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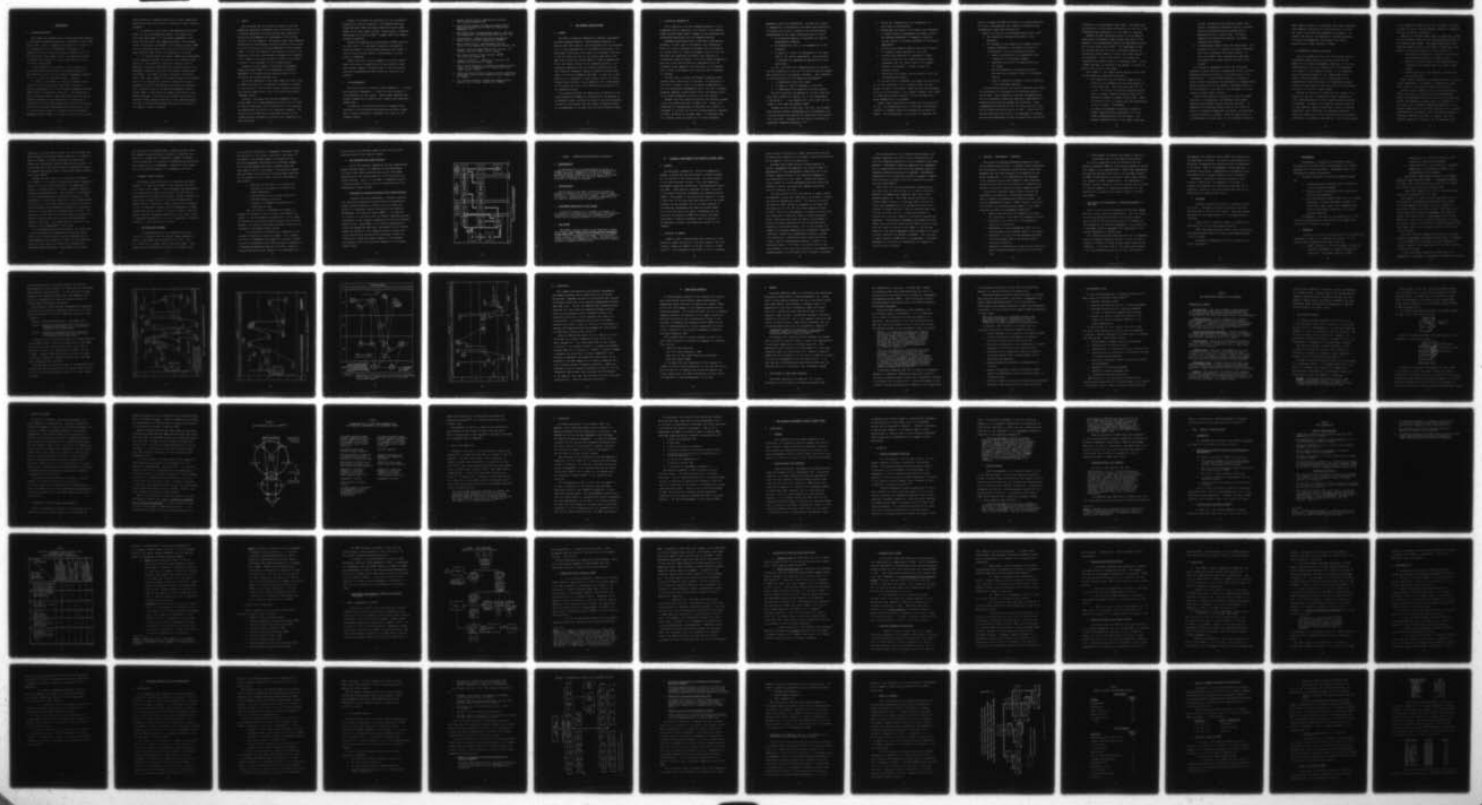

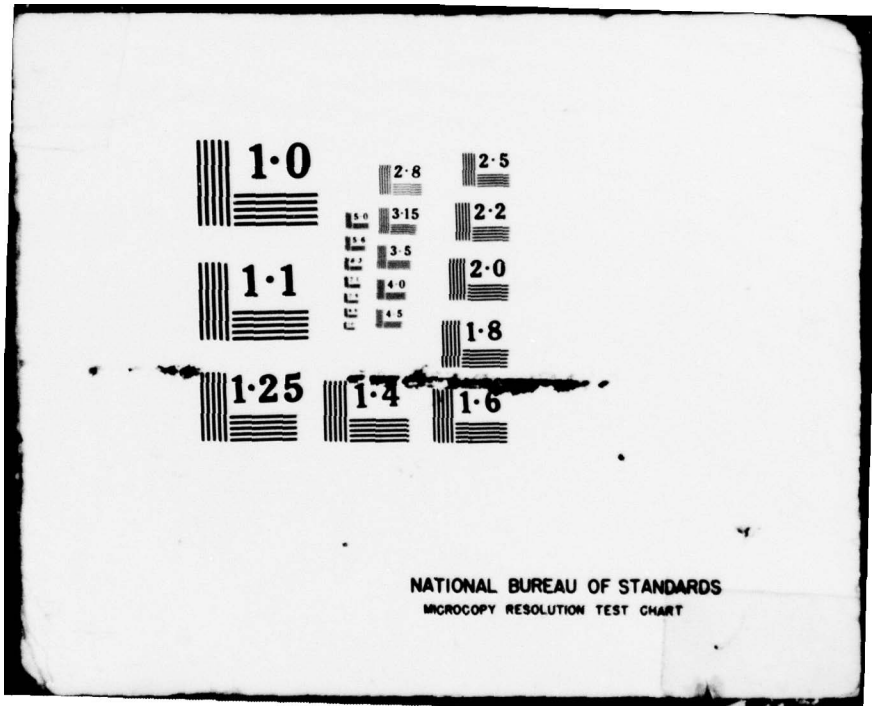
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6 A MULTIDIMENSIONAL ANALYSIS OF DOA'S BUDGETARY PROCESS USING ZERO BASE BUDGETING AND THE TRAINING MANAGEMENT CONTROL SYSTEM.

by

10 Royal A./Brown, III
Peter C./Correa

11 March 1979

Thesis Advisor: A. C. Crosby

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A MULTIDIMENSIONAL ANALYSIS OF DOA'S BUDGETARY PROCESS USING ZERO BASE BUDGETING AND THE TRAINING MANAGEMENT CONTROL SYSTEM

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MASTER OF SCIENCE IN MANAGEMENT

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ABSTRACT

This thesis report is a multidimensional analysis of the Federal budgeting process as it pertains to the United States Army financial manager. Summarized information is presented concerning the evolution and current state of the Federal Budget System. The Planning, Programming, and Budgeting System is described both with respect to its origin and present application. The concept, process, and Federal implementation of Zero Base Budgeting is discussed. The Training Management Control System as a new budgeting tool to justify Operation and Maintenance, Army Program 2 mission funds is introduced. A methodology applying the interface of the Training Management Control System and Zero Base Budgeting is developed for utilization in the budgeting process. The cruciality of program evaluation and budgetary performance feedbacks are discussed. Recommendations are included describing ways improvements can be made in: the Training Management Control System, the budgeting process for training dollars and the development of effectiveness measures.

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I. INTRODUCTION

A. BACKGROUND/PURPOSE

This thesis is concerned with a multidimensional analysis of the Federal budgeting process as it pertains to the United States Army. Since it appears that funds will continue to be constrained within the Department of Defense, it is imperative that any potential financial manager within the DOD structure be well aware of both the budgeting process in general and its specific current and potential "state of the art" procedures.

It was therefore the contention of the authors that this thesis report should serve the primary purpose of a self-teaching vehicle for the financial management community of the U. S. Army in three major ways. These are:

1. Firstly, this report is basically targeted toward officers in the United States Army being schooled for eventual assignments in Officer Personnel Management Systems (OPMS) Code 45 (Comptroller) positions. This particular group of officers needs to gain familiarity with the entire budgetary spectrum and the need for such information is intensified by the diverse backgrounds of the officers being schooled for eventual comptroller-related positions. Due to the dual-track nature of the Army's Officer Personnel Management System (OPMS) it is often the case that an officer

being trained at a graduate school for a future comptroller position may have had little or no exposure to Army financial managment.

2. In addition to providing these personnel with information on the macro-budgeting process, this report will also give some insight into the latest management tools being utilized within the budgeting process. The concepts behind the Planning, Programming, and Budgeting System (PPBS) will be examined as well as the evolution and use of Zero Base Budgeting (ZBB) within the Department of the Army.

3. To further enhance the target community's understanding of the budgetary process, the authors give a practical perspective to this report by isolating a specific area of budgetary concern and demonstrating the relationship of the management budgeting tools with some present systems under development. The report focuses on Operation and Maintenance, Army (OMA) Program 2 (P2) mission funds as an excellent vehicle to accomplish this practical application since it represents the basic Army mission and allows the demonstration of potential use of the Training Management Control System (TMCS) to facilitate the budgeting process for this specific program. This focus also allowed the authors to consider further sophistications of the budgetary process relating to effectiveness issues associated with training at a specific level of funding.

B. SCOPE

The following text is initially oriented to provide summarized background information that will serve as both a learning experience for any potential Army comptroller as well as the framework for development of the central objective of this endeavor: developing a zero base budgeting methodology for OMA Program 2 mission dollars in active Army divisions utilizing the Training Management Control System (TMCS). To this end Chapter II provides an overview of the budgeting cycle within the Federal government with emphasis on the timing of the various events as well as the players involved in the attainment of the finished product.

Chapter III will examine the Planning, Programming, Budgeting System (PPBS) of the Department of Defense/ Department of the Army with the analysis based on both historical and current perspectives.

The recent emergence of Zero Base Budgeting (ZBB) within the PPBS structure will be explored in Chapter IV looking at the evolution of the overall concept as well as current and potential application within the United States Army's budgetary system.

Chapter V introduces the Training Management Control System (TMCS) as a funds planning and control tool for OMA, P2 Mission funds which are the focal point of the analysis and application to follow in the subsequent chapters. The evolution of the TMCS will be discussed as well as its characteristics, potential utilization as a budgeting tool, and limitations.

Chapter VI concerns the application of the information presented in previous chapters to the Command Operating Budget Estimate (COBE) and Budget Execution Review (BER) phases of the Army budget process. Specifically, a possible methodology for utilizing TMCS to support ZBB of P2 mission dollars is explored.

Chapter VII explores the relationship of TMCS output as the cost input to a cost/benefit approach and examines potential benefit or effectiveness measures which might be used to relate certain levels of OMA funding to certain levels of readiness.

Chapter VIII will briefly summarize the entire thesis report and allow the opportunity for the authors to make some closing comments concerning some of the conclusions drawn and recommendations made during the course of this endeavor.

C. ACKNOWLEDGEMENTS

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II. THE FEDERAL BUDGET SYSTEM

A. GENERAL

The task of budgeting represents a complex, challenging and ever-changing endeavor. While Federal Budgeting in general sets forth specific actions proposed and the estimated cost of thier implementation to accomplish the mission, the Army Budget System must also enable our Government officials to see the entire picture of our funding needs and at the same time analyze and justify specific items of expenditure. Due to the dynamic nature of the budgetary process, it is considered imperative that any officer working within the army financial management community possess a working knowledge of the entire budgetary spectrum. To gain such a perspective it is necessary to take a macro view of the entire Federal Budget System to fully appreciate the interworkings of the players involved in the formulation and execution of the budgetary process.

This chapter provides the reader with an overview of the budget system with respect to its evolution, an analysis of the present system including the roles of the various players invovled in the process, and the overall interrelationship of the Department of the Army with the entire Federal Budget.

B. HISTORICAL PERSPECTIVE

Since budgeting is an ever-changing process it is not surprising that an analysis of the history of the Federal Budget reflects some drastic changes in the procedures and methodology associated with the budgetary process.

Budgetary procedures prior to 1921 were characterized primarily by their lack of integration and coordination. While the current budgetary environment has the President as a prime factor in budget development, prior to 1921 the President was completely eliminated from compiling or considering budget estimates. The actual budget preparation was done by the various executive departments with the estimates being compiled by the Secretary of the Treasury into a "Book of Estimates" which was eventually presented to Congress.

For more than a century real Federal budgetary power resided almost exclusively in Congress. The beginning of the 1900's, however, found an increasing dissatisfaction with the established arrangements due to the rise in Federal spending, apparent inefficiencies within the system as well as the fiscal pressures not felt in the 19th century.

Perhaps the first absolute indicator of potential changes within the system came about in March 1909. During this timeframe the Congress gave the President the authority to recommend in his State of the Union Address specific measures to reduce estimates or increase taxes. The President was not, however, given the authority to revise estimates

prepared by executive departments. Although this change in perspective of Presidential involvement was significant, it actually did little to eliminate the following major disadvantages of the budget procedures prior to 1921:[1]

1. No centralized agency to coordinate the various departmental estimates.
2. No Presidential voice in the preparation of the estimates.
3. No agency to control the management of the funds used by the various departments. (This resulted in requests for supplemental appropriations year after year).

In 1910, the Sundry Civil Appropriations Act created the Taft Committee to look into the entire financial management system within the Federal Government. Upon completion of their analysis the Taft Committee recommended:[2]

1. A comprehensive executive budget.
2. A budget in terms of programs or functions.
3. A comprehensive and improved accounting system.

The above proposals recommended by the Taft Committee were never carried out however, due to the interference of World War I. It was therefore not until 1921 that any change in the budget procedures ensued.

Between the end of World War I and 1921, the Congress drew together various recommendations of governmental and civilian agencies and enacted the Budget and Accounting Act og 10 June 1921. Although the Act failed to provide for dependable budgetary machinery, it:[3]

1. Placed full responsibility for preparation of the budget on the President.
2. Established the Bureau of the Budget (the forerunner of today's Office of Management and Budget) within the Treasury Department to assemble, correlate, revise, reduce, or increase estimates of the various departments.
3. Prohibited all Federal Agencies from going directly to Congress unless requested by that body.
4. Directed each department to designate a budget officer to serve as the connecting link between departments and the former Bureau of the Budget.
5. Required the President to submit a plan for raising revenue.
6. Established the General Accounting Office (GAO) and the Comptroller General.

In the year since its passage, the Budget and Accounting Act of 1921 has proven to be a durable reform, and subsequent changes in the Federal budget process have generally built on its foundations. Such changes, however, have tended to concentrate further authority in the Chief Executive, while fragmenting it in Congress.

Almost twenty years after the Budget and Accounting Act of 1921, the Reorganization Act of 1939 gave the President authority to present plans for reorganizing the Executive Branch. This Reorganization Act allows the President the

ability to shape the Executive Branch to his specifications with only a Congressional veto capable of preventing any reorganization plan from becoming law.

Some of the results of the Reorganization Plan I are:[4]

1. The creation of the Executive Office of the President.
2. The transfer of the Bureau of the Budget from the Treasury Department to the Executive Office of the President, with the following functions:
   a. Assist the President in the preparation and formulation of the Federal Budget.
   b. Supervise and control the administration of the budget.
   c. Aid the President in bringing about more efficient and economical conduct of Government Service.
   d. Keep the President informed on fund utilization in all Government agencies.

Following World War II, the Hoover Commission was formed for the purpose of investigating the financial system of the military. This Commission eventually recommended the use of a performance budget and some major improvements in budgeting and accounting systems and procedures. These recommendations resulted in Title IV, Public Law 216, 1949, and the Budget and Accounting Act of 1950. Public Law 216 created comptroller positions in the Department of Defense and military departments as well as specifically calling for

conversion to the performance type budget. The Budget and Accounting Act of 1950 gave the authority for the use of the performance-type presentation of the budget to Congress.

Perhaps the most significant event in the attempts to sophisticate the Federal Budget System came about in the passing of the Congressional Budget and Impoundment Control Act of 1974 (Public Law 93-344). The importance of this Act derived from the fact that it provided Congress the disciplined system needed to control the "purse strings" of our government. Prior to PL 93-344, the Congress had considered the Federal Budget on a piecemeal basis. Little attempt was made, as legislation was passed, to relate impacts of the bills to the budget.

With respect to the budget reform aspects of PL 93-344 the following key areas were acted upon:

1. The change which had the greatest impact on all levels of the government was the establishment of a new fiscal year. The old fiscal year (FY) of 1 July - 30 June did not provide Congress adequate time to consider budgetary requests submitted in President's Budget in January of each year. Effective with FY 1977, the fiscal year was redesignated to run 1 October - 30 September.
2. To assist the Congress in staying on schedule, budget committees were established in both the House of Representatives and the Senate. The primary responsibilities of the budget committees

include: formulating and reporting budget resolutions, recommending appropriate levels of federal revenues and expenditures and determining the appropriate level of public debt. The House committee has twenty-three members; the Senate committee has fifteen.

3. A Congressional Budget Office was established. Its primary function is to assist the budget committees with data; information and staff analysis. It also will assist other congressional committees and members with budget related information upon request.

In the area of impoundment control, PL 93-344 was designed to assure effective congressional control over the budgetary process as provided by the Constitution of the United States. It was believed essential to establish better controls concerning the impoundment of congressionally approved funds and PL 93-344 makes it extremely difficult for the President or any agent of the government to either rescind or defer budget authority.

Under the provisions of PL 93-344 in order for budget authority to be rescinded, the President must request approval from Congress, making all facts available. If Congress (both House and Senate) does not act within 45 days or if Congress disapproves the request, the funds must be made available to be spent. Along the same lines, if the President or another agent of the government desires to

defer budget authority, the President must request approval from Congress, disclosing all available facts, or either the House or the Senate may disapprove the request. If neither take action, the deferral is considered approved. If either one disapproves the deferral, the funds in question must be made available to spend.

C. CONGRESSIONAL BUDGET ORGANIZATION

Just as an appreciation for the evolutionary nature of the Federal Budget System is critical for any future member of the financial management community, so too is an understanding of the basic organization of the Congress with respect to the budgetary process. It is imperative that any potential player in the "budget game" has at least a working knowledge of the interworkings of the Congressional Committee System, the Congressional Budget Office and those specific committees that have the greatest relevance to the entire budget system.

Perhaps the best point of departure with respect to an analysis of the basic congressional budget organization is an understanding of the basic committee system utilized by Congress. In general, the committee system is made up of three specific types of committees: select and special committees, joint committees, and standing committees. A functional subdivision of any of these previously mentioned committees is considered a subcommittee. The overall purpose

of this committee concept is not only to permit a division of labor but also to afford Congress a measure of expertise in policy review and oversight.[5]

Analysis of the three basic types of committees, reveals that the standing committees have the greatest relevance to the Federal budget system. The Budget Committees of the House and Senate function in the area of fiscal policy and priority, setting and carrying out this function by:

1. Maintaining surveillance of the effect of existing and proposed legislation on budget outlays.
2. Making continuing studies of tax expenditures and coordinating tax expenditures with direct budget outlays.
3. Setting levels for total spending, revenues, and the national debt.

These budget committees can therefore be said to provide overall management to synthesize a congressional budget policy distinct from executive-branch initiatives.[6]

Another critical segment of the overall Congressional Budget organization is found within the Congressional Budget and Impoundment Control Act of 1974 (PL 93-344) and serves the Congress as a prime source of information on the budget and on taxing and spending legislation. As a primary responsibility, the office furnishes the two budget committees with information, data, and analyses needed to discharge committee functions. On request, the office develops comparable information for the appropriations

committee of either house, and also for the House Ways and Means Committee and Senate Finance Committee. In addition, again on request, the office provides any committee or member with information already compiled and available. In yet another duty, the office tracks the spending decisions of Congress and relates them to established budget authority and outlay targets.[7]

Perhaps the last portion of clarification necessary with respect to the overall Congressional budget organization deals with the two step authorization and appropriations process. Congress does not in reality approve funding but rather makes appropriations. This process is accomplished by first enacting specific authorizing legislation. The legislation or authorizing committee in both Houses perform this function by providing substantive review of executive branch proposals and recommending legislation authorizing agencies to pursue specific programs and activities. The legislative committees that exercise primary cognizance of defense authorizations are the House and Senate Armed Services Committees. Sub-committees are utilized by both Houses in the accomplishment of this taks.

