Office, 1978.

Anderson, D. N. The secret behind zero base budgeting. Managerial Planning, January/February, 1978, 26 (4), 17-18.

Anthony, Robert N. ZBB: A useful fraud? Government Accountants Journal, Summer, 1977, XXVI (2), pp. 7-10.

Anthony, Robert N., and Herzlinger, Regina, Management control in non-profit organizations, Homewood, IL: Richard D. Inwin, Inc., 1975.

Asbey, R. A. Subhead 30.00 support and planning model. Unpublished thesis, Naval Postgraduate School, Monterey, CA, 1975.

Auditing. Defense Management Journal, Washington Logistics Study Information Exchange, 1975.

Austin, Allan L. Zero-base budgeting Organizational impact and effects. New York: AMA Survey Report, 1977.

Bledsoe, R. C. What top managers ought to know about ZBB. Bureaucrat, Spring, 1978, 7 (1), 56-59.

Broadnex, Walter D. Zero-base budgeting: A new budgeting technique, management tool or state of mind? Government Accountants Journal, Winter, 1977-1978, XXVI (4), 26-29.

Burk, James Dale. Information requirements of the management information system relating to the budgetary decisions of a coast guard program manager. Unpublished masters thesis, Naval Post-graduate School, Monterey, CA, 1974.

Burroughs, K. E. Implementing zero-base budgeting. Financial Executive, March, 1978, 46 (3), 53-55.

Camarow, M., and McIntyre, J. T. Zero-base budgeting. Bureacrat, Summer, 1978, 7 (2), 400-449.

Check, Logan M. Zero-base budgeting comes of age. New York: AMACOM, 1977.

Clements, B. D. Zero-base budgeting: Implications for managers. Unpublished research report, Air War College, Air University. Maxwell AFB, AL, 1978.

Coast guard manual of budgetary administration. (CG-255, Department of Transportation). Coast Guard, December 20, 1976.

Coast guard organization manual (CG-229, Department of Transportation). Coast Guard.

Coast guard planning and programming manual (COMDTINST M16010.1, Department of Transportation). Coast Guard, June 29, 1978.

Conner, R. J., and Walker, D. A proposed conceptual model for the integration of zero-base budgeting. Unpublished thesis, Air Force Institute of Technology. Wright-Patterson AFB, OH, September, 1978.

Corea, A. N. Motivation and participation in budgeting. Unpublished thesis, Air Command and Staff College. Maxwell AFB, AL, 1976.

Davis Otto A., Dempster, M. A. H., and Wildavsky, Aaron. A theory on the budgeting process. American Political Science Review, September, 1966, 60 (3), 529-547.

Debeer, A. M. A design for evaluating the federal government's experience with ZBB, Bureaucrat, Spring, 1978, 7 (1), 64-67.

Dickerson, H. G. Needed - A different approach to army budgeting. Unpublished research report, U. S. Army War College. Carlisle Barracks, PA. 1971.

Droper, F. D. Zero-base budgeting in the federal government: Some preliminary observations on the first year's effort. Government Accountants Journal, Spring, 1978, XXVII (1), 22-30.

Driessnack, H. H. Zero-base budgeting. Bureaucrat, Spring, 1978, pp. 36-40.

Driessnack, H. H. ZBB - A critique. Armed Forces Comptroller, May, 1979, 23 (2), 6-9.

Eigel, R. L. Paralleling the PPBS in the department of defense. Unpublished research report, Defense Management College. Fort Belboir, VZ, 1977.

Emory, C. William. Business Research Methods. Homewood, Illinois: Irwin, Inc., 1976.

Extending the use of staff developed budgets (Office of the Comptroller of the Army). Washington, D. C. Defense Logistics Study Information Exchange, 1968.

Fain, Tyrus G. Federal reorganization: The executive branch. New York: R. R. Bowker and Company, 1977.

Falcon, William D. Reporting financial data to management. New York: American Management Association, 1965.

Fauntleroy, L. B. Reflections on ZBB. Bureaucrat, Spring, 1978. 7 (1), 10-14.

Financial Management. Armed Forces Comptroller, 1978, 23 (1), 4.

Financial management in the federal government (Joint Financial Management Improvement Program). Washington, D. C.: Defense Logistics Study Information Exchange, 1974.

Fiscal year 1979 budget extimates, Submission to congress (Department of Transportation). Coast Guard.

Fiscal year 1979 budget estimates and supplementary budget data, Submission to office of management and budget (Department of Transportation). Coast Guard.