Once a program receives authorization, the second step of the authorization and appropriations process ensues. This entails further review of agency proposals and the House Appropriations Committee through its sub-committees does the actual review of requests for proposals and examines agency performance. When passed by the House,

the bill goes to the Senate where a similar process occurs. The separate House and Senate versions of a specific bill then go to a Committee of Conference composed of members of both Houses and, at this point, differences are reconciled and a single bill is recommended. Adoption of this single bill by both Houses results in the passage of the bill.

D. A FEDERAL BUDGET OVERVIEW

The Federal Budgeting process is a massive and complex endeavor. To make any attempt to fully analyze what goes on in deatil with respect to the development and presentation of the President's budget would be much too ambitious an undertaking for this particular thesis. Equally overambitious would be an in depth review of the entire Congressional Budget Process. There are, however, some critical elements in both the President's Budget and the Congressional Budget Process that must be brought into play in order to have the proper financial management perspective at the lower levels ob budgetary responsibility, be it the Department of Defense, Division, or even the Battalion levels.

1. The President's Budget

As stated previously, the President had little control or influence over the Federal budget preparation prior to the Budget and Accounting Act of 1921. This act allowed for a single, unified executive budget. This same act also established the Bureau of the Budget which

is now known as the Office of Management and Budget (OMB). The evolution of the initial functions of the Bureau of the Budget to the present sphere of influence of the Office of Management and Budget is an excellent example of the fiscal dynamics that have occurred during the time frame of 1921 to the present. The Office of Management and Budget has evolved into the principal staff arm of the President and the current functions performed by OMB includes:

a. Assisting the President in the executive direction of the budget to include actual budget preparation.

b. Supervises and controls budget execution.

c. Performs program evaluations.

d. Oversight of programs for defense and in foreign policy area.

While the Office of Management and Budget is perhaps the President's most utilized staff member with respect to the development and presentation of the budget, the President also receives budget related input from the Treasury, the Council of Economic Advisors, as well as the chairman of the Federal Reserve Board.

The President is therefore well supported in his attempt to develop the executive budget. It is however, the Office of Management and Budget who virtually carries the show by performing actual agency-by-agency examination of proposed programs and ongoing activities. These reviews by OMB are critical aspects in the determination of

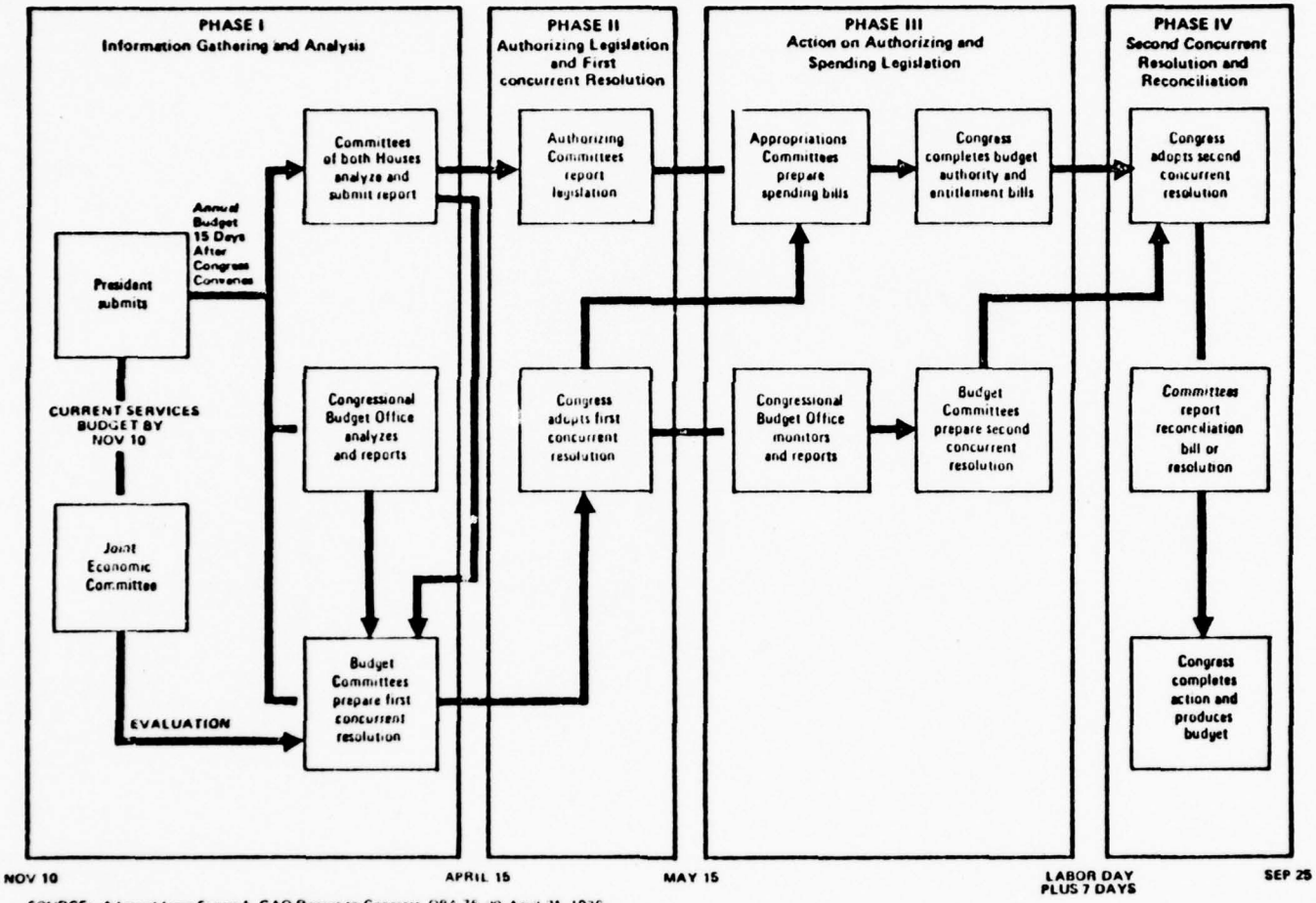
both the size of the Federal budget as well as the actual funding levels for each specific agency.

2. The Congressional Budget Process

Due to the inherent complexities of the Congressional budget process, Figure 1 is employed to help demonstrate the flow of the entire system as well as the time frames associated with the various specific activities within the overall process. Table 1 is intended to supplement Figure 1 by defining some of the key activities associated with the Congressional budget process.

3. Department of Defense Interface With Budget Process

Although the actual Department of Defense interface and scheduling constraints deriving from the Congressional budget process exhibited in Figure 1 will be further explored in a subsequent chapter dealing with the Planning, Programming, and Budgeting System (PPBS), it is important to interject at this point that the Federal Budgeting process, highlighted in this chapter, represents the critical budgetary arena for DOD. While PPBS is the internal system used to obtain and manage DOD resources, the manner in which defense needs fare among all other competing resource claims eventually results from the priorities developed through the interaction of executive-branch agencies, the President, and Congress within the political framework of the Federal Budget System.



SOURCE: Adapted from Figure 1, GAO Report to Congress, OPA 76-29 April 21, 1976.

Figure 1 – Congressional Budget Process Depicting Major Events That Occur During Congressional Review of Federal Budget 8

TABLE 1 - DEFINITIONS APPLICABLE TO FIGURE 1[9]

A. APPROPRIATION

An appropriation is an authorization by an act of Congress to incur obligations for specified purposes and to make subsequent payments out of the U.S. Treasury. Appropriations are classified as being annual, multi-year, or no-year, depending on the period of time that is available for obligation purposes.

B. AUTHORIZATION

Authorization is the basic substantive legislation enacted by Congress that sets up or continues the legal operation of a Federal program or agency. Such legislation is normally a prerequisite for subsequent appropriations, but dies not usually provide budget authority.

C. CONCURRENT RESOLUTION ON THE BUDGET

A resolution passed by both Houses of Congress, but not requiring the signature of the President, setting forth, reaffirming, or revising specified congressional budget totals for the Federal government for a fiscal year.

D. THE BUDGET

"The Budget" usually refers to the President's budget (for example, The Budget of the United States Government, Fiscal Year 1980). Published and transmitted to Congress by the Office of Management and Budget, the President's budget includes the approved DOD budget. The Army portion includes descriptive summaries and justification documents prepared by appropriation directors.

III. PLANNING, PROGRAMMING AND BUDGETING SYSTEM (PPBS)

A. GENERAL

As discussed in Chapter II, the art of budgeting is dynamic in nature and has been subject to reform throughout the history of the United States. The basic product of the reform movement include: line item budgeting, performance budgeting and Planning, Programming and Budgeting (PPB). These products represent the basic evolution of the present Planning, Programming and Budgeting System (PPBS). The purpose of this particular chapter is to take a brief look at the above mentioned products of the reform movement and then proceed into an in depth analysis of the Planning, Programming and Budgeting System (PPBS). It is felt that such a discussion concerning both the evolution and analysis of PPBS will create the proper environment to explore subsequent areas of analysis to be addressed throughout the remaining chapters of this endeavor.

B. PRODUCTS OF REFORM

"Budget reform," Charles Beard wrote during the first period of budget innovation in the early years of the 20th century, "bears the imprint of the age in which it originated."[10] This observation has proven to be of a timeless

quality since the products of budget reform have reflected the particular conception of the budget function as perceived at the specific time of its innovation.

Although every budget process includes aspects of control, management and planning, one function tends to predominate.[11] This predominance comes about due to the inherent competitiveness of the functions; emphasis on one diminishes use of the others. During each period of budget reform the control-management-planning balance was changed to reflect the particular emphasis associated with the "needs of the time".

The basic product of the first period of budget reform was emphasis on line item budgeting as an attempt to satisfy the need for expenditure control. This period of reform included the years between the passage of the Budget and Accounting Act of 1921 and the Hoover Commission report of 1949. This line item approach to budgeting derived from the bureaucratic conditions common to modern government. These conditions evolve from the desire of government to prevent financial improprieties and of limiting agency spending to authorized levels. Due to this concern with respect to fiduciary responsibility, government budgeting inevitably "begins with indispensable efforts to prompt 'accountability' by preventing public funds from being stolen, used for unauthorized purposes, or spent at uncontrolled rates...".[12] While the control function was well defined in this line item otientation the management and planning aspects of the budget were not properly developed.

The second product of the budget reform movement, performance budgeting, was found to be as unifunctional as line item budgeting approach but with a different functional emphasis. Performance budgeting emphasized the management side of budgeting with the control and planning aspects of budgeting being decentralized or dispersed. Performance budgeting had as its principal thrust an attempt to improve work efficiency by means of activity classifications and work/cost measurements.

While both line item and performance budgeting were obviously much too unifunctional to be totally effective, Planning, Programming and Budgeting (PPB) has a multi-purpose perspective. While PPB regards planning as the central budget function, it does <u>not</u> negate the need for control and management and for informational structures oriented to these functions. PPB has therefore been found to be an efficient vehicle to enable policymakers to evaluate the costs and benefits of alternative expenditure proposals. The Planning, Programming and Budgeting System (PPBS) that has evolved from the basic PPB concept is therefore the "state of the art" with respect to the optimum balance of the control-management-planning aspects of budgeting that confronted the Federal Government. The following in depth analysis of PPBS within the Department of Defense/ Department of the Army will demonstrate the comparitive virtues of such a system.

C. PLANNING - PROGRAMMING - BUDGETING

The system of planning-programming-budgeting conceptually relates three factors: a desired outcome (planning), the structuring of methods of achieving the outcome (programming) and the funds available to accomplish the end result (budgeting). It is predicated on the dominance of the planning function and attempts to make government operations more efficient and effective by improving the allocation of public resources between competing needs.[13]

During 1965, President Lyndon Johnson directed all departments and agencies of the federal government to adopt a planning, programming and budgeting system. During the implementation phase of PPBS, Charles L. Schultze, then Director of the United States Bureau of the Budget, announced six goals of programming budgeting:[14]

1. Careful identification and examination of goals and objectives in each area of government activity.
2. Analysis of the output of a given program in terms of its objectives.
3. Measurement of total programming costs, not for just one year but for several years in the future.
4. Formulation of objectives and programs extending beyond the single year of the annual budget to long term objectives.
5. Analysis of alternatives to find the most efficient ways of reaching program objectives for the least cost.

6. Establishment of analytic procedures to serve as a systematic part of the budget review process.

As could be expected of any new system within the Federal government, PPBS met with varying degrees of success with respect to its implementation. While some departments and agencies adjusted quite well to the new game inherent in PPBS, others failed to go beyond a "first step" posture with respect to PPBS implementation. The Department of Defense, however, proved to be fertile ground for the growth of this new approach to budgeting and PPBS has not only survived but in reality has actually thrived in the DOD environment.

D. PPBS WITHIN THE DEPARTMENT OF DEFENSE/DEPARTMENT OF THE ARMY

Prior to 1961, military planning and financial management were being conducted independently. The Joint Chiefs of Staff and planning agencies of the military departments conducted military planning while the Comptroller was responsible for financial management. This system led to piecemeal resource management with imbalances in the overall Department of Defense plan.

The inherent problems associated with such a fragmented system of managing resources brought to light the need to establish a system to bridge the gap between planning and budgeting. In the early 1960's, the bridge was referred to as the programming system but by 1963, the Planning,

Programming, and Budgeting System (PPBS) was operating for the Department of Defense. As stated in Army Regulation 1-1 (Planning, Programming and Budgeting Within the Department of the Army), "PPBS is the management system employed...to establish and maintain...capabilities to accomplish roles and missions and to ensure effective use of resources."

Perhaps at this point it would be helpful to look closely at PPBS within the Department of the Army by analysing the separate yet interrelated functions of the system as outlined in the United States Army Institute of Administration's Special Text 14-191:

1. Planning

Planning considers the threat to national security objectives. Strategies, policies, and force objectives are developed to cope with that threat. Planning includes assessing the risk associated with not accomplishing all the plans.

Deputy Chief of Staff for Operations (DCSOPS) has responsibility for the Army planning function.

Army long-range planning covers a 10-20 year period; mid-range planning covers 2-10 years; short-range planning is for 0-2 years.

Planning is accomplished with little regard to resource constraints.

2. Programming

Programming is translating the guidance based on the plans into detailed resource requirements (e.g. forces, manpower) for a five-year period. Programming takes into consideration resource constraints.

The major documents in the Army programming phase are:

a. Program Analysis and Resource Review (PARR) submitted by selected commands.

b. Program Objective Memorandum (POM) submitted by each military department.

c. Five-year Defense Program (FYDP) which is a single Department of Defense management document, updated three times a year, which expresses total resource requirements displayed in ten broad program categories.

Programming in the Army is the responsibility of the Director, Program Analysis and Evaluation (D, PA&E) Office of the Chief of Staff of the Army.

3. Budgeting

Budgeting is the short range allocation of the resources, expressed in detail, to accomplish the mission. It comprises budget formulation and budget execution.

a. Budget formulation is the development of detailed resource requirements to support programs and objectives. The primary purpose of budget

formulation is to obtain the resources from Congress for execution of programs.

b. Budget execution is the allocation, obligation, expenditure, and reporting of funds in the accomplishment of the mission.

The primary budget phase document is the Command Operating Budget Estimate (COBE). It addresses primarily the Budget Year (forthcoming fiscal year) and the Program year (fiscal year following the budget year).

Army Staff responsibility for the budgeting phase lies with the Comptroller of the Army.

Upon analysis of these functions associated with the Army Planning, Programming and Budgeting System (PPBS) it becomes apparent that PPBS is not only complex but also quite an ambitious system as well. There are in fact thirty-three major planning, programming and budgeting events taking place within an approximate 36-month Army PPBS cycle. This cycle is further compounded by the need for annual iteration of the Five Year Defense Program (FYDP) that causes each of the 33 discrete events to occur once every 12 months.

The above mentioned complexities inherent in the Army Planning, Programming and Budgeting System make it necessary to look at PPBS within the Army in various dimensions in order to acquire a basic familiarity of just what is going on within the system.

To gain the proper perspective of PPBS within the Department of the Army it is necessary to examine the discrete

events associated with the entire system, the critical players/agencies that influence the system and the time-frame associated with various events. To this end the following figures, with clarifying definitions, are designed to give just such a perspective by means of tracing the flow of discrete events throughout the system.

While Figure 2 (Army Planning, Programming and Budgeting System Cycle) provides the necessary overview of the entire system the separate functions of PPBS are analyzed in depth by means of:

Figure 3 (Planning Phase Events - Army PPBS Cycle)

Figure 4 (Sequencial Interrelations of Principal Programming Phase Events by Agency and Month of Occurrence Within PPBS Cycle)

Figure 5 (Sequencial Interrelationship of Principal Budgeting Phase Events by Agency and Month of Occurrence Within PPBS Cycle)

In addition to the above mentioned flow diagrams associated with PPBS, Annex A (Definitions Applicable to Army PPBS Cycle) provides the critical definitions of the various acronyms utilized in the presentation of PPBS within the U.S.Army. Annex B (PPBS Modifications) is also included to provide information concerning innovations in the PPBS Cycle targeted for FY 1980-1984.

Upon analysis of the flow through of the Army PPBS cycle, a great deal can be learned about the system as well as the roles of the critical players involved in the Army "budgeting game".

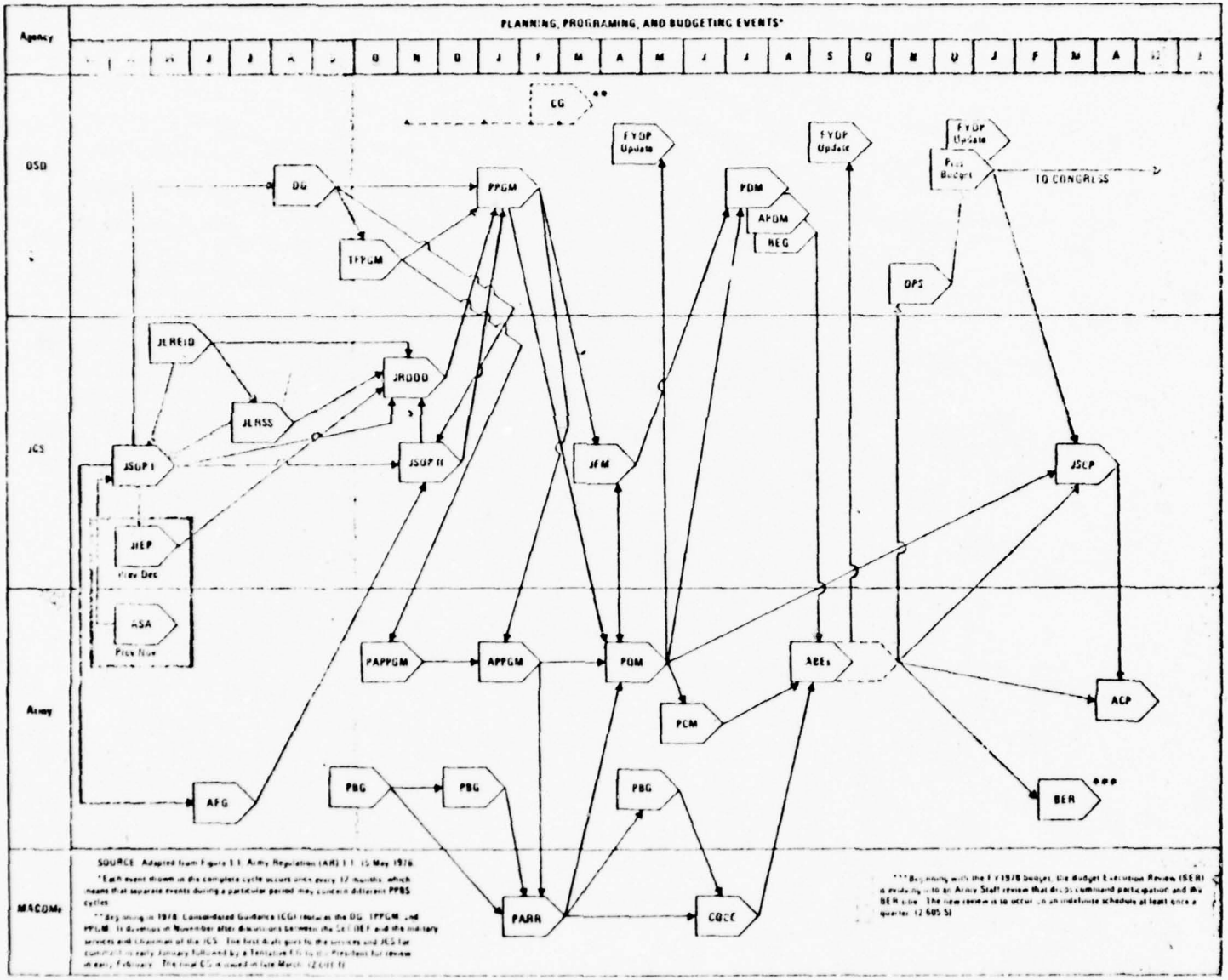


Figure 2 – Army Planning, Programing, and Budgeting System Cycle [15]

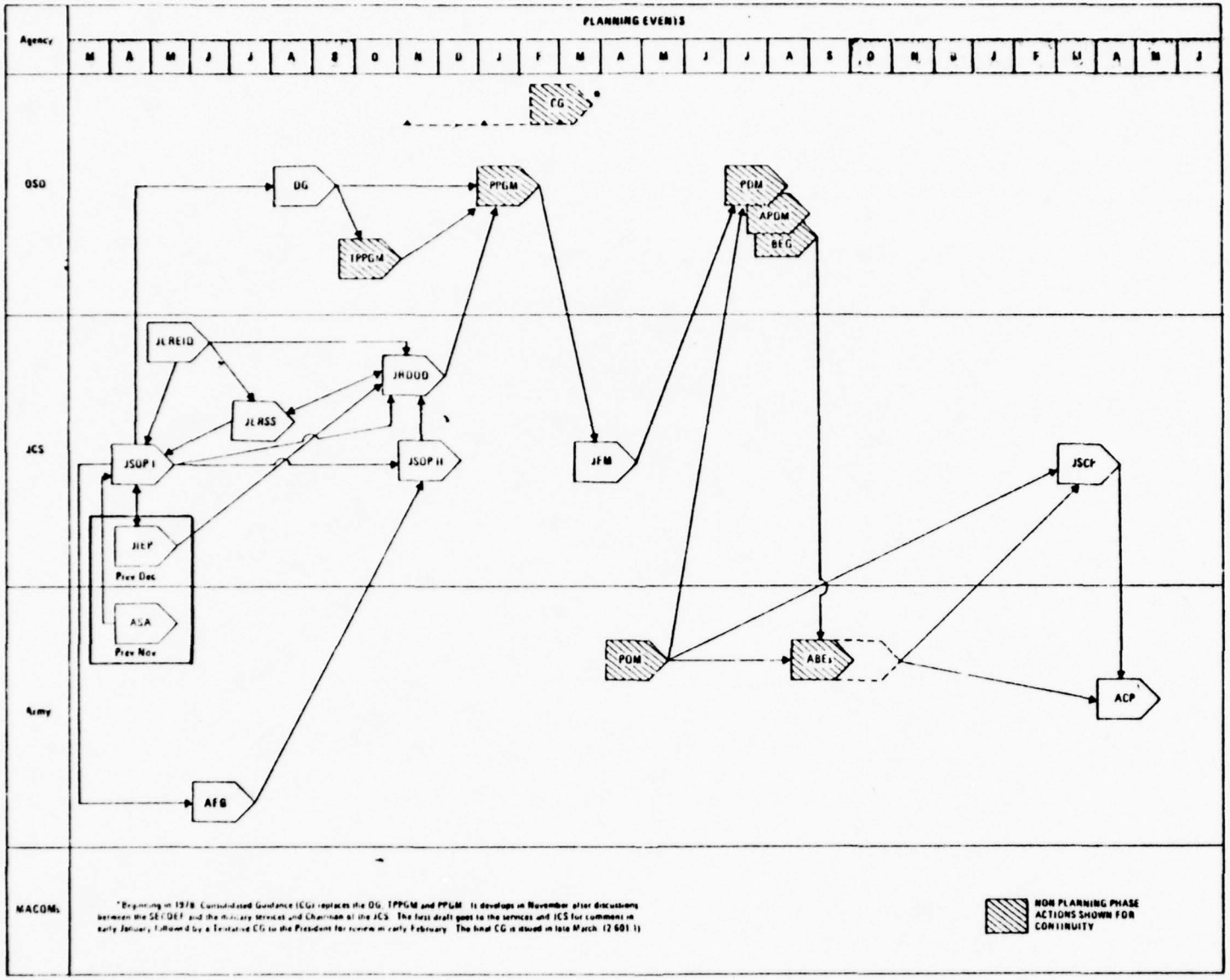


Figure 3 - Planning Phase Events - Army PPBS Cycle

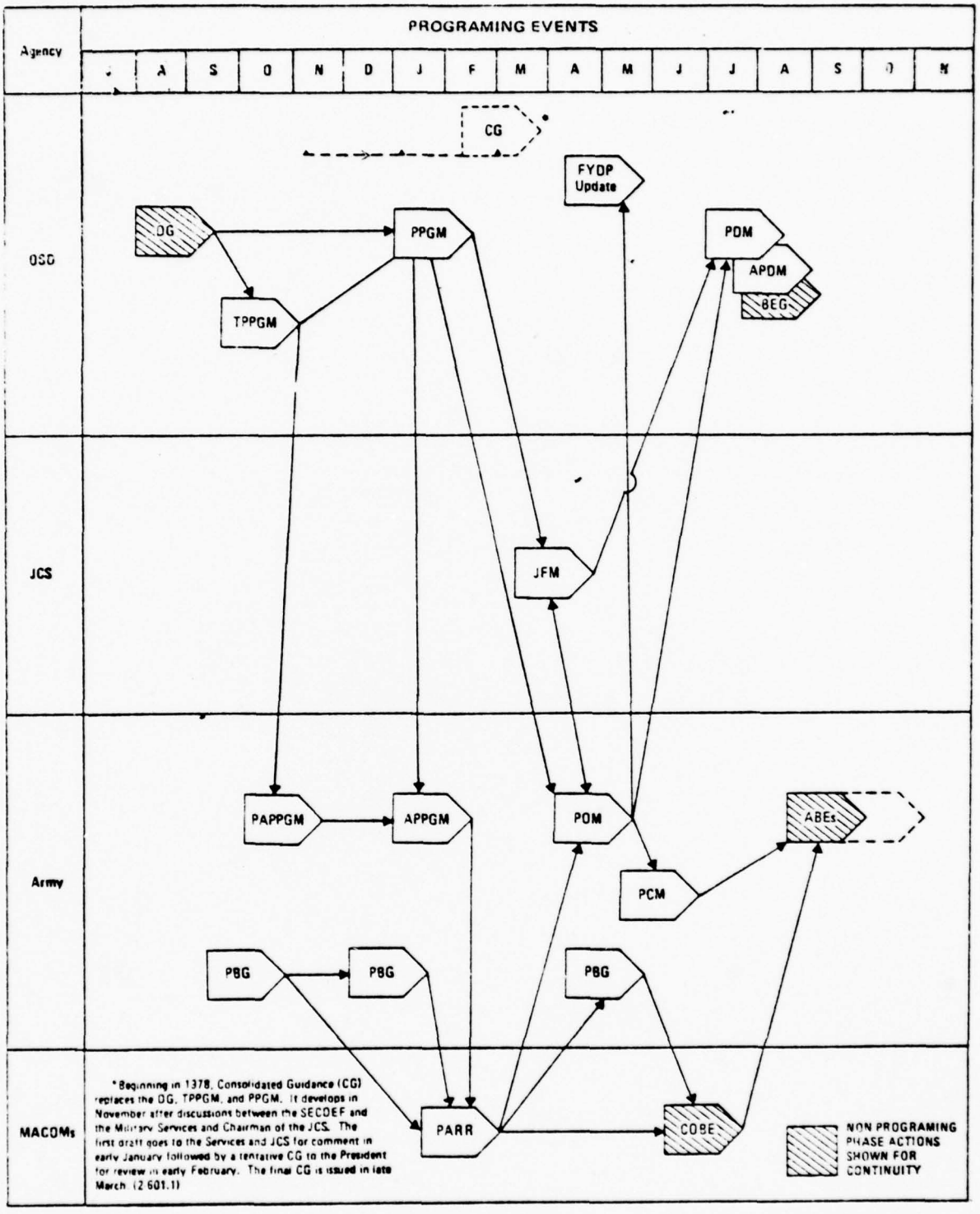
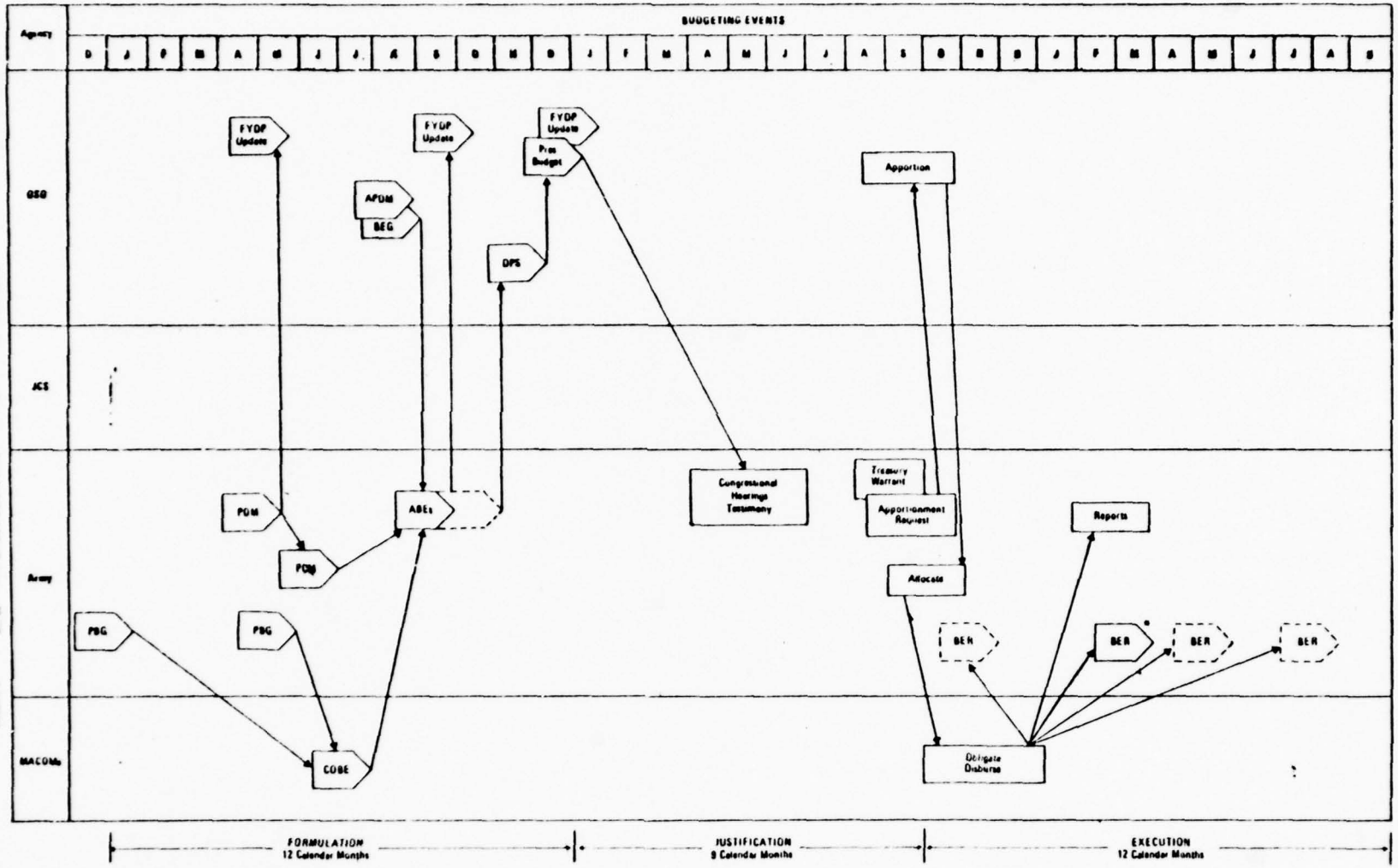


Figure 4 - Sequential Interrelationship of Principle Programing Phase Events by Agency and Month of Occurrence Within PPBS Cycle [17]



*BEGINNING WITH THE FY 1978 BUDGET, THE BUDGET EXECUTION REVIEW (BER) IS EVOLVING INTO AN ARMY STAFF REVIEW THAT DROPS COMMAND PARTICIPATION AND THE BER TITLE. THE NEW REVIEW IS TO OCCUR ON AN INDEFINITE SCHEDULE AT LEAST ONCE A QUARTER (2 SOS 5)

Figure 5 - Sequential Interrelationship of Principal Budgeting Phase Events by Agency and Month of Occurrence Within PPBS Cycle

E. CONCLUSIONS

This chapter has described the Planning, Programming and Budgeting System and its application by the United States Army. Emphasis has been on the process that involves 33 discrete events that occur during an approximate 36 month Army PPBS cycle. "Within the PPBS process, planning events establish the force basis for assessing defense resource needs while programming events translate planning into balanced allocations of forces manpower, and funds for a 5-year period. The budgeting events obtain the budget authority and funds to carry out Office of the Secretary of Defense (OSD) approved plans and programs and then provide for associated reporting and review."[19]

Since the PPB process within the U.S. Army is an evolving system the concept of PPBS must never be put into a static perspective. The system described in this chapter is subject to the changes inherent in a dynamic environment. Although PPBS has the capacity to respond to various changes in emphasis and procedures, the basic framework of the Planning, Programming and Budgeting System within the Department of the Army appears to be solidly entrenched as a valid internal system of resource allocation. Names and acronyms can and do change as evidenced in Annex B, but the fundamental PPB process, which proceeds from the general to the specific over time, has retained its chief functional characteristic...effective resource allocation.

IV. ZERO-BASE BUDGETING

In the preceding chapters of this endeavor the authors have concentrated their efforts toward establishing an appropriate basis from which to explore the current "state of the art" with respect to the budgeting process for the Federal government. The historical/macro view of the Federal budgetary process, the analysis of the budget reform movement and its products and a comprehensive survey of the Planning, Programming and Budgeting System (PPBS) are all basic to understanding the concepts underlying the latest "tool" introduced in the financial management community... Zero-Base Budgeting (ZBB).

This chapter seeks to provide answers to some of the more common questions concerning this approach to budgeting. They include:

- Where did ZBB come from?
- Why the current emphasis on ZBB?
- What are the basic ZBB concepts and processes?
- Will ZBB replace PPBS?

It is hoped that upon completion of this chapter the reader will have a better perception of just what ZBB is all about as well as its implications concerning present and future impacts upon the budget methodology utilized within the Department of Defense/Department of the Army.

A. GENERAL

Zero-base budgeting (ZBB) is a relatively new methodology. Developed by Peter Pyhrr at Texas Instruments, Inc. during 1969, it first gained attention for use in the public sector when Jimmy Carter, then Governor of Georgia, used it in preparation of the State of Georgia's budget for Fiscal Year 1973. During that year, $55 million was cut from Georgia's budget without a significant decrease in services offered by the state.[20] Due to this apparent success of ZBB within the public sector, Jimmy Carter repeatedly made the following pledge during his 1976 presidential campaign:[21]

> "Immediately after my inauguaration I will require zero-base budgeting for all federal departments, bureaus and boards by executive order."

In February 1977, President Carter redeemed this pledge when he issued an executive order to direct the implementation of zero-base budgeting by all Federal agencies. This memorandum, which called for the development of a zero-base budgeting system for Fiscal Year 1979, caused an immediate demand for more information on the subject of ZBB for virtually all levels of management within the public sector. Just what was this new methodology called ZBB and what were the implications of its utilization upon the present system?

B. THE CONCEPT OF ZERO-BASE BUDGETING

Zero-base budgeting is an approach, not a fixed procedure or set of forms to be applied uniformly from

one organization to the next. It draws upon a number of techniques which were developed during the 1960's in connection with the evolution of the Planning, Programming and Budgeting System (PPBS). These techniques include: systems analysis, problem-solving, cost benefit analysis, and program management.

Since zero-base budgeting is still somewhat in an evolutionary stage of development, it is not surprising that a number of definitions of ZBB are presently in existence. Upon analysis of the various definitions of ZBB, two definitions stand out due to both their clarity and appropriateness in any environment, public or private:

> "ZBB is:...an operating, planning and budgeting process which requires each manager to justify his entire budget request in detail, and shifts the burden of proof to each manager to justify why he should spend any money. This procedure requires that all activities and operations be identified in decision packages which will evaluated and ranked in order of importance by systematic analysis."[22]

> "ZBB is a technique which complements and links the existing planning, budgeting, and review processes. It identifies alternative and efficient methods of utilizing limited resources in the effective attainment of selected benefits. It is a flexible management approach which provides a credible rationale for reallocating resources by focusing on the systematic review and justification of the funding and performance levels of current programs or activities."[23]

Conceptually speaking, ZBB can be viewed as a managerial approach to budgeting, emphasizing inputs and outputs of the decision-making process, rather than incremental increases or decreases from the prior year. The decision-maker is thus allowed to define and analyze the components of an organization

as interrelated activities, rather than the traditional approach of vertical slices of an organization.

Following President Carter's executive order to initiate ZBB within the public sector, the Office of Management and Budget (OMB) issued OMB Bulletin 77-9 to provide the clarification and guidance required to attain the President's objectives. In this bulletin the concept of ZBB was described in these terms:

> Zero-base budgeting is a management process that provides for systematic consideration of all programs and activities in conjunction with the formulation of budget requests and program planning.

In addition, OMB's Bulletin 77-9 stated that the principal objectives of zero-base budgeting were to:

1. Involve managers at all levels in the budget process;
2. Justify the resource requirements for existing activities as well as for new activities;
3. Focus the justification on the evaluation of discrete programs or activities on each decision unit;
4. Establish for all managerial levels in an agency, objectives against which accomplishments can be identified and measured;
5. Assess alternatives methods of accomplishing objectives;
6. Analyze the probably effects of different budget amounts or performance levels on the achievement of objectives; and,
7. Provide a credible rationale for reallocating resources, especially from old activities to new activities.

C. THE PROCESS OF ZBB

In the zero-base approach to budgeting there are four basic steps, as outlined by Peter Phyrr:[24]

1. Identify "decision units".
2. Analyze each decision unit in a "decision package".
3. Evaluate and prioritize all decision packages in order to develop the appropriations request.
4. Prepare the detailed operating budgets so they reflect the decision packages approved in the budget appropriation.

In OMB Circular No. A-115, dated 5 May 1978, these four basic steps advocated by Peter Phyrr were expanded to provide a general framework for establishing a Government-wide ZBB process. These steps include:

1. Establishment of agency policy and guidelines;
2. Identification of decision units;
3. Identification of objectives for each decision unit;
4. Identification and evaluation of alternative methods of accomplishing objectives;
5. Analysis of different levels of resource allocation and performance;
6. Preparation of decision packages;
7. Ranking of decision packages; and,
8. Consolidation process (optional).

OMB Bulletin No. 77-9 provided key definitions of various terms associated with the ZBB process as they pertain to the public sector. Table 2 contains those definitions

TABLE 2

KEY DEFINITIONS WITHIN THE ZBB PROCESS

Definition of Terms

Decision Unit. The basic program or organizational entity for which budget requests are prepared and for which managers make significant decisions on the amount of spending and the scope or quality of work to be performed.

Decision Package. A brief justification document that includes the information necessary for managers to make judgements on program or activity levels and resource requirements. A series of decision packages is prepared for each decision unit and cumulatively represents the total budget request for that unit.

Consolidated Decision Packages. Packages prepared at higher organizational and program levels that summarize and supplement information contained in decision packages received from subordinate units in the agency.

Minimum Level. The level of performance below which it is not feasible for the decision unit to continue because no constructive contribution could be made toward fulfilling its objectives.

Current Level. The level of performance that would be reflected if activities for the budget year were carried on at current year service or output levels without major policy changes. A concept, similar to current services, that nevertheless permits internal realignments of activities within existing statutory authroizations.

Enhancement Level. A level above the current level, where increased output or service levels are consistent with major objectives and where sufficient benefits are expected to warrant the serious review of higher authorities.

Ranking. The process ty which higher level managers evaluate and array program or activity levels (as shown in decision packages) in decreasing order of priority. The ranking process results in a relative priority assigned to each decision package in the budget request.

that are most important in achieving a basic understanding of the ZBB process. Although some of the phraseology and semantics associated with the ZBB process may vary from agency to agency within the Federal government, the basic procedural steps and definitions promulgated by OMB are found throughout the public sector.

D. THE DECISION PACKAGE

The decision package represents the building block of the zero-base concept and its impact on the entire ZBB process cannot be overemphasized. In zero-base budgeting, managers at each level prepare the decision packages. The decision packages contain analysis of: purpose, cost, performance, benefits, alternative courses of action, and consequences of disapproval of program budget requests.

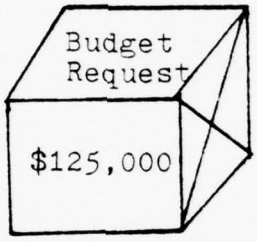
The decision packages therefore represent a brief justification and request document that includes the information necessary for managers to make judgements on program direction and resource requirements.[25]

Although the decision package concept will be discussed in a subsequent chapter, it is perhaps beneficial at this point to illustrate this concept by an example while simultaneously demonstrating the difference between the traditional and zero-base approach to budgeting.

> EXAMPLE: "The Recreation Services Division (RSD) at Fort Army has been tasked by the Director of Personnel and Community Activities (DPCA) to develop a budget request for the coming fiscal year."

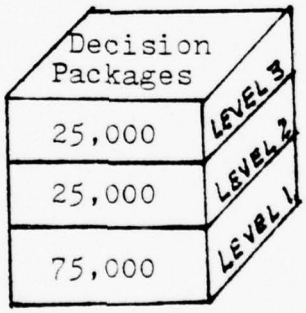
Upon analysis of the task, the head of RSD determines that with $75,000 he can just barely accomplish his goals (minimum level). With $100,000, he can attain the same level of performance as the previous year (current/basic level) and with $125,000, he could improve the performance of RSD (enhanced level).

In a traditional budget environment the budget request for RSD could be depicted as follows:



Traditional
Budget

While in the ZBB environment this same request could be displayed in the following manner:



Enhanced Level

Current/Basic Level

Minimum Level

ZERO-BASE BUDGET

Therefore in this particular example the head of RSD is not forced to submit one budget request for program funding that could be rejected in its entirety or illogically vertically sliced (Traditional Budgeting Approach) but rather provides the DPCA and other top level decision makers the flexibility to deal with various funding and performance levels.

E. PRIORITY RANKINGS

The priority rankings, like decision packages, are a key element of the ZBB process. Priority rankings are utilized to prepare a listing of all decision packages of an activity in order of decreasing benefit to the overall organization. The decision maker can thus identify the benefits to be gained at each level of expenditure and can also analyze the consequences of not approving additional decision packages ranked below a given level of expenditure. Selected decision packages are forwarded to the next higher budget review level where they compete with decision packages of other programs and activities. Priority ranked decision packages also provide decision makers with a potential starting point to be utilized during the current fiscal year in identifying activities/programs to be reduced if expenditure levels change and identifies the expected consequences of reducing them.

The priority ranking process is therefore a critical element of any ZBB methodology and in Chapter VI the actual prioritization process will be demonstrated to endow the reader with a better understanding and appreciation of this key element of the zero-base budgeting within the public sector.

F. COMPARISON OF PPB WITH ZERO-BASE BUDGETING

Before concluding any discussion concerning ZBB and its application within the public sector it is important to

address the question of the compatability of ZBB methodology within the PPBS environment. Figure 6 compares and contrasts the characteristics of PPB and ZBB as a basis for discussion of the potential interface of ZBB with PPBS.

Analysis of Table 3 reveals that while there are some basic similarities between ZBB and PPBS, there are also some differences that must be considered before any constructive interface can ensue. Perhaps the key difference between PPBS and ZBB lies in the decision making perceptions of the two concepts; i.e., PPB focuses on top level decision making, while ZBB focuses on decisions at various operating and management levels.

It is the contention of Pyhrr that the two systems are indeed essentially different, as discussed above, but potentially complementary. He states that: "the top-down efforts of PPB can be coordinated with the predominately bottom-up efforts of zero-base budgeting."[27] This statement by Pyhrr is not surprising when consideration is given to the fact that the zero-base concept is primarily designed to increase effectiveness and efficiency at the lower manage- levels, where resources are being consumed. However, top level guidance is a part of the ZBB process.

ZBB is not a system unto itself but rather is, as the subheading of Pyhrr's book imples, A Practical Management Tool for Evaluating Expenses.[28] Phyrr believes that ZBB can fill critical gaps in PPBS design and that, "...the macroeconomic planning and policy making process must be

FIGURE 6

THE INTEGRATED WORLD OF PPB$^{ZB}_{S}$[30]

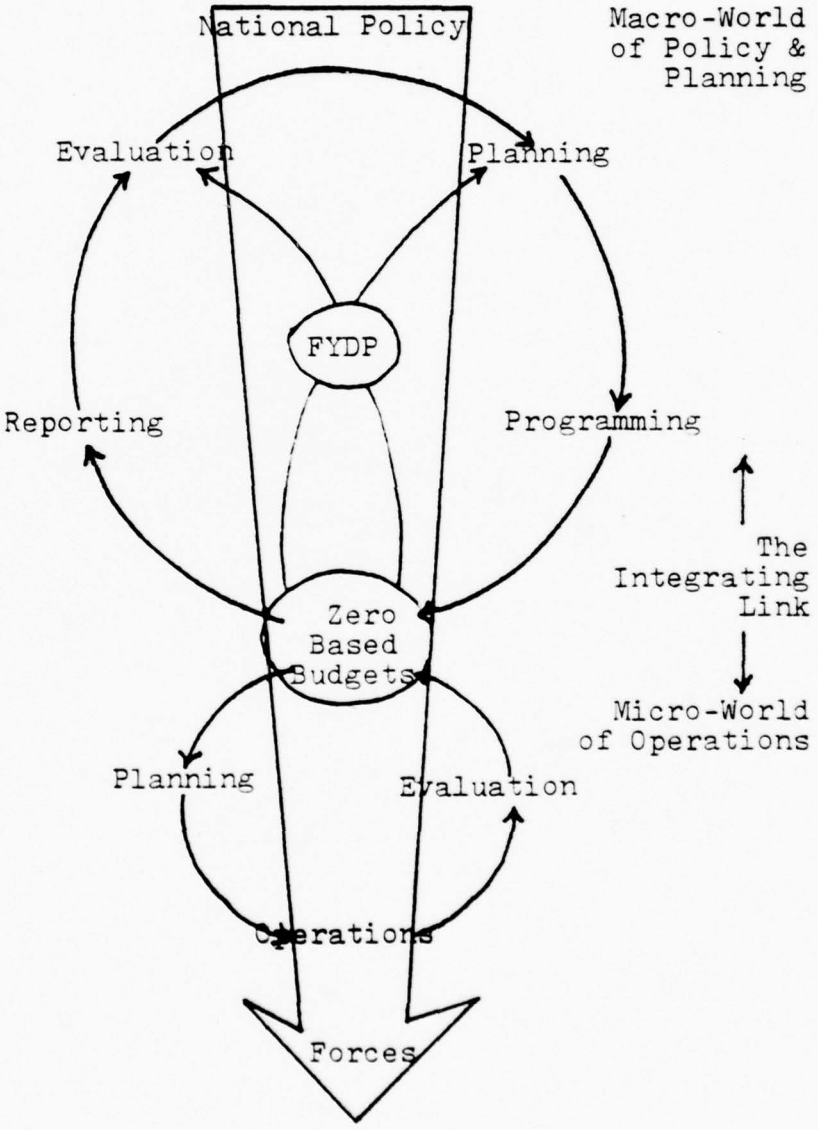


TABLE 3

CHARACTERISTICS OF ZERO-BASE BUDGETING AND
THE PLANNING, PROGRAMMING, AND BUDGETING SYSTEM

A Program-oriented budget system: budgetary decisions must be made on the basis of programs or activities, rather than object classifications.	A Program-oriented budget system: budgeting decisions must be made on the basis of programs or activities, rather than object classifications.
Top-down guidance and bottom-up detail approach.	Top-down approach.
Combines planning, budgeting and operational decision making into a single process.	Separates planning, programming and budgeting processes.
Quantifies non-dollar costs and benefits as well as direct dollar cost and benefits.	Quantifies only direct dollar costs and benefits.
Emphasizes incremental changes in costs and benefits that result from budgeting decisions.	Emphasizes incremental changes in costs and benefits that result from budgeting decisions.
Management oriented.	Management oriented.
Uses a priority ranking system.	
Requires explicit statements of consequences of not performing, and explicit identification of alternatives.	

effectively linked with a microeconomic planning and budgeting technique"[29]...with ZBB providing that micro-economic link.

The potential of ZBB is to serve as the coordinating link between the macro-world of policy and the micro-world of operations is best explained by Figure 6 dipicting the integrated world of PPBS/ZBB.

G. WHAT IS NEW ABOUT ZBB

Perhaps at this point of the discussion on ZBB and the compatability of PPBS with ZBB there is a desire to ask the question: "So what else is new?" Such a question is indeed justified when consideration is given to the fact that much of this "new system" called ZBB has long existed within the PPB system utilized by DOD. This same question caused Anthony to state that "zero-base budgeting is a fraud."[31] In making such a statement, Anthony maintained that there was nothing really new about ZBB except that it would force the complete installation of program budgeting within the PPBS structure.

> "So, even though zero-base budgeting is a fraud, and even though the good parts of it are not new, experienced budget people should not let the phrase make them nauseous. They should disregard the rhetoric and latch onto the term as a way of accomplishing what needs to be accomplished anyway."[32]

H. CONCLUSION

As stated previously in this chapter, ZBB is an approach, not a fixed procedure or set of forms to be applied uniformly from one organization to the next. ZBB represents just one of many management tools necessary for effective financial management. It does not represent a panacea for all the resource management problems within the public sector but does provide a powerful technique for the decision maker at all levels of government to get the most out of each dollar consumed.

Upon analysis of the objectives of the ZBB approach to budgeting it is not difficult to visualize the advantages of such a technique. The very fact that ZBB involves all levels of management in the budgetary process and forces the decision maker to do a better job of managing must be considered a desired benefit to any organizational structure.

The disadvantages of ZBB on the other hand appear to be more in keeping with the learning curve phenomena associated with any "new" approach attempting to interface with ongoing system. Any new management process will have an initial effect of increasing the volume of paperwork and cause apprehension on the part of the decision makers who feel that their sphere of influence may be threatened. Therefore, it is not surprising that the implementation of ZBB has had similar problems within the PPBS environment.

In conclusion, the authors of this particular endeavor perceive zero-base budgeting as another management tool to be utilized in developing an environment for better decisions to be made at all levels of government. ZBB is not a replacement for PPBS, but rather a means to improve PPBS. Zero-base budgeting should, therefore, be perceived as:[33]

1. A short run budgeting tool;
2. A work plan;
3. A device for explicit planning;
4. A consistent method for recording financial data;
5. A forcing device for priorities (reallocation of financial resources);
6. A control for implementation;
7. A basis for review; and,
8. A criterion for management information.

This modified approach to ZBB can greatly aid any decision maker in the effective allocation of limited resources. Such an approach/methodology to zero-base budgeting will be explored in depth within Chapters VI and VIII and it is hoped that the virtures of the process will become even more self-evident. Prior to this further development of ZBB, the authors will introduce another potential budgetary tool and possible complimentary asset to the ZBB approach...The Training Management Control System (TMCS).

V. THE TRAINING MANAGEMENT CONTROL SYSTEM (TMCS)

A. INTRODUCTION

1. Purpose

The introduction of Zero Base Budgeting in an environment of constrained resources demands that OMA Program 2 funds to support training be adequately justified. This chapter will describe and analyze a new system, the Training Management Control System (TMCS), which will hopefully be a viable tool to aid in this justification process.

2. Relationships With PPBS/ZBB

From the Planning, Programming and Budgeting System comes the Program Objective Memorandum (POM), the program structure, the budget guidance and eventual appropriated level for OMA, Program 2 (General Purpose Forces) Funds. Given the allocated fund constraints, TMCS should help identify the impacts of constraints on P2 program elements to effectively meet a specific unit's objectives plus provide a tool to utilize resources as efficiently as possible. It is further thought that TMCS will aid the lower-level decision maker in planning the training program and in building a zero-base, unconstrained, budget by costing and documenting training events which can be related to the various levels of performance (Decremented, Basic,

or Enhanced) and further linked to issues/decision packages. The methodology for using TMCS output in the COBE/ZBB process will be explored in Chapter 6. Taking the analysis a step further, Chapter 7 will explore input to output relationships to identify ways in which training readiness/ effectiveness may be measured and the linkage to costs established.

B. BACKGROUND

1. Training Management Problem

With the ending of the Viet Nam conflict, the subsequent drawdown of forces, tightening of the defense budget, inflationary pressures and ever-growing scarcity of resources in an environment of growing demand, the management of training resources has become critically important. Since the military budget represents the majority of non-committed, annual federal funds, Congress has been attempting to minimize its growth.[34]

Training management includes determining the mix of what training to conduct, when and where it is to be conducted, allocating the supporting resources (time, funds, personnel, equipment, ammunition, training areas) required, and assessing the impact of changes of any of them on the training program. It is conducted world-wide by all Army units with a training mission and is decentralized to Battalion (the primary Division manuever and support force)

level. The Battalion Commander is the "key" training manager as he is primarily responsible for determining the training felt necessary to attain the unit's required readiness level. The complexity of this management process is reflected in the following statement:[35]

> .....training management involves a detailed analysis of 40-60 field training events for a battalion, using a possibility of 20-40 different types of equipment with different cost factors and about 70 different types of training ammunition. Recognizing the fact that each division has about 20 combat/combat support battalions or separate companies, the resource allocation problem to support training is clear. Manual computation of all of the above factors, both from an initial training program and from a change to a training program viewpoint, is impossible.

2. Current System

Training management as it currently exists in most of the Army is manual. Very limited capability exists to either accurately provide such data as the variable costs of training by particular unit nor optimize the training which can be conducted within resource constraints. Consequently, assessing the impact of training program changes and their related costs is difficult. An excerpt from DA letter, DAMO, dated February 1977, signed by Lieutenant General E. C. Meyer supports this contention:

> .....Training management in divisions, brigades and battalions in the Army today is a manual process and as such, only a small portion of all the functions that should be performed are in fact being performed. Under current procedures, computing the information

> for filling out Schedule 40 (see Note 1) of the FY 79 COBE required 13.6 man years, involving over 1,000 civilian and military personnel, at a cost to the government of $243,300.00. The inaccuracies of these manual computations result in training requirements not being adequately justified or funded. This is the weakest element in the Army budget today.

From the advocates of TMCS comes this statement: "...the current system is grossly inadequate in meeting the Battalion Commanders' needs from a budgeting and management point of view."[36] Furthermore, the experiences of the authors has been that very little emphasis was placed at levels lower than Division on managing the costs of resources because of these difficulties.

3. Proposed System - An Overview

Utilizing a minicomputer (IBM 5100),

> "TMCS forecasts the cost of field training and quantifies it in terms of Battalion Field Training Days (BFTD's), provides a basis for allocation of resources to support training requirements, assesses the impact of training alternatives, and provides the actual cost of field training when it is completed. The core of TMCS is a linear programming mathematical model which determines what training can be conducted within available training resources, and selects the training to be conducted on the basis of its cost effectiveness contribution to training readiness."[37]

The Commander uses TMCS results interactively; that is, he may modify his priorities and/or reallocate resources

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NOTE 1: Schedule 40 is concerned with the quantification of training requirements and OMA, Program 2, mission dollars to training programs or comparing alternatives based on cost constraints.

based on a previous run (training program), continuing the process until an optimum solution is obtained.[38]

C. TMCS - GENERAL SYSTEM FEATURES

1. Assumptions

The assumptions identified by the system's designers and added by the authors are listed in Table 4.

2. System Objectives/Statutory and Other Regulatory Requirements

The general objectives of TMCS are to provide:

a. The training manager with an automated means to plan, execute and evaluate the use of his resources for maximum training benefit.

b. The cost of field training in terms of Battalion Field Training Days (BFTDs).

c. ZBB input in terms of priced issue areas.

d. A forecast of Ammunition requirements for each training program.

e. Automated training schedules and training area scheduling.

Most of these objectives are implicit in existing Army goals and/or statutory requirements which are in turn reflected in Army Regulations. A matrix, showing how TMCS objectives are intended to meet these goals is at Table 5.

3. Interface with External Systems[40]

In addition to the external PPBS/ZBB linkages previously mentioned, TMCS uses inputs from three other

TABLE 4

TMCS ASSUMPTIONS

Made by TMCS Designers

1. Funds will continue to be constrained and Zero Based Budgeting will be continued.

2. The Army desires to improve training management to include projecting accurate cost data.

3. Financial management within the division and separate brigades will continue.

4. The DA Training Ammunition Management Information System (TAMIS) will be implemented.

5. The Army will probably not obtain significant increases in maneuver areas.

6. Unit training will continue to be conducted as outlined in specific Army Training and Evaluation Programs (ARTEP), Major Command (MACOM) Training Guidance, Division Training Objectives and unit commander desires and priorities.

Added by the Authors

7. The cost factors utilized will be validated and updated for changes in Table of Organization and Equipment (TOE), to include authorized personnel, types of equipment, ammunition and missions.

8. The economic (cost/benefit) analysis utilized to recommend the minicomputer system as the most acceptable alternative was accurate and objective.

9. The system will produce the output that it is designed for. The principles of reasonable systems design and implementation, such as top-management and user interest and involvement, concise documentation, testing in a real enviornment, training provisions, etc. are followed. (See Note 2)

NOTE 2: Programs were developed by a systems analyst (with LP training), a BASIC programmer and functional personnel from both the operations and comptroller areas.

10. The personnel designated to operate the system will be available and able to effectively operate the system without degrading other responsibilities.

11. The equipment and financial resources required to execute the system will be available.

12. Interservice competition for DOD funds will make accurate budget forecasting and justification imperative; current manual forecasting systems are inadequate.

TABLE 5

TRAINING MANAGEMENT CONTROL SYSTEM (TMCS)
OBJECTIVES WHICH MEET
STATUTORY/REGULATORY REQUIREMENTS

TMCS OBJECTIVES / STATUTORY AND OTHER REGULATORY REQUIREMENTS	MAXIMUM TRAINING BENEFIT WITHIN AVAILABLE RESOURCES	DETERMINE COST OF FIELD TRAINING/ BFTD	PRICE/QUANTIFY ZBB ISSUE AREAS	FORECAST TRAINING AMMUNITION BY DODIC	AUTOMATED TRAINING SCHEDULE/RECORD	AUTOMATED MANEUVER AREA SCHEDULING/ RECORD
1. TOTAL ARMY GOALS FOR ECONOMY (CUT TRAINING COSTS W/O REDUCING EFFECTIVENESS)	X	X	X			
2. DA BUDGET GUIDANCE/ ZERO BASE BUDGETING REQUIREMENTS (FY 79/80 COBE)		X	X			
3. TNG AMMO MGT INFO SYS (TAMIS) REQUIREMENTS	X			X		
4. ARMY TNG STUDY (ARTS) REQUIREMENTS				X		
5. RECORD KEEPING FOR AR 350-1; MANDATORY TRAINING REQUIREMENTS	X			X	X	
6. DA LETTER, SUBJECT: MAINTAINING STATISTICS ON TA'S AND RANGE UTILIZATION 2 AUG 76						X

systems: the Committment Accounting for Management of Unit Supplies (CAMUS) system (see Note 3), the DA Standard Financial Information System (STANFINS), and the Training Ammunition Management Information System (TAMIS).

a. CAMUS provides the priced value of unit requisitions for stock funded supplies including repair parts. A printout of committed funds by unit and type of equipment, together with monthly equipment usage reports are submitted by units to the MACOM Cost Analysis Office and used to compute equipment operating cost factors. These reports are analyzed monthly to develop revised cost factors. These standard cost factors (in terms of costs per mile, hour or round) provide input to TMCS to estimate the cost of supporting a particular training event.

b. STANFINS records the actual obligations, expenditures, and disbursements of funds and should be coordinated with both TMCS and CAMUS. Programmed use of funds (TMCS) and committment of funds (CAMUS) must both be compared to actual usage to verify that fiduciary responsibilities and consistency of data recording are taking place. The value of requisitions in supply back orders must also be considered in this process.

NOTE 3: CAMUS will be the core system for a new system as yet not implemented; e.g., the Tactical Unit Financial Management Information System (TUFMIS) to be implemented in FY 79/80.

c. TAMIS is basically intended to aid the Commander in managing training ammunition. It requires estimates of annual requirements by type of ammunition (DOD Identification Code) using a subsystem called Training Ammunition for Management (TAMS). TAMIS then provides Division allocations for ammunition in terms of an index value per round. Although the dollars are not P2 mission funds they are inputed into TMCS so that the training manager can compare the training ammunition costs per training event with the TAMIS allocations for ammunition. Over the course of time, TMCS will helpfully provide justification for ammunition requirements and will, therefore, provide input for TAMIS.

4. Internal TMCS Subsystems[41]

TMCS is composed of nine internal subsystems or programs on magnetic tape cartridges:

a. MACOM Cost Factor Program (MCFP)
b. Training Management Information Program (TMIP)
c. Battalion Annual Training Program (BATP)
d. Training Schedule Generator (TSG)
e. Battalion Cost Factor Program (BCFP)
f. Battalion Decision Model (BDM)
g. Division Decision Model (DDM)
h. Training Ammunition Control Subsystem (TACS)
i. Manuever Area Scheduling System (MASS)

The TMCS flowchart at Figure 7 illustrates the relationships of these programs to each other and to the six external systems discussed previously.

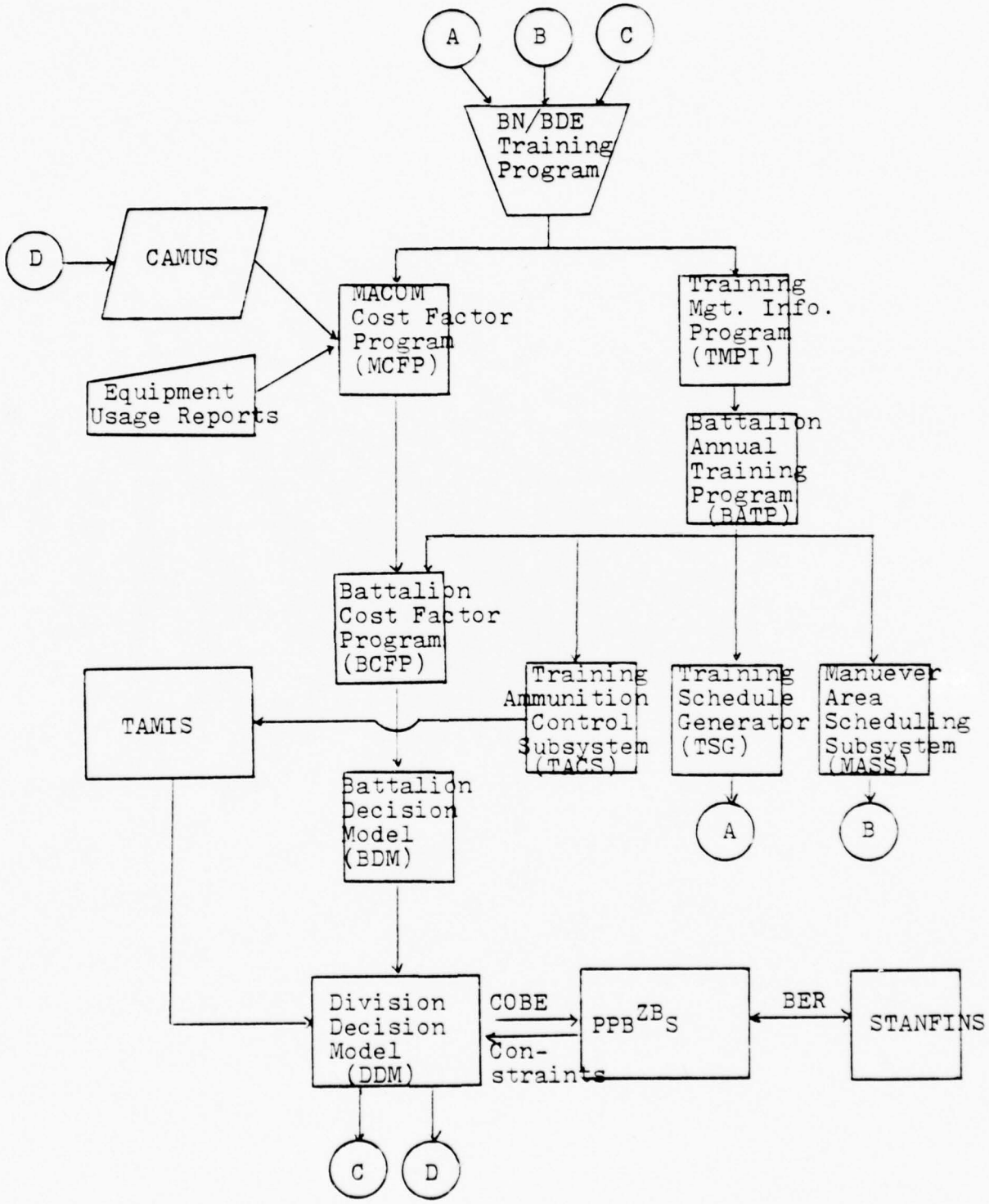
At Annex C, a brief description of each of these subsystems, along with some examples of output, is presented. It is suggested that the reader review this annex to insure an understanding of some of the conclusions/recommendations made in this chapter and the ZBB budget methodology proposed in the following chapter. It should be noted that while important to overall training management, subsystems d, h, and i are not concerned with the management of P2 mission funds.

5. Performance Requirements, Operational Support/ Policies[42] (See Annex D)

D. EARLY IMPLEMENTATION RESULTS

A detailed test plan[43] including milestones, required reports/formats and prototype testing is presently being conducted in live environments at Fort Bragg, North Carolina, Fort Carson, Colorado and Fort Richardson, Alaska (after preliminary operational testing at Ft. Carson in 1977). In an effort to find out what was actually happening at these test sites, the authors conversed by phone and sent an open-ended questionnaire (Annex E) to the TMCS project officer, the OMA, P2 mission budget officer and the Comptroller at

FIGURE 7 TMCS FLOWCHART
(External and Internal Interface)



each installation. A follow-up trip was taken to Fort Richardson and Fort Carson to further build on the answers received. (See Note 4).

The following abstract represents those problems, limitations, and general comments concerning TMCS that were identified during the course of the authors research:

1. CAMUS/Cost Factor Inputs to TMCS

a. Due to editing shortfalls, CAMUS does not always commit funds for spare parts and other stock-funded supplies or in some instances the committments are charged to the wrong units. Annual estimates ranged from 15-75% of all requisitions for an average of $2,000 - $10,000 per unit as falling into a not charged category. Depending on the degree of error, the validity of the cost factors could be affected. Such shortfalls have, however, been identified and it is envisioned that the replacement for CAMUS, the Tactical Unit Information System (TUFMIS), will not have the same shortfalls.

b. In that the maintenance personnel and equipment operators submit the requisitions and usage data reports,

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NOTE 4: Ft. Bragg could provide very little input due to recent major changes in operating procedures. They were only given one IBM 5100 system (in October 1978) and had tried to use it to develop a costed training program for the entire Division. Due to the limited amount of computer time allocated to each unit, this did not work and no useful output had been produced. They are now limiting the TMCS system to a sampling of ten battalions and are in the process of transitioning to this limited operation.

TMCS is somewhat at their mercy with respect to the legitimacy of the cost figures being utilized. For example, some spare parts are common to more than one type of equipment. When maintenance personnel order more than one of these parts at a time, they may simply request the entire quantity on one prepunched card. This can result in under/overstating parts usage for certain types of equipment. In addition, the equipment reports (miles driven, gallons of fuel consummed, etc.) come from operator log books and are thus dependent on accurate operator record keeping. The edit procedure for this record keeping is manual and time consuming. Although not a severe problem, certain discrepencies related to this function are usually found in almost any type of maintenance inspection.

c. Limitations on the miles, hours and rounds cost factors are also seen. The existing cost factors have been identified by applying correlation analysis. Only those factors which show a statistically significant relationship to spare parts and petroleum oils and lubricant costs are used. For example, the rounds fired through an M16 automatic rifle (5.52 MM) is not considered a cost factor due to being statistically non-significant. Therefore, actual costs associated with firing these rounds, such as spare parts for the weapon, will not be reflected in training costs. The same holds true for other pieces of field equipment for which cost factors have not yet been determined.

2. Garrison vs. Training Costs Limitations

a. Garrison costs are defined as the cost of ownership of having the unit in the force structure while conducting no field training (fixed costs).[44]

b. Field training costs are defined as the variable/incremental costs of conducting combat/combat support/combat service support field training for all units to which the BFTD applies.[45] Presently, field training costs (captured by TMCS) for combat and combat support units, are composed of the costs of: aviation gas, aviation/vehicle/other spare parts, diesel fuel and motor gas. In the case of combat service support units the costs of POL and spare parts have been arbitrarily prorated and reported as 50% garrison and 50% field training costs. This means that an assumption has been made for combat and combat support units that no POL or spare parts are considered to be consummed in garrison operations. Thus, for these later two types of units one could simply deduct historically derived fixed costs from total funds available and the remainder would be the variable or training funds constraint.

A major limitation of the system is that although TMCS will automatically allocate garrison costs by element of expense (based on unit strength input data), the overall garrison costs must still be manually estimated.

3. Augmentation to TMCS

Historically, TMCS has produced a training/garrison cost relationship of approximately 25/75%. At Ft. Richardson, they had implimented a decentralized funds control/budgeting system as early as 1976 (two years before they received TMCS to test). The viable manual system they built to assist the lower level commander, the Training/Garrison Cost Capturing System,[46] divided training costs into direct (obviously related to training) and indirect costs (indirectly related)- such as costs of tentage repair kits, paper plates used in training and winterization kits, etc.

It also provides for the computation of pure garrison costs. The results of figures computed via this system have been compared to TMCS output results with a favorable correlation to date. TMCS costs have been in proximity to the direct training costs derived from the manual system and generally understated when indirect training costs are added in. In fact, an almost inverse relationship (training/garrison costs) of 75/25% has resulted.

4. Training Management Limitations

a. Despite the lack of hard output, a Ft. Bragg study group composed of five staff officers directly involved in either training or logistics concluded that "the computerized system currently in use is inadequate in that all training resources can not be accurately projected nor can the system display conflicts between units in the areas of

time, ammunition and training areas." To remedy these shortcomings, they proposed a data-base management system using a central CPU with a master core of resources and constraints.

b. Additionally, a recent graduate of the Naval Postgraduate School concluded the following in his Master's Thesis on TMCS and the Army Training Environment:[47]

(1) TMCS is improperly time constrained; it does not compare available total time against the desired total time load. It can produce an output solution which appears feasible for all constraints while actually being infeasible in terms of total time.

(2) TMCS is not a management control or training control system; it is a funds control system.

His conclusions were drawn from the results of an actual TMCS software test using procedures listed in the TMCS User's Manual.

In analyzing the software test printouts, the authors could find only one clue to why the system failed to evaluate the garrison training inputs. This clue was that the Battalion Decision Model (BDM) did not recognize the "Garrison Tng" field entered in the block marked "Type Training" whereas it did recognize and compute "Field and Range Training". Perhaps a simple adjustment in a program key reader could overcome this limitation; or by recognizing this limitation the operator could identify what he knows to be garrison training as field training and

still receive a BDM printout which includes all time requirements.

5. Miscellaneous Common Problems

a. The present programs need debugging to include an easier method for changing data fields. For example, cost factors and equipment tables are not stabilized. Changing them requires re-running all of the tapes up thru the Division Decision Model (DDM), which entails a time consuming process.

b. POL costs are expressed in dollars but allocated to units in gallons; the program needs to do both.

c. The turnover of TMCS personeel at unit level has created an underutilization of the system as the lower levels.

d. There is a need to build other programs, such as MASS (which is not presently being utilized) which will require more demands on the already pushed CPU/operator time.

6. Linkage of TMCS to the Budget Process

Indications were that TMCS has been used extensively as a training management tool but only sparingly for budgeting. An exact methodology for expanding the role of TMCS as a budget tool had not been developed to the point of implimentation at any of the test sites and poses many complications. Plans are being made for using TMCS in future budget preparations but no details for implementing these plans

were available. Some reluctance to rely on TMCS generated input was noticed on the part of some of the interviewees.

E. CONCLUSIONS

1. Since TMCS is heavily dependent on CAMUS and cost factor inputs (with their inherent shortcomings) the validity of TMCS produced costs can be questionable. However, the replacement of CAMUS with TUFMIS and the validation of cost factors over a 12-18 month period should lessen the fears of "garbage-in, garbage-out."

2. Based on the test results to date, it would seem that TMCS does a fair to good job of computing and documenting direct training costs. The limitations of TMCS in not being able to compute actual indirect training, and garrison costs must be recognized. If the Total Cost Equation is expressed in terms of the TMCS cost factors as:

$$TC = \left[(\text{Event duration hours} \times \$/\text{hours}) + (\text{event miles} \times \$/\text{mile}) + (\text{event rounds} \times \$/\text{round})\right]$$

and the events include just field training events, then the costed events would be a poor estimate of total OMA P2 mission costs ranges. However, if one recognizes this and augments TMCS with a manual cost estimating system for indirect training and garrison costs then TMCS can emerge a useful management tool.

Perhaps the terminology "funds control system" does best fit what TMCS is, but it is still a much faster and more flexible tool for managing training costs than predecessor

systems. The need for an automated tool for managing training funds was obvious and TMCS is a major step in the right direction in this arena.

3. The authors agree that TMCS "optimizes a manually picked, training sequence for budget training areas and field training time constraints "but does not" optimize the training by providing the best mix of training within all constraints."[48] It does appear that substantial adjustments in TMCS software and maybe even some hardware additions are necessary to make it a more viable training management tool.

4. As will be brought out in the next chapter, the authors see a substantial role for TMCS in facilitating the budget formulation process as well as its budget execution role. To do this successfully, however, will require an understanding of the problems associated with technology transfer, the staggering complexity of which is well developed in a Technology Transfer Process Model, the authors of which conclude:[49]

> "Awareness then, even firsthand knowledge of a new and/or innovative idea, is not sufficient to assure its use. There must be a willingness and interest or perhaps more significantly an internal motivation to utilize a better method, process or concept."

A methodology for linking TMCS outputs with budget formulation inputs can not be implemented without such a cooperative effort.

The TMCS computed and costed BFTD is, in essence, a time-saving, automatic computation. The concept of the BFTD

itself, as a measure of effectiveness, really has no bearing on whether or not TMCS is a good system. This will be explored in depth in Chapter 7.

F. RECOMMENDATIONS

1. Recognize and eliminate the CAMUS shortcomings previously discussed when implementing TUFMIS in FY 79/80.

2. Continue to validate present cost factors and look for new statistically significant cost factors which will broaden the range of costs accounted for.

3. Adapt a standardized manual system/model for computing indirect training and garrison costs charged to P2 mission funds which can augment TMCS in the short-run. The model built by the 172nd Infantry Brigade (AK) would be a good starting point.[46] Develop an automated system similar to TMCS to do this over the long-run.

4. Continue to field test TMCS according to the present plan with the following exceptions/modifications:

a. Fill the TMCS equipment shortages present at the 82nd Airborne Division, Ft. Bragg, N. C., as soon as feasible to allow for full-scope testing operations.

b. Where possible make TMCS software adjustments and/or develop new programs which would:

(1) Account for and print out garrison training time in the BDM and DDM so that the mix of training which can be conducted is truly optimum and considers all resource constraints, particularly maximum time available. Where

indirect training or garrison costs include costs presently accounted for by TMCS (for example vehicle use), TMCS should be adjusted to recognize these costs and print them out separately.

(2) Allow the frequent equipment table/cost factor adjustments to be made to but one master program which would automatically adjust the other subprograms in the course of a normal iteration.

(3) Expand the training management capabilities of TMCS by adopting the proposals of the previously referenced NPS (ORSA program) graduate's thesis.

5. Study the Ft. Bragg study group's proposals for a modified TMCS system to see if a program can be added to the present system which will automatically identify resource conflicts between units.

6. Develop a methodology by which TMCS can be linked to the budgeting process. (To be attempted in the next chapter). Coordinate the efforts of and educate appropriate commanders and staff in developing an understanding of and trust for TMCS.

VI. TMCS/ZBB APPLICATION IN COBE FORMULATION

A. INTRODUCTION

In the preceding five chapters the authors have dealt in depth with various developments that virtually "set the stage" for current as well as future approaches to budgeting within the Federal government. The challenges and complexities associated with Federal budgeting make it necessary for any potential player in the financial management arena to have a working knowledge of the entire budgetary spectrum from both a current and a historical perspective. Such a perspective was the intention of the previous chapters of this endeavor. Within this sphere, the authors have attempted to describe and analyze two of the latest management tools (ZBB and TMCS) available to the budgeting community within the Department of the Army (DOA).

The purpose of this chapter is to explore the potential application of TMCS in conjunction with ZBB within the current DOA budgetary environment and develop the methodology required to attain such an interface. This methodological development will be demonstrated within the framework of a hypothetical organizational unit within the Department of the Army (the 199th Infantry Brigade). It is felt that the perspective gained from such a focus of analysis will not only depict the potential application of TMCS to the current budgeting environment but will also

allow for an increased awareness of the complexities inherent in budget formulation at lower levels within the DOA structure.

This process will be further developed as the authors trace the issue building and ranking process involved with formulating the Command Operating Budget Estimate (COBE) at the installation level focusing on OMA Program 2 mission dollars. Although the scope of this analysis is limited to P2 mission funds, it should be noted that similar processes occur in formulating the budget for other OMA programs as well as the other major appropriations.

While the budget formulation phase will be given the major emphasis during the course of this chapter, other areas of budgetary concern will be addressed to include:

1. Discussion of the budget execution phase to include linkages between budgeting and the accounting system.
2. Discussion of potential impacts of proposed budgetary procedural changes at the DOA level.
3. Conclusions and recommendations derived from the analysis of the current budgetary environment.

It should be noted that the authors' are considering the resources of time, space and dollars to be the inputs to the TMCS aided ZBB process. The results of the ZBB process represent an intermediate product of the installation COBE. In turn, the COBE is formulated to help accomplish training objectives (outputs) and the final Army Budget which is designed to help accomplish training/combat readiness

goals (outcomes). The next chapter will focus on these input-output relationships in terms of determining valid measures of effectiveness.

For the reader unfamiliar with some of the acronyms, terminology and procedures used in this chapter, Annex N (Army Management Structure (AMS)/COBE Definitions and Terminology) and the General Glossary at Annex O are provided as guides.

B. 199th INFANTRY BRIGADE

The hypothetical case of the 199th Infantry Birgade will be utilized to demonstrate a potential application of TMCS within the zero-base budgeting environment as well as provide the necessary perspective with respect to the formulation of the Command Operating Budget Estimate (COBE) at the installation level. In order to accomplish these objectives it is first necessary to look at the organizational structure and mission of this hypothetical 199th Infantry Brigade.

The 199th Infantry Brigade consists of five major operational components:

1. The 199th Light Infantry Brigade (combat units)
2. The 333d Aviation Battalion
3. The 1st Battalion, 33d Air Defense Artillery
4. The 502d Engineer Battalion (a U.S. Army Reserve (USAR) organization)

5. The Table of Distribution and Allowances (TDA) augmentation element, which is the staff and several companies that operate the installation.

The primary missions of the 199th Infantry Brigade are to:

1. Command, train, equip, and support all assigned and attached units and activities.

2. Command USAR units and supervise and evaluate USAR National Guard training at Fort Delta.

3. Participate in cold weather and maintain combat developments.

4. Operate the Artic Warfare Training Center.

5. Provide support, as directed, to tenant and satellited DA, DOD, and other Federal Activities.

The 199th Infantry Brigade is physically located at Fort Delta and the Commanding General commands all units and staff Directors assigned and attached to the installation through the Deputy Commander/Chief of Staff. The command organizational structure is as shown in Figure 8.

In that the directors of the Major Activity Directorates (MADs) serve as program directors and members of the Program Budget Advisory Committee (PBAC) in the decentralized fund control process, a brief description of each of their staff responsibilities follows:[50]

1. Office of the Director of Plans, Training and Security (DPTSEC):

   Principal staff responsibility for matters pertaining to force development, security, training, nuclear, biological and chemical activities, and mission operations.

FIGURE 8 ORGANIZATION OF THE 199th INFANTRY BRIGADE

1. Serves concurrently as DC-E.
2. Serves concurrently as HQ Commandant

2. Office of the Director of Personnel and Community Activities (DPCA):

Principal staff assistant in matters of civilian and military personnel administration, distribution and management; maintenance of discipline, law and order; and various personnel services and community activities.

3. Director of Industrial Operations (DIO):

Principal staff office for matters pertaining to the provisioning of supplies, services, maintenance, petroleum, transportation, miscellaneous logistic support and formulation of command logistic support policy.

4. Director of Facilities Engineering (DFAE):

Plans, directs and coordinates operations pertaining to maintenance and repair of real property facilities and other engineering activities and services.

Although not technically a program director, the Comptroller is a key player in the funds control process having staff responsibility for budgeting, audits, finance and accounting, financial management, accounting and internal controls, review and analysis, management and industrial engineering and economic analysis. As will be shown later, although the DPTSEC is the OMA, P2 mission program director, such funds will have to be combined with other non-P2 funds and thus cut across organizational lines of responsibility and program element/key accounts when fielding issues in the ZBB process. It is, therefore, important for the reader to know the basic functional responsibilities of the MADs.

The 199th Light Infantry Brigade (LIB), which represents the combat units of the brigade, is broken down into three

separate battalions consisting of five companies each. The types of companies associated with each battalion include:

1. Headquarters Company (1)
2. Combat Support Company (1)
3. Rifle Companies (3)

What follows is a detailed case analysis approach to the budget formulation phase, both in the unconstrained and constrained environments. Although written in a concise, step-by-step manner, this approach is still intricate and requires very careful reading for complete comprehension. Be aware that only one of many programs making up the total funds involved is used in this methodology which illustrates the complexities of the aggregate process.

C. METHODOLOGY FOR APPLYING TMCS TO A ZBB APPROACH IN AN UNCONSTRAINED ENVIRONMENT AT COMPANY LEVEL

Since the zero base concept offers significant potential to increase effectiveness and efficiency at the lower management level, where resources are being consumed, it is appropriate to initially focus attention on the Company level of management within the 199th Light Infantry Brigade and demonstrate a potential application of TMCS within a ZBB environment for OMA, P2 mission type funds. To demonstrate this application it is necessary to perform a step-by-step analysis and discussion of the hypothetical yet probable actions taken by a Rifle Company Commander (A Co.) of 1st.

Battalion, 99th Infantry, as he goes through the development of his company's field training program for the coming fiscal year.

1. Step I - Guidance

The initial step of this process would entail the 1st Battalion Operations Officer (BN S-3) providing the Company Commander of A Company (see Figure 9 - Company Organization and Table 6 - Company Manning and Equipment Levels) with the time constraints for field training (the number of Battalion Field Training Days at his disposal). The Company Commander would also be given basic training guidance derived from higher command and the assessment of training strengths and shortfalls of A Company by the Battalion Commander and the S-3. In addition, the BN S-3 might allocate or limit the number of flying hours (if applicable), acre days, training areas and ammunition the Company Commander had to consider as constraints to his training program.

For this example the BN S-3 has given the Company Commander the constraint of: 17 BFTD's and 100,000 Acre Days using the BFTD computation formula (which is described in the subsequent chapter). Seventeen BFTDs would be equivalent to 85, eight to twenty four hour days or 170, four hour days. Taking into account things such as holidays, garrison requirements, and other taskings; this is not an unrealistic annual constraint.

RIFLE COMPANY, INFANTRY BATTALION (MECHANIZED) ARMORED DIVISION
OR
RIFLE COMPANY, INFANTRY BATTALION (MECHANIZED) INFANTRY DIVISION
OR
RIFLE COMPANY, INFANTRY BATTALION (MECHANIZED), INFANTRY DIVISION (MECHANIZED)
OR
RIFLE COMPANY, INFANTRY BATTALION (MECHANIZED), SEPARATE ARMORED BRIGADE
OR
RIFLE COMPANY, INFANTRY BATTALION (MECHANIZED), SEPARATE INFANTRY BRIGADE (MECHANIZED)

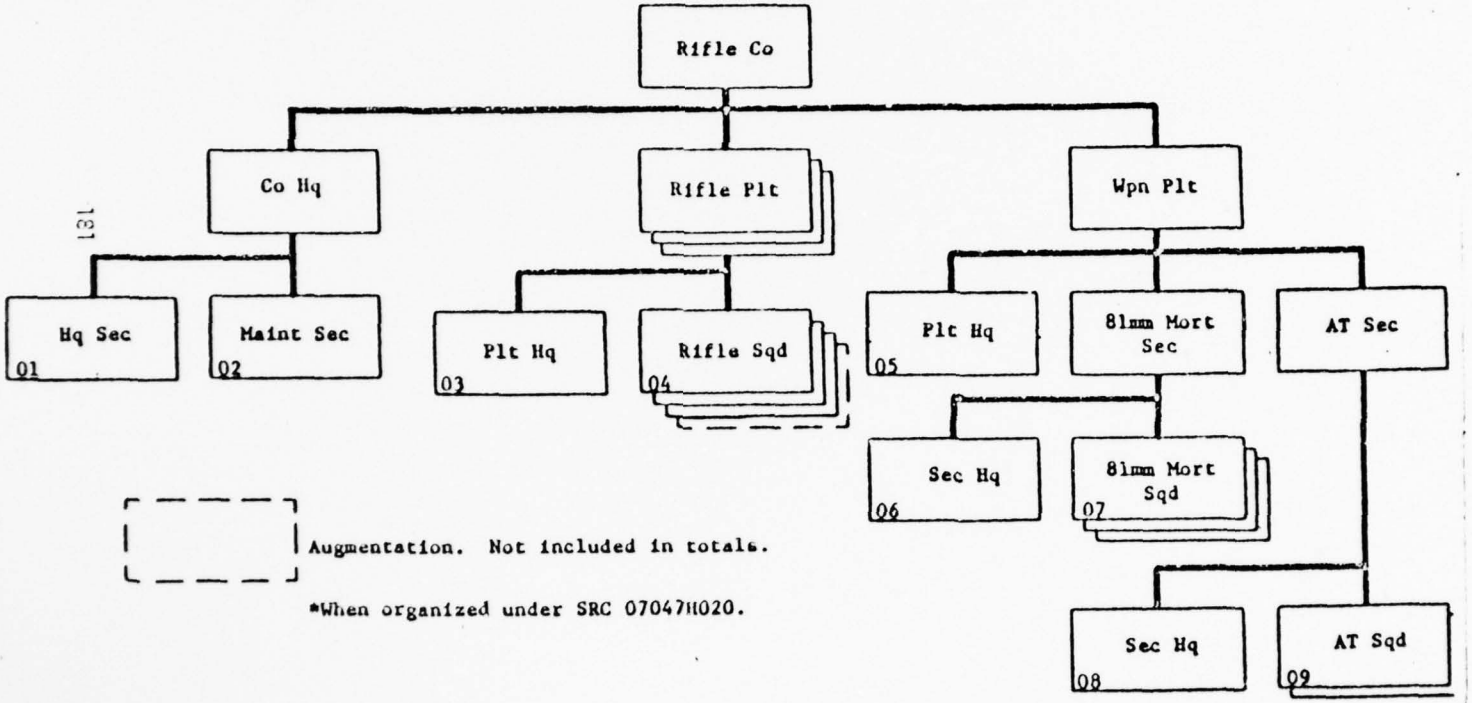

FIGURE 9: Company Organization

TABLE 6

COMPANY MANNING AND EQUIPMENT LEVELS

TOE MANNING

SECTION	NUMBER OF MEN
Headquarters	10
Maintenance	11
Rifle Platoons (3)	114
Weapons Platoon	23
Anti-Tank Section	8
TOTAL	166

TOE EQUIPMENT

EQUIPMENT	NUMBER OF ITEMS
Armored Personnel Carrier M113	14
Armored Personnel Carrier M106	4
1/4 Ton Trucks	5
2 1/2 Ton Trucks	3
81MM Mortars	3
TOW Anti-Tank Missle Systems	2
Grenade Launchers M203	21
Machinegun M-60	15
Machinegun .50 Cal	21
.45 Cal Pistol	13
.45 Cal Sub-Machinegun	2
Rifles M-16	

2. Step II - Company Commander's Determination

Upon analysis of the time constraints and training guidance provided to him by the BN S-3 the Company Commander would merge this information with a personal judgement of the training/combat readiness within the Company and develop a prioritized list of desired field training events for the coming fiscal year.

During this prioritization process, the Company might utilize the following convention in order to translate TMCS procedures to the ZBB process:

PRIORITIES	LEVEL OF PERFORMANCE
8.00 thru 9.00	Decremented
7.00 thru 7.99	Basic (Financed)
5.00 thru 6.99	Enhanced

3. Step III - Input to TMCS

At this point the Company Commander is ready to enter the unconstrained (with respect to funding) training program into the Training Management Control System (TMCS). In order to do this the Company Commander must:

a. Identify Any Resource Limitations

In this case, time (BFTDs) and acre days are considered constraints and therefore all funding areas are initially put at the maximum allowable resource limitation of TMCS ($999,999.99).

b. Insure All Training Events Are Prioritized

Each event must be assigned a priority from 5.00 to 9.00 in accordance with the above mentioned convention with 9.00 being the highest and 5.00 the lowest.

c. Develop a Resource Utilization for Each Training Event

The Training Management Information Program (TMIP) of TMCS prints out a Training Information Worksheet (see Annex C) for each training event. The Company Commander would fill in the applicable blanks with the resource inputs. Each of the annual training events is then aggregated into the unconstrained training programs via the Battalion Annual Training Program (BATP) Model with output, similar to the printout at Appendix 2, Annex C, though appropriate for a company sized unit.

d. Pricing of Input/Entering of Non-Dollar Constraints

Using input from the externally developed MACOM Cost Factor Program and the BATP output as input, the training program is then costed by the Battalion's Cost Factor Program (BCFP) and held internally within the BATP program. The set of resource constraints ($ costs, flying hours, BFTDs), acre days) are then entered into the Battalion Decision Model (in this case the Company Decision Model).

4. Step IV - Outputs of TMCS

Having input the required information to TMCS the system provides the Company Commander with the following printed outputs: (see Appendix 3 to Annex C)

a.

RESOURCE LIMITS	MAX
AVSPARES $	999,999.99
AVGAS $	999,999.99
MOGAS $	999,999.99
SPARES $	999,999.99
DIESEL $	999,999.99
OTH COST $	999,999.99
FLY-HRS	0.00
BFTD	17.00
ACRE DAYS	100,000.00

These resource limits represent the resource constraints applicable to the Company Commander's training program. In this particular example, the training program is unconstrained except for time (17 BFTD's) and acre days (100,000) with flying hours being non-applicable for this particular type unit. The ammunition requirements will show up on a separate printout provided by the Training Ammunition Control Subsystem (TACS) program. As these are not P2 related costs, this portion of the process will not be further pursued in this case illustration.

b.

EVENT NAMES	STATUS	BFTD'S
NBC	OPTIONAL	.50
M16 Z/QUAL	OPTIONAL	1.00
COMP L FIRE	REQUIRED	1.00
FLD DRIVING	OPTIONAL	1.00
TOW QUAL	OPTIONAL	.01
VEH RECOVER	OPTIONAL	1.00
CIV DEF TNG	OPTIONAL	1.00
CBT BUA	OPTIONAL	1.00
SQD ARTEP T	OPTIONAL	1.00
PLT ARTEP T	OPTIONAL	1.00
ANTI ARMOR	OPTIONAL	1.00
FTX	REQUIRED	3.00
PLT ARTEP TR	OPTIONAL	.50

This output from TMCS represents all the various training events that were input by the Company Commander as

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A MULTIDIMENSIONAL ANALYSIS OF DOA'S BUDGETARY PROCESS USING ZE--ETC(U)
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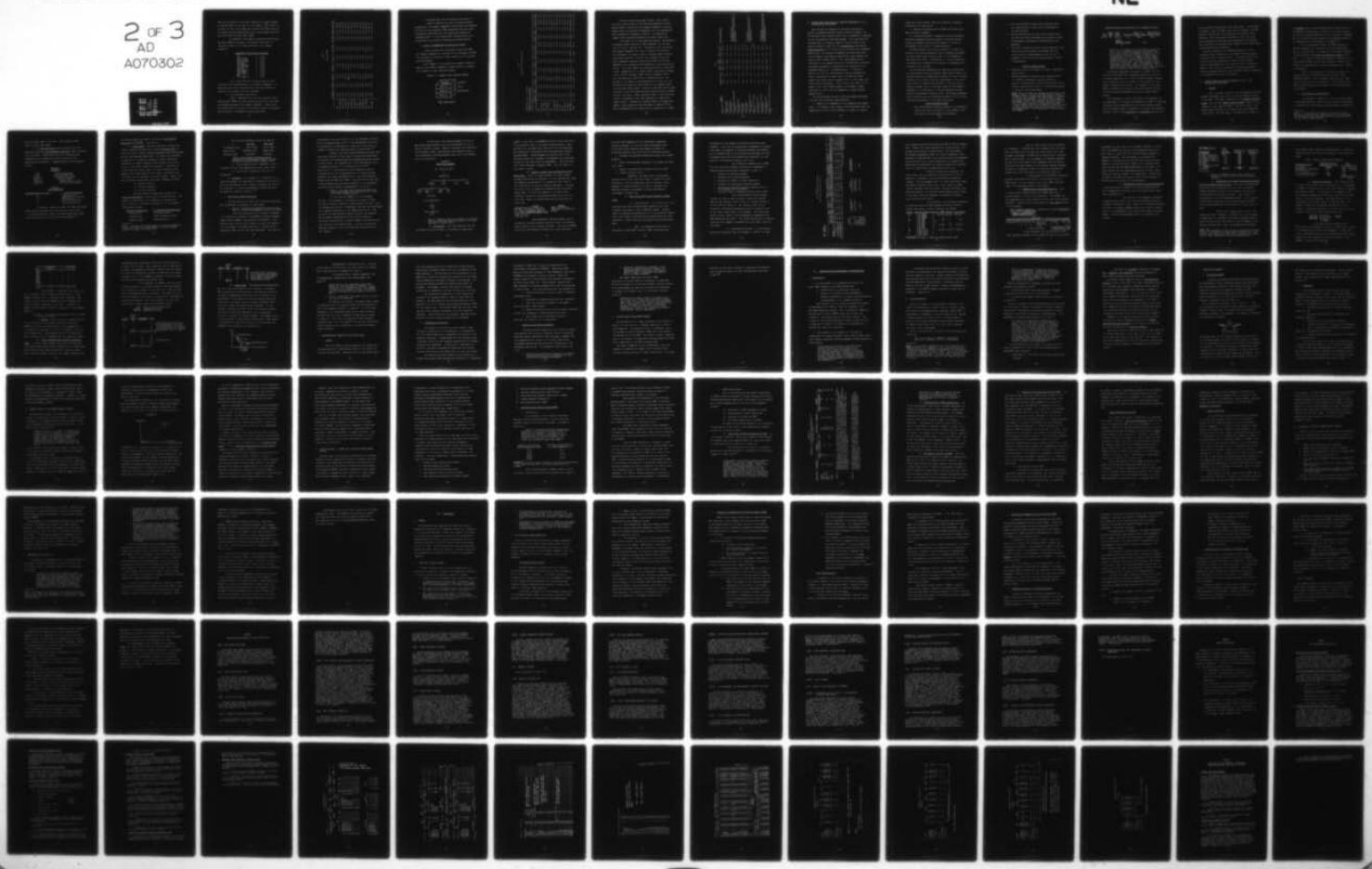

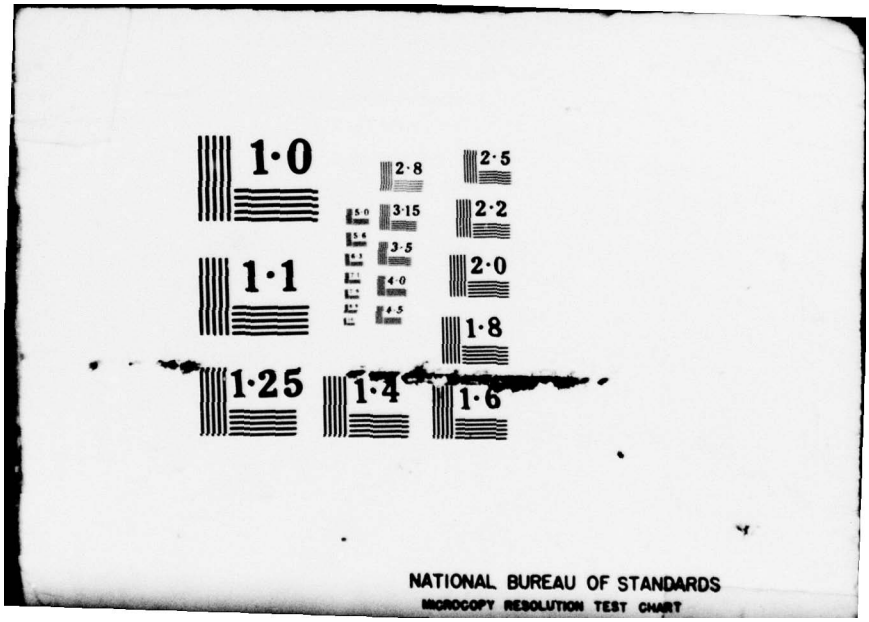
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4·5
NATIONAL BUREAU OF STANDARDS
MICROCOPY RESOLUTION TEST CHART

well as the status of the event (required by higher Command or discretionary on the part of the Company). [It should be pointed out that this simplified training event mix shown is for budget process demonstration only, using sample data and printouts from an actual TMCS run.]

In addition, the number of Battalion Field Training Days (BFTD's) required to accomplish each event is calculated based on the input provided by the Company Commander.

c. COMMANDER'S PRIORITIES FOR EVENTS

NBC	=	5.20
M16 Z/QUAL	=	8.40
COMP L FIRE	=	8.70
FLD DRIVING	=	5.50
TOW QUAL	=	8.30
VEH RECOVER	=	5.60
CIV DEF TNG	=	6.00
CBT BUA	=	6.10
SQD ARTEP T	=	8.00
PLT ARTEP T	=	7.40
ANTI ARMOR	=	8.30
FTX	=	8.90
PLT ARTEP TR	=	7.40

This output reflects the priorities for each training event as determined by the Company Commander. As mentioned previously these priorities are set between the range of 5.00 (lowest) and 9.00 (highest).

d. Cost Per BFTD (See Table 7)

Table 7 represents the cost per Battalion Field Training Day (BFTD) for each training event within the training program desired by the Company Commander. These costs are broken down by the cost of the various types of resources being consumed to accomplish a particular event.

TABLE 7

COST PER BFTD

	AVSPARES $	AVGAS $	MOGAS $	SPARES $	DIESEL $	OTH COST $	FLY HRS	BFTD	ACRE DAYS
NBC	0.00	0.00	50.53	6.18	0.00	0.00	0.00	1.00	494.00
M16 Z/QUAL	0.00	0.00	25.27	3.09	0.00	0.00	0.00	1.00	988.00
COMP L FIR	0.00	0.00	74.08	159.89	0.00	0.00	0.00	1.00	3952.00
FLD DRIVIN	0.00	0.00	181.36	156.60	0.00	0.00	0.00	1.00	2223.00
TOW QUAL	0.00	0.00	8688.00	3830.00	0.00	0.00	0.00	1.00	24700.00
VEH RECOVE	0.00	0.00	45.34	39.15	0.00	0.00	0.00	1.00	3952.00
CIV DEF TN	0.00	0.00	68.90	24.24	0.00	0.00	0.00	1.00	247.00
CBT BUA	0.00	0.00	71.59	61.20	0.00	0.00	0.00	1.00	247.00
SQD ARTEP	0.00	0.00	101.70	194.30	0.00	0.00	0.00	1.00	6175.00
PLT ARTEP	0.00	0.00	101.70	194.30	0.00	0.00	0.00	1.00	6175.00
ANTI ARMOR	0.00	0.00	107.68	278.70	0.00	400.00	0.00	1.00	24700.00
FTX	0.00	0.00	63.40	225.62	0.00	0.00	0.00	1.00	8233.33
PLT ARTEP	0.00	0.00	29.87	45.00	0.00	0.00	0.00	1.00	12350.00

e. Training That Can Be Conducted (See Table 8)

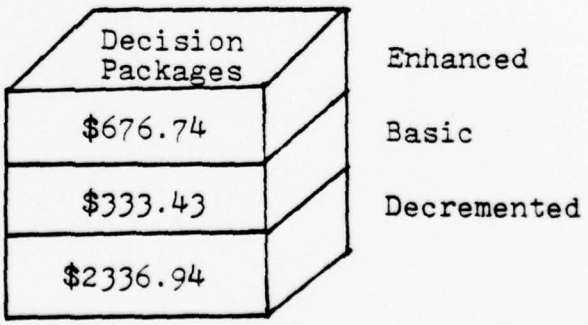
Table 8 reflects the entire training program requested by the Company Commander and provides the Commander with all the cost figures, BFTD information and acre days utilization associated with this particular program of training events. It also shows what training can be conducted within the limited constraints provided earlier.

5. Step V - Commanders Utilization of Output

Given the previously discussed outputs from TMCS the Company Commander now has much of the necessary information available to develop a budget request for the desired training program.

With respect to this particular example, Figure 10 depicts the Company Commander's budget request in support of his specific field training program.

FIGURE 10 - COMPANY FIELD TRAINING BUDGET



ZERO-BASE BUDGET

TABLE 8

TRAINING THAT CAN BE CONDUCTED

UNIT NAME-----A CO 1/ 99th INF

TRAINING THAT CAN BE CONDUCTED

	AVSPARES	AVGAS $	MOGAS $	SPARES $	DIESEL $	OTH COST $	TOTAL $	FLY-HRS	BFTD	ACRE DAY	%-CONT
NBC	0.001	0.00	25.271	3.091	0.001	0.001	28.361	0.001	.501	247.00	5.60
M16 Z/QUAL	0.00	0.00	25.271	3.09	0.00	0.00	28.36	0.00	1.00	988.00	8.78
COMP L FIRE	0.00	0.00	74.08	159.89	0.00	0.00	233.97	0.00	1.00	3952.00	8.89
VEH RECOVER	0.00	0.00	45.34	39.15	0.00	0.00	84.49	0.00	1.00	3952.00	6.15
CIV DEF TNG	0.00	0.00	68.90	24.24	0.00	0.00	93.14	0.00	1.00	247.00	6.59
FTX	0.00	0.00	190.20	676.85	0.00	0.00	867.05	0.00	3.00	24700.00	9.77
PLT ARTEP TR	0.00	0.00	14.93	22.50	0.00	0.00	37.43	0.00	.50	6175.00	8.12
FLD DRIVING	0.00	0.00	181.36	156.60	0.00	0.00	337.96	0.00	1.00	2223.00	6.04
TOW QUAL	0.00	0.00	86.88	38.30	0.00	0.00	125.18	0.00	.01	247 00	8.45
CBT BUA	0.00	0.00	71.59	61.20	0.00	0.00	132.79	0.00	1.00	247.00	6.70
SQD ARTEP T	0.00	0.00	101.70	194.30	0.00	0.00	296.00	0.00	1.00	6175.00	8.34
PLT ARTEP T	0.00	0.00	101.70	194.30	0.00	0.00	296.00	0.00	1.00	6175.00	8.12
ANTI ARMOR	0.00	0.00	107.68	278.70	0.00	400.00	786.38	0.00	1.00	24700.00	8.45
USED	0.00	0.00	1094.90	1852.21	0.00	400.00	3347.11	0.00	13.01	80026.00	100.00

The above mentioned budget request, when coupled with the actual outputs of the Training Management Control System (TMCS), would allow the Company Commander to provide higher level (the Battalion Commander) with the appropriate cost information, displayed in Table 9, concerning the company field training program for the next fiscal year.

As brought out in the preceding chapter, the Elements of Expense (EOEs) captured by TMCS represent the variable costs of direct training only. Recognizing the limitations, the Company Commander will have to provide the Battalion with estimates of certain indirect training (semi-variable) costs where possible. As such, this Company (along with other Companies, separate platoons and staff activities) represent cost centers and the Battalion a cost distribution center. Such other EOE's may include portions of travel/TDY (2100), transportation of things (2200), self-service supply (2655), direct exchange (26DX), medical supplies (2660), etc. and should be distributed to training events. Depending on the degree of decentralization in the unit, the Battalion may determine these costs for the Company based on non-dollar usage inputs. Garrison costs which can include portions of the above EOEs and such others as rents (communications, utilities - 2300), printing (2400), other services (2500) or equipment (3100) will generally be captured at higher levels. A model for a manual system for augmenting TMCS in these capacities was discussed in Chapter 5[46] as were recommendations for improving the capabilities of TMCS.

TABLE 9

EVENT	PRIORITY	BFTD's	MOGAS (264M)	EOEs' SPARES (261X)	DIESEL (2640)	TOTAL$ COSTS	LEVEL OF PERFORMANCE
Field Training Exercise (FTX)	8.90	3.00	190.20	676.85	0.00	867.05	
Company Live Fire (COMP L FIRE)	8.70	1.00	74.08	159.89	0.00	233.97	
M16 Qualification (M16 Z/QUAL)	8.40	1.00	25.27	3.09	0.00	28.36	Decremented Level: ie, Readiness level barely maintained with all training objectives not achieved.
Anti Tank Missle Qualification (TOW QUAL)	8.30	.01	86.88	38.30	0.00	125.18	
Anti Armor Training (ANTI ARMOR)	8.30	1.00	107.68	278.70	0.00	786.38	
Squad Testing (SQD ARTEPT)	8.00	1.00	101.70	194.30	0.00	296.00	
Platoon Testing (PLT ARTEPT)	7.40	1.00	100.70	194.30	0.00	296.00	Basic Level: ie, Attain/Maintain proficiency in Manual/Level 1 ARTEP Tasks (Key Training Events)
Platoon Mechanized Testing (PLT ARTEP TR)	7.40	.50	14.93	22.50	0.00	37.43	
Combat in Built Up Areas (CBT BUA)	6.10	1.00	71.59	61.20	0.00	132.79	
Civil Defense Training (CIV DEF TNG)	6.00	1.00	68.98	24.24	0.00	93.14	
Vehicle Recovery Training (VEH RECOVER)	5.60	1.00	45.34	39.15	0.00	84.49	Enhanced Level: ie, Level above current level, where increased output is consistent with training objectives.
Field Driving Training (FLD DRIVING)	5.50	1.00	181.36	156.60	0.00	337.96	
Nuclear, Biological Chemical Training (NBC)	5.10	.50	25.27	3.09	0.00	28.36	

D. HIGHER LEVEL APPLICATION OF TMCS/ZBB METHODOLOGY IN AN UNCONSTRAINED ENVIORNMENT

Upon receipt and analysis of the field training requests and appropriate TMCS outputs from each Company, the 1st Battalion. 99th Infantry would then be required to formulate its own unconstrained training program. This task would be accompolished in a similar manner to that utilized in the previous example except for the consolodation and possible reprioritization at the discretion of the Battalion Commander. Additionally, the Battalion Commander and staff must plan for any support requirements needed from Combat Support and Combat Service Support Units. Such requirements can be identified in the remarks section of the TMIP when coordinating Company programs in preparation for rerunning of the programs leading up to the BDM printout. It should be pointed out that the unconstrained training programs must first be developed by combat units, followed by combat support and combat service support units in that order, all using similar procedures. This is due to the logic of the support chain where combat support units support combat units and, in turn, both are supported by combat service support units.

The unconstrained Battalion training program developed will have the following characteristics:

1. Based on the aggregate of the Companies and staffs input. (A battalion level budget clerk performing under the supervision of the S-3 will probably be needed to compile

these cost center inputs, which will require a staffing modification in most units.)

2. Resource limitations of *75 BFTD and 500,000 acre days (*for this example).

3. Prioritized based on Companies input and possible Battalion Commander re-prioritization utilizing the previously discussed convention with respect to levels of performance which equate to budgeted levels.

The BDM program could also be modified to accept and printout the words decremented, base or enhanced alongside the event names under status or next to the commander's priorities for events. Furthermore, it could be modified to automatically determine the category by programming the convention into the BDM.

As the Battalion Commander and staff plan and develop the unconstrained training program, TMCS would document the decisions made and automatically estimate the cost of direct training at the various levels of performance. This information would be compiled and provided to the 199th Light Infantry Brigade (LIB) in the same format as the Company's submission to the Battalion to include manually derived indirect and garrison training costs. The Brigade Commander would therefore have the following information on the filed training requirements of the combat battalions:

<u>From the Modified TMCS</u>

1. The unconstrained training program for the Battalion within the given limitations of time (BFTD's) and acre days to include support requirements.

2. The cost per BFTD for each field training event (the significance of which will be discussed in the next chapter).
3. The priorities given to each field training event and thus the events that make up the various levels of performance (Decremented, Basic/Current, and Enhanced).
4. The direct training and some indirect/garrison costs (where cost factors exist) associated with the various levels of performance as well as the incremental costs within and between specific levels of performance.

From the Manual System

1. Estimated costs by unit/EOE of indirect training by type of event.
2. Estimated garrison operations and training costs by unit/EOE; although not usually related to specific training events these costs are part of P2 mission costs and will have to be eventually related to decision units/issue areas.

NOTE: Both of these cost categories will have to be manually added to direct training costs in order to determine total unconstrained requirements in support of the training program. As most garrison costs are fixed they should be included in the decremented performance level. The indirect training costs, on the other hand, should be incrementally recorded (using a Master Code List of possible training events) in such a manner that they can be equated to the performance level of the appropriate training events. For example:

RESOURCE PROJECTION/CONSUMPTION LOG-INDIRECT TRAINING

UNIT	EVENT CODE	EVENT DATA	TDY(2100)	TRANS. OF THINGS (2200)	SELF-SERVICE SUPPLY (26SS)
A/1-99	34	2/22/79	-0-	$100	$25

DIRECT EXCHANGE (26DX) .....ETC.

-0-

Where 34 is a company live fire exercise scheduled by A Co in the previous example with a priority of 8.7 and a total training cost of $233.97. Here we are projecting that two TMP (civilian-type) vehicles will be used to augument company organic transportation at a cost of $100 and that paper plates and plastic utencils will be used to serve lunch at a cost of $25. This $125 should be considered as necessary to meet a decremented training requirement and hence added to the $233.97. If this had equated to an enhanced level (lower priority) then it should be added to the enhanced level.

The training management limitations of TMCS[47] at this level were discussed in the preceding chapter and will not be further amplified here. Some of these problems, however, if not corrected could also impact on the validity of the system to manage costs as well. For example, if the time (BFTD) constraints are invalid, then the resultant costing of the unconstrained program would likely become invalid as well.

It is important to note at this point that perhpas the key advantage of utilizing a ZBB approach via TMCS to formulate the direct field training portion of the P2 Mission budget (and the manual system to formulate the indirect and garrison portion), lies in the quantified and documented decisions at

each succeeding organization level that result. As discussed in Chapter V, prior to TMCS there was no automated or formal system to capture the costs associated with direct field training. The totally manual estimate of such costs was time consumming and abstract and consequently this process did not provide the desired fiscal impact for the field training decisions being formulated.

Another advantage of the TMCS/ZBB approach to field training budget formulation is the power of prioritization of specific field training events. This prioritization not only provides the parameters of events within certain levels of performance but also serves to give the decision maker at all levels the potential to develop alternative training programs when given the eventual resource constraints for his particular level of influence.

E. COMMAND OPERATING BUDGET ESTIMATES (COBE) - THE CONSTRAINED ENVIRONMENT

1. General

While the exact timing of the unconstrained training program development will vary, it must be completed prior to the COBE. The COBE, consisting of the Command Operating Budget (COB) and the Command Budget Estimate (CBE), is the Command's total budget document. The COB is input to the apportionment process in the budget year (next immediate fiscal year). The CBE leads to the President's budget for

the program year or next succeeding fiscal year (See Note 1). Considerable significance is attached to the CBE because it is the only scheduled opportunity the installation commander has to influence the Army budget for the program year prior to submission of the DOD Budget to Congress.[51]

At the installation level, the COBE formulation process generally will take place from late March/early April to mid/late May. It begins with the MACOM's issuance of administrative and Budget and Manpower Guidance (BMG). Next, all feasible budget requirements formulated in the unconstrained phase are zero-base budgeted. Finally this leads to a determination of which requirements are financed or unfinanced.

Most of the remainder of this section traces the general steps in the COBE formulation using FY 79/80 COBE/ZBB guidance. OMA, P2 mission funds are again used as the vehicle for this illustration. Potential uses for TMCS are highlighted where linkage with the ZBB procedures was possible.

2. The Dynamics of Terminology

As discussed in Chapter IV, the evolutionary aspect of ZBB implementation within the public sector has resulted in differences in ZBB terminology from agency to agency and

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NOTE 1: Since the COB is based on the previous years CBE and is developed simultaneously with the current CBE, the authors will use the acronym COBE in future references to the overall budget process.

from one fiscal year to the next. The following terms reflect current Army Usage.

a. The decision units used are derived from the previously existing Army Management Structure (AMS) contained in AR 37-100-XX. These decisions units, whether actual organizations or programs are directly tied into the appropriations categories. Examples under the OMA category include:

PROGRAM 2
(MISSION)

Code	Activity Structure
202185	Alaska Defense Forces
202185.1	Infantry Brigades
202185.2	Aviation Units
202185.21	Combat Aviation Units
202185.29	HQ, Aviation Battalion

PROGRAM 2
BASE OPERATIONS

Code(Reportable Accounts)	Activity Structure
Z	Base Operations
E	Laundry & Dry Cleaning
F	Food Service
G	Recreation Services
3	
L	Minor Construction

As AMS was a product of PPBS, the Army has heeded OMB's original guidance that "each decision unit should, to the extent possible, reflect existing program and organizational structures that have accounting support."[52]

Accounting support did exist in AR 37-100, Account/Code Structure and STANFINS. (See Note 2).

b. Issue Areas: The major difference between this current term and the previously utilized decision unit is that the "issue" crosses subprogram/program element/functional account and organizational lines. An "issue" can therefore be defined as: a specific program or task of sufficient importance to require separate identification and justification in the budget formulation process.[53] Although not clearly defined in many cases, the issue categories were given to the installations for the sake of uniformity and to insure that the important ones were covered. Twenty five OMA, P2 mission issues were identified. Examples include:

(1) Special Training

(2) Off-Post Training

(3) On-Post Training

c. Another change in terminology concerns the levels of performance utilized within the ZBB process. This change in terminology can be displayed by equating the basic convention, discussed in Chapter IV, to the current terms being utilized

Chapter IV Terminology	FY 1979/80 COBE Terminology
Minimum Level	Decremented Level
Current Level	Basic (Financed) Level
Enhanced Level	Enhanced Level

NOTE 2: Although beyond the scope of this study, possible linkage deficiencies of AMS/STANFINS to support PPBZBS should be a topic of further study.

The following benchmark rules also applied:

(1)	*FY 1979	**FY 1980
Decremented Level	90% of Basic	80% of Basic
Basic Level	***FAPBS w/adj	FAPBS w/adj
Enhanced Level	Unlimited	Unlimited

*Only intra-program transfers allowed
**Intra and Inter-program transfers allowed
***FORSCOM Automated Program Budget System

(2) The decremented level (90%/80%) is only a constraint at the total appropriation level (OMA total).

(3) Only Direct Obligations (DO) will be decremented.

d. Increment: An increment is, by definition, a "decision package" (an identifiable increase for an activity, above the decremented level, based on workload) and should be constructed to include requirements of equal priority and possible (feasible) execution.[54]

3. Key Steps - COBE Formulation

The following major stpes, while listed sequentially, may be performed concurrently in some cases:

a. Step 1: Installation Comptroller receives and analyzes funding and manpower guidance from MACOM.

Since the hypothetical unit belongs to FORSCOM, this guidance is contained in the FORSCOM Automated Program Budget System (FAPBS), as modified by adjustments. This analysis must include a well thought out plan for breaking out the guidance to program directors to include the de-drementing logic (%) for each OMA subprogram. This must be

done properly from the outset due to the synergistic effects on all following steps; that is, "the decremented level will be considered as a formulation or base point from which increments involving all resources will be constructed."[55]

Ideally, the 199th Brigade Commanding General (CG) should get involved at this stage by giving the Comptroller the guidance for decrementing each program/reportable account. In other words, "the determination of the decremented level is paramount because it is a reflection of the CG's priorities."[56] This procedure would normally be done by interpreting the CG's guidance/policies on training/other programs, and making recommendations. The Senior Program Budget Advisory Committee (PBAC) could also be involved here in discussing/giving preliminary approval to the decrementing logic before making a recommendation to the CG.[57]

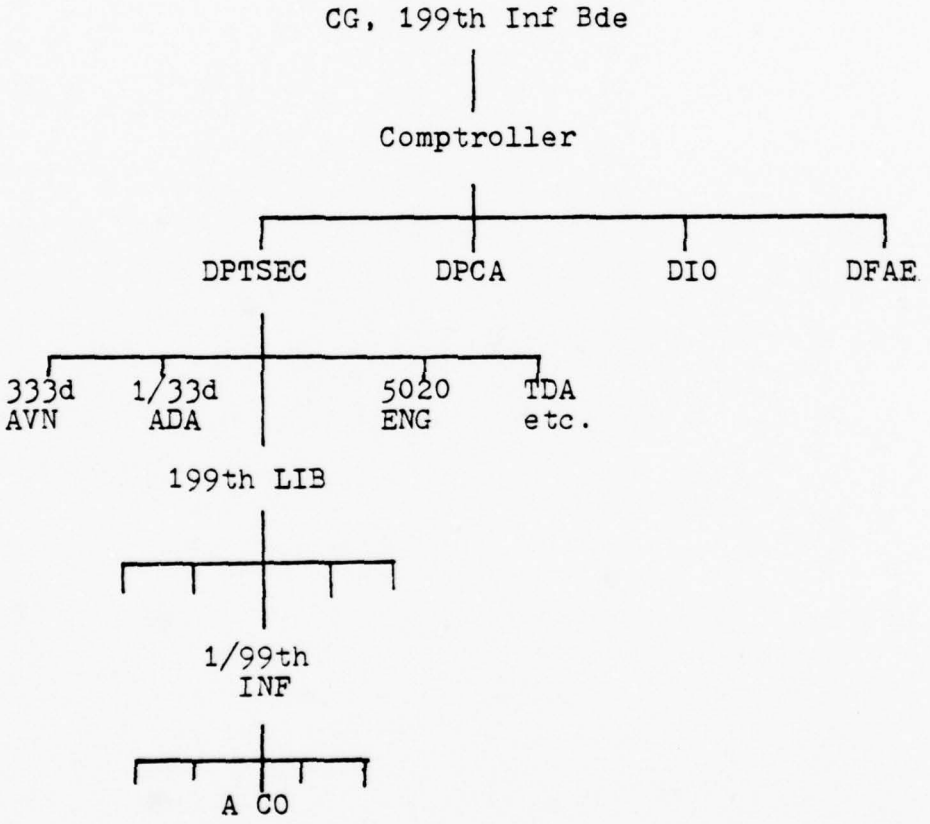
b. Step 2: The basic level funding guidance and subprogram decrementing percentages are broken out to each program director.

In this case the DPTSEC is the P2 program director. For purposes of illustration a figure of $14M for base P2 mission funds and a 90% decrement are used. Only the program year (FY 80) is addressed, although the methodology can be applied similarly to the budget year (FY 79). The fact that the 90% decrement percent is above the possible 80% benchmark, emphasizes that the 199th CG places a relatively high priority on mission support and training (the main outcome of P2 mission funds). In turn, his priority logically relates to the 199th missions listed earlier in this chapter.

At this point, the dollar guidance is still in AMS format where decision units are identified but not related to decision issues. Figure 11 portrays this funds flow for P2 mission funds, highlighting those decision units in the unconstrained training program cycle and in the description in this section.

FIGURE 11

FUNDS FLOW NETWORK



c. Step 3: Segregate the basic guidance by decision unit and issue; decrement according to the logic developed in steps 1 and 2.

(1) An Overview. This step requires that the P2 mission accounts be split out according to applicable

issues. To do this, the DPTSEC must work jointly with each of the decision units in an issue building process. Each decision unit has previously identified its missions/goals and objectives in developing their unconstrained training program/budget. These programs are already tied to the training events felt necessary to accomplish the objectives of each of the three levels of performance. They have also been costed by Element of Expense (EOE). Now the task is to link them to issues.

(2) Higher vs Lower Level Constraints at the Basic Level. Prior to issue building, the basic budget guidance used should be examined. In this hypothetical case, the DPTSEC allocates $4.5M of its $14M P2 funds total to the 199th LIB on an Activity Resource Agreement. Although this basic level is presently determined from historical budget data, it should be compared to the basic level determined during the unconstrained planning cycle by the 199th LIB. Recall the methodology used for deriving the latter was:

	Costs	Method
Aggregated for each of the Companies & Battalions in the 199th LIB	Direct Training	TMCS w/convention
	Indirect Training	TMCS/manual combination
	Garrison Costs	Manual
	Total at Basic Level	

These separately derived figures, one by historical, top-down allocation and the other by bottom-up prioritization, may be widely divergent. Even so, the DPTSEC and CG will have gained an insight as to what resources

the 199th LIB commander and his subordinate commanders consider necessary to be at the basic performance level. If the 199th LIB's desired level greatly exceeds the historical guidance then the CG has the following options:

1. Consider the program inflated and accept the original guidance.

2. Direct inter-program transfers, to increase the LIB's basic level.

3. Request increased basic guidance from the MACOM.

4. Combine options 2 and 3.

Hopefully, the TMCS aided, unconstrained planning cycle could, over time, help to justify the third alternative. This is especially true if reliable, valid measures of effectiveness can be used to validate this ZBB-based program as necessary for basic performance. (Discussed in Chapter VII).

(3) Role of the 199th Light Infantry Brigade (LIB).

(a) Issue Building. In the short run, the 199th LIB must take the $4.5M basic guidance as a total constraint and break it down by EOE and issues. Firstly, comes the summing and subtracting out of all garrison (fixed) costs, and indirect training costs estimates from the total allocation. These costs must be manually distributed across EOE's.

Next, the remaining dollars must be allocated to those EOE's costed by TMCS and entered as

constraints to the Brigade and Battalion Decision model programs. Given that the adjustments recommended in Chapter 5 are made, the impacts of unfinanced program requirements will be readily seen in the availability/shortages of funds at Brigade level and the training which can/cannot be conducted at the Battalion decision unit level.

The interactive capabilities of TMCS will then allow the Brigade and Battalion commanders to redistribure resources where necessary in order to:

1. Balance the training program
2. Fund priority training programs
3. Minimize the impact of budget reductions
4. Optimize the constrained training program
5. Enhance the long-range planning capabilities of the commander and his staffs
6. Provide a means of program evaluation and control.

The revised decision model program outputs can then be used as inputs, along with indirect training and garrison costs to fill in a matrix similar to the one shown in Table 10. The training events of the optimized, constrained program must then be related to one of the three issues used in this example. The total basic level for each issue is then determined by aggregating the EOEs making up each event. The events pertaining to a specific issue are then summed to determine the total basic level for the issue.

(b) Decrementing Process. At first glance, getting the required total P2 decrement to 90% of the basic

TABLE 10

BRIGADE Issue Building Package

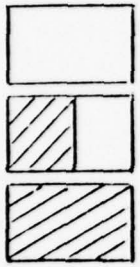
Basic Dollar Guidance FY 80 $4.5 M

AMS: 202185.1
UNIT: 199th LIB

Elements of Expense (000)

ISSUES/#	PERS COMP 1100	PERS BEN 1200	TRAVEL 2100	TRANSP OF THINGS 2200	RENTS 2300	OTHER SRVCS 2500	SUPPLY SPARES 2610	AVGAS 2620	MOGAS 264M	DIESEL 2640D	MED SUPPLIES 2660	AVSPARES 2670	EQUIP 3100	TOTAL 100%	DECREMENTED %	DECREMENTED AMOUNT
Special Training (BCT) #1	10.0	20.0	30		40.0	2810	520		50	20				3500	87	3050
OFF POST TRAINING #2			1				61		6	2	1			72	100	72
ON POST TRAINING #3			19				632		145	80	52			928	100	928
											Total P_2 Mission			4500	90%	4050

EOE KEY



General Behavior	Category	How Determined
Fixed	Garrison Operations	Manual/Historical
Semi-Variable	Garrison and Indirect Training	" / "
Vairable	Direct Training	TMCS

level simply requires multiplying each EOE by 90% and summing them. However this logic ignores cost-volume behavior, and assumes equal priority between issues. The task facing the Brigade Commander's staff is: given a mandatory total decrement of 90% ($4.05M), which issues should be decremented and by how much? To do this requires not a straight line application of 90% across the board but rather the identification of "least-pain" increments which can be cut.

Prior to looking for increments, all fixed costs, which by definition are difficult if not impossible to decrement, must be identified as remaining constant. In this example, $70k of fixed costs exist under the Special Training (BCT) issue. Next, using the TMCS (direct training costs) and manual (indirect training) data generated earlier, the training events making up each issue at the basic level are examined to determine increments, their priorities and costs.

To illustrate, the following information is extracted from the TMCS optimized Battalion Decision Models, and manual, indirect training cost models:

Issues	Training Events	Priority	*TMCS	*Manual	Total Costs
#3	1 Bn ARTEP	9	$30,000	$1,250	$31,250
"	2 Bn ARTEP	9	"	"	"
"	3 Bn ARTEP	9	"	"	"
#2	1 Bn CPX	7.5	250	-	250
"	2 Bn CPX	7.5	"	-	"
"	3 Bn CPX	7.5	"	-	"
"	1 Bn FTX	8	18,000	750	18,750
"	2 Bn FTX	8	"	"	"
"	3 Bn FTX	8	"	"	"
#1	1 BCT Cycle	7	147,500	710,000	857,500
"	2 BCT Cycle	7	"	"	"
"	3 BCT Cycle	7	"	"	"
"	4 BCT Cycle	7	"	"	"

*Although not shown - these are broken down by EOE

Each of these events can be considered an "increment". Starting with the increment with the lowest rank, the BCT cycle, the 199th can easily meet their total decrement requirement of $450,000 by eliminating or reducing one of these cycles. In our example, the Brigade Commander decides to do this based on the judgement that this alternative has the least impact on his internal training program. Although not displayed by EOE, the resulting decrementing figures are at the far right of the matrix at Table 10.

At this stage on the ZBB/COBE formulation process, the authors see little, if any further uses for TMCS output. It can, however, aid in the budget execution phase to be discussed later in this chapter.

(4) DPTSEC Issue Building/Decrementing. Each of the activity directors under the DPTSEC goes thru a process similar to the one just described. The DPTSEC then must aggregate all of the inputs into their own issue building packages. A matrix must be constructed for each issue similar to this example:

Issue: Special Training Base Dollar Guidance: FY80 $3.5M
Description: Airlift and Support of Battalion Combat Training (BCT)

	EOE (000)						
Units/Prog Ele	1100	1200	2100 Etc.....	3100	Total	Decrement	%
199th/202185.1	10	20	30 None, No Allowance Given		3500	3050	87
			Total P2 Mission		3500	*2652.5	75

If each decision unit has followed the 90% total decrement guidance for P2 funds the total of all of their

decrements by issue will be .90 of $14M or $12.6M. At this point the DPTSEC must analyze the decremented figures for each issue to insure that the total P2 mission program is properly balanced. For the purpose of continuing our example, it was decided that one BCT cycle could be decremented at a total reduction of $857,500 in variable costs. Since the LIB only decrements $450,000 of this amount, it frees up $407,500 for reprogramming/adjusting other issues where the funds are deemed to be needed more. *Subtracting the $407.5k from $3.05M leaves a total dollar decrement of $2.6425M for this issue or a 75% decrement.

(5) Installation Issue Building/Decrementing. A similar process is carried out by each Program Director and the appropriate decision units and related funds under their responsibility.

The results of the aggregate decrementing process must result in a total OMA decremented percent of 80% at installation level. Based on the original decrementing logic, an overall program balance which would be executable (if the decremented level was actually approved) should result. The following example serves to illustrate this concept.

OMA APPROPRIATION Subprogram	Basic Level Dollars	x	Decremented Percent	=	Decremented Dollars
P2 Mission	$14.0 M		90%		$12.6 M
P2 Base Operations	42.0		84%		34.0
P3 Other Activities	4.3		90%		3.5
P7 Supply & Maint	3.7		54%		1.8
P8 Training, Medical	5.3		83%		4.1
P8 Other	2.5		65%		1.4
P9 Admin	2.5		90%		2.1
P10 Support of other Nations	.7		80%		.5
OMA TOTAL	$75.0 M		80%		$60.0 M

d. Step 4: Increments will be Built Above the Decremented Level for Each Issue and Related Accounts

(1) Complexities of Issues Crossing Sub-Program/Key Account/Responsibility Lines. Now that the decremented levels have been established for each issue by program element/reportable account, the foundation has been laid for building the installation budget. This is done by incrementing up from the decremented level. Here is where complications concerning the interrelationships between various subprograms and accounts within an issue come into play.

Before the increments can be built, the Comptroller must "crosswalk" or relate the costs of issues, as applicable, to multiple directorates, program elements and/or key accounts. Continuing to use the example of the Special Training (BCT) issue, the Comptroller determines

NOTE: The decremented level for each sub-program/reportable account is entered on an Issue Detail (Schedule 50b - see Annex F) which breaks the issue down by program element/key account, EOE, decremented level and financed level.

that certain costs related to Base Operations - Z accounts (also OMA funds) are incurred in support of this issue as shown.

Issue: Special Training (BCT Support)

Program/Accounts	Program Director/ Responsibility Cntr	Basic Amount
P2 mission	DPTSEC	$3.5M (includes
E-laundry & drycleaning	DIO	20K .07 fixed)
F-food service	"	100K
G3- recreation services	DPCA	30K
L-minor construction	DFAE	20K
		$3.67M Total Base

(2) Building Increments. Like the $3.5M, each of these other accounts had to be broken out into increments in support of each BCT cycle, their cost behavior determined and related to EOEs. For purposes of our example, these are considered expenses which directly vary with the 4 BCT cycles in the Bde's program. They were derived by cost estimating relationships based on historical data. For example, laundry and drycleaning was derived by the formula: X Men/Cycle x $Y/Man x 4 Cycles. Thus the total variable costs of each BCT cycle/increment are:

$857,500	P2 mission	$\frac{170,000}{4}$
$ 42,500	P2 base opns	
$900,000	Total per increment	

It has been further determined that $2.6425M was the decremented level for 3 BCT cycles. Adding in the $42.5k/cycle (from other programs) x 3 = $.1275M, a total decremented level for this issue is $2.770M. These figures are then displayed in a manner similar to (see example - Schedule 50b, Annex F):

EOE	Decremented Level	Increments 1	2	3
1100	-	-	-	-
1200	-	-	-	-
2100	-	-	-	-
2300	-	-	-	-
2500	-	-	-	-
2610	-	-	-	-
264M	-	-	-	-
2640D	-	-	-	-
Total	2.770	3.67	4.57	5.47

Thus increment 1 represents the basic level while increment 2 and up shows the enhanced level. This example concludes with 3 increments which represent 6 BCT cycles, the most that the DPTSEC/199th LIB commander feel could be feasibly supported in one year. A narrative to support this process is entered on schedule 50C (see example, Annex F).

e. Step 5: The Issues and Increments Will be Ranked in Order of Priority

(1) General. Even though the decremented level is not prioritized on the Ranking Schedule submitted to FORSCOM (the total decremented level for an appropriation is entered as a lump sum) it is still a necessity to do this at the lower level. This process starts at the MAD level where a priority list is prepared for each applicable issue.

(2) Junior Program Budget Advisory Committee (PBAC). A senior budget analyst from each Directorate and the Program Budget Officer (PBO) representing the Comptroller then convene a Junior PBAC conference to rank each issue. Using a modified Delphi technique, each member nominates the

highest priority, discussion follows as to the reasons for it and a vote is taken. When a majority vote is received on an issue, the appropriate priority, dollar total and cumulative total is recorded by the PBO, who does not vote unless to break a tie. If an impasse is reached, the PBO can also call for more discussion and another vote.

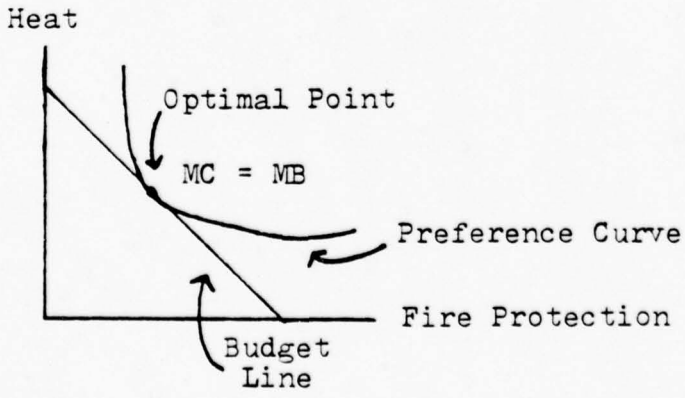
It is important to realize that, after the first few rounds, it is entirely possible that PBAC members will consider an increment of one issue as a higher priority then the decremented level of another. The result could be that an increment of one issue is financed and a decrement of another is unfinanced. The only constraint is that total dollar amount cannot exceed the decremented level:

$75M	(basic level for OMA Issues)
x .90	(decrement percent)
$67.5M	(decremented level)

ISSUES	TOTAL $ BY EOEs	INCREMENTS	RANK	
3	-		1	
1	-		2	Everything above here is at
2	-		3	the decremented level even
4	-		4	though increment 1 of issue 1
1	-	1	5	is a higher priority than the
6	-		6	decremented level of issue 5.
	$67.5 M	Decremented Level		
5	-		7	
3	-	1	8	
2	-	1	9	
4	-	1	10	Financed Level
6	-	1	11	
1	-	2	12	
	$75.0 M	Basic Level		

ISSUES	TOTAL $ BY EOEs	INCREMENTS	RANK	
3	-	2	13	
1	-	3	14	Enhanced level, generally
5	-	1	15	won't realistically exceed
2	-	2	16	DA guidance of 103-105% of
2	-	3	17	Basic Level; Unfinanced
4	-	2	18	Requirements Level.
	$78.8S			

(3) Senior PBAC. The straw-man recommendations set up by the Junior PBAC are then briefed to the Senior PBAC consisting of the Directors of each MAD and chaired by the Deputy Commander/Chief of Staff who is advised by the Comptroller. They discuss the critical ranking decisions which are in the margin around the Basic (financed) level while fine tuning the ranking where necessary. In the interest of getting the best return for the given dollars, the Chief of Staff and Comptroller will be especially cautious to balance the overall program. For example, given a choice between utilities and fire protection, some balance is preferred over heating the billets to 72^{o} everyday and inadequate fire protection, as shown below.



Gamesmanship is also watched for. The most obvious game is to prioritize a critical issue low, knowing that a reviewer will be compelled to fund it.

The authors are in complete agreement with one Comptroller, commenting on the ranking phase, who stated:[58]

> "There was much soul-searching during this phase, but it forced decision makers to fully understand their programs and to fully examine the resources in support of them. The ranking process is perhaps the most powerful aspect of ZBB."

f. Step 6: Final Basic (Financed) Level by Account and Issue is Determined.

The make-up of the Basic (Financed) Budget cannot be finanlized until the ranking scheme has been approved by the CG (see example Schedule 51, Annex F). If the CG sees something in the unfinanced arena that he wants financed, the PBAC will look for a comparable funded dollar program to trade-off. Once this is completed the ZBB schedules (Schedules 50a-c, 51 - see Annex F) and the more traditional budget schedules can be completed to include an automated budget submission.

F. BUDGET/TRAINING EXECUTION AND REVIEW PHASE

1. GENERAL

While the COBE is being formulated, both budget and training execution is taking place based on the results of the previous years COB. Beginning with the new Fiscal Year,

the actual appropriations are distributed through Funding Authorization Documents (FADs) which are in response to the COBE submission. The FAD issued to the installation by its MACOM will include the obligational authority for the entire annual program plus allotment ceilings by sub-program. The later gives phasing guidance by quarter which cannot be exceeded. For example, not more than 20% of the annual program may be expended in the last two months of the year.

The installation Comptroller in turn breaks down the FAD to the Program Directors based on their COBE submissions. The PBAC approves the adjusted COBE and, after approval of the CG it becomes their Operating Program (OPAR) for the current year. The Program Directors then give their decision units quarterly allotments via a Unit Resource Agreement. These activities can generally reprogram within accounts as long as these ceilings are not exceeded.

2. Installation Accounting

The Finance and Accounting Officer (F&AO), under the direct supervision of the Comptroller, is responsible for the overall supervision, management, and control of the financial resources. Accomplishment of this requires close coordination with the fund managers representing the Program Directors and Commanders. In particular, compliance with AR 37-20, the Army's implementing regulation for Revised Statutes (RS) 3679, the Anti-deficiency Act, must be insured.

As training and other operations are actually conducted, the actual funds committed are reflected in obligations