Fitzgerald, William H., Jr., CDR. On making budgetary decisions for the U. S. coast guard. Armed Forces Comptroller, April, 1969, 14, 38-42.

Fremgen, James M. Accounting for managerial analysis, Homewood, Il: Richard D. Irwin, Inc., 1976.

FY 1979 operating state financial plans (COMMANDANT NOTICE 7100) Coast Guard, April 30, 1979.

Genthner, Henry, and Hebert, Joseph. Automating zero base budgeting. New York: Petrocelli Books, Inc., 1977.

Goldman, H. H. ZBB - Toward an informal approach. Managerial Planning March/April, 1978, 26 (5), 34-35.

Gordon, Myron J., and Shillinglaw, Gordon. Accounting: A management approach. Homewood, IL: Richard D. Irwin, Inc., 1974.

Granof, Michael, and Kinzel, Dale A. ZBB: Modest proposal for reform. Federal Accountant, December, 1974, XXII, 50-56.

Gunderson, R. H. Zero base budgeting - A comparative analysis. Unpublished masters thesis, Naval Postgraduate School. Monterey, CA, 1977.

Hebert, Joseph L. Experiences in zero-base budgeting. New York: Petrocelli Books, Inc., 1977.

Helton, Morris Deen. The planning programming, budgeting system as a Coast Guard management tool. Unpublished masters thesis, Naval Postgraduate School. Monterey, CA., June, 1970.

Hermanson, Roger H. A look at zero-base budgeting - The Georgia experience. Government Accountants Journal, Winter, 1976-1977, XXV, (4), 1-11.

Hermanson, Roger H. A new era of budget philosophy on the federal scene - ZBB - How to make it work. Government Accountants Journal, Summer, 1977, XXVI (2), 11-14.

Hill, Walter D. Implementing zero base budgeting - The real world. (The Planning Executive Institute) Oxford, OH, 1977.

Horngren, Charles T. Cost Accounting. Englewood Cliffs, N.J., 1962.

Hude, Arthur C., and Shafritz, Jay M. Government budgeting: Theory·Process·Politics. Oak Park, IL: Moore Publishing

Kendall, Neil F. The problems of allocating the cost of coast guard capital outlays in the planning-programming-budgeting system. Unpublished masters thesis, George Washington University. Washington D.C., June 2, 1958.

Kleiner, G. J. An analysis of initial efforts to implement zero base budgeting. Unpublished research report-thesis, Air Force Institute of Technology. Wright-Patterson AFB, OH, 1977.

Markham, E. Zero base budgeting in action. Bureaucrat, Spring, 1978, 7 (1), 48-50.

Mary, R. Myth, magic, and administratives. Administration and Society, August, 1978, 10 (2), 131-138.

McGinnis, James F. Pluses and minuses of ZBB. Administrative Management, September, 1976, XXXVII, 22-23.

Miller, R. E. ZBB in the federal government. Bureaucrat, Spring, 1978, 7 (1), 5-9.

Minmier, George S. An evaluation of the zero base budgeting system in government institutions. AtlantaN University Microfilms International, 1975.

Minmier, George S. An evaluation of zero base budgeting as a tool for planning and control of discretionary costs. London: University Microfilms International, 1974.

AD-A075 488 NAVAL POSTGRADUATE SCHOOL MONTEREY CA F/G 5/1
AN ANALYSIS OF THE RELATIONSHIP OF COAST GUARD ZERO BASE BUDGET--ETC(U)
SEP 79 C L MILLER

UNCLASSIFIED NI

2 OF 2
AD-
A075488



END
DATE
FILMED
11-79
DDC

Mission budgeting decisions and illustration of (U. S. General Accounting Office). Washington D.C.: Defense Logistics Study Institute, 1975.

Morrison, Donald M. Program budgeting in the united states coast Guard. Unpublished masters thesis, George Washington University. Washington D.C., April 30, 1966.

Mwacham, Bernard. Coordination of the financial management planning process (Report Army Logistics Mangement Center). 1974.

Newland, C. A. The federal budgeting context of ZBB. Bureaucrat, Sprin, 1978, 7 (1), 60-63.

Nidever, Richard L., Col. Army zero-base budgeting. R&D Magazine, February, 1978, 19 (1), 2-4.

Pawlak, M. J. Planning, programming, budgeting system or zero base. Unpublished research report, Air War College, Air University. Maxwell AFB, AL, 1978.

Peterson, S. W. An introduction to the new federal budget procedures. Unpublished thesis. Air Command and Staff College. Maxwell AFB, AL. 1977.

Preparation and submission of budget estimates (Circular No A-11, Revised, OMB). Washington, D.C.: U.S. Government Printing Office, June, 1977.

Pyhrr, Peter A. The zero base budgeting approach to government budgeting. Public Administrative Review, January/February, 1977, pp. 1-8.

Pyhrr, Peter A. ZBB. Harvard Business Review, November/December, 1970, pp. 111-121.

Pyhrr, Peter A. Zero base budgeting - A practical management tool for evaluating expenses. New York: John Wiley and Sons, 1975.

Pyhrr, Peter A. Zero base budgeting: Where to use it and how to begin. Advanced Management Journal, Summer, 1976.

Rajcic, J. M. The federal budget - A study in decisionmaking. Unpublished thesis, U.S. Army War College. Carlisle Barracks, PA, 1975.

Reckers, Philip. Zero base budgeting - A new home in the federal government? Government Accountants Journal, Spring, 1977. XXVI (1), 40-46.

Rosenberg, P. Zero-base budgeting. Local Finance, February, 1978. 7 (1), 29-36.

Sarant, Peter C. Zero-base budgeting in the public sector: A pragmatic approach. London: Addison-Wesley Publishing Company, 1978.

Silver, J. D., and Brown, R. L. Where does zero-base budgeting work? Harvard Business Review, November/December, 1977, 55 (6), 76-84.

Sonner, B. C. Evaluation of the coast guard subhead 30.00 program. Unpublished masters thesis, Naval Postgraduate School. Monterey, CA, 1974.

Stans, M. H. Federal budget. Unpublished report, Industrial College of the Armed Forces. Washington, D.C., 1958.

Stonich, Paul J. Zero base planning and budgeting: Improved cost control and resource allocation. Homewood, IL: Dow Jones - Irwin, 1977.

Stonich, Paul J., and Harvey, Fredrich W. The new lead for budgeting: Zero base planning. Today's Manager, May-June, 1976, pp. 13-16.

Subhead 30.00: Operating and maintenance costs, financial management and administration (COMMANDANT INSTRUCTION 7132.7A). Coast Guard, February 10, 1972.

Tyler, Charlie B. ZBB: A critical analysis. Southern Review of Public Administration, June, 1977.

Watkins, W., Jr. Evaluating zero base budgeting. Managerial Planning, September/October, 1978, 27 (2), 34-37.

What it means to build from zero? Business Week, April 18, 1977, pp. 160-164.

White, K. H. PPBS and policy analysis - Are they really compatible. Unpublished research report, U.S. Army War College. Carlisle Barracks, PA, 1972.

Wholey, Joseph S. Zero-base budgeting and program evaluation. Toronto: Lexington Books, 1978.

Wildavsky, Aaron, and Hammond, Arthur. Comprehensive verses incremental budgeting in the department of agriculture. Administrative Science Quarterly, December, 1965, pp. 321-346.

Williams, J. M. ZBB and the theory of finance. Armed Forces Comptroller, May, 1978, 23 (2), 10-15.

Zero base budgeting (Bulletin No 77-9, OMB). Washington, D. C.: U. S. Government Printing Office, April, 1977.

Zero-base budgeting. Commanders Digest, September, 1977, 20 (17), 1-16.

ZBB: A way to cut spending or a gimmick? U. S. News and World Report, September 20, 1976, pp. 79-80.

ZBB: One way to erase needless government programs. Nations Business, November, 1976, pp. 52-56.

ZBB planning and budgeting: An integrating concept. Management Counselor, January, 1977.

INITIAL DISTRIBUTION LIST

		No. Copies
1.	Defense Documentation Center Cameron Station Alexandria, Va. 22314	2
2.	Library, Code 0142 Naval Postgraduate School Monterey, Calif. 93940	2
3.	Defense Logistics Studies Information Exchange U. S. Army Logistics Management Center Fort Lee, Va. 23801	1
4.	Department Chairman, Code 54 Js Department of Administrative Sciences Naval Postgraduate School Monterey, Calif. 93940	1
5.	Asst. Professor. E. Euske, Code 54 Ee Department of Adminstrative Sciences Naval Postgraduate School Monterey, California 93940	1
6.	Edward Fincke, CDR, S.C., USN, Code 54 Fi Department of Administrative Sciences Naval Postgraduate School Monterey, California 93940	1
7.	LT C. L. Miller, USCG 1212 Summerfield Dr. Herndon, VA. 22070	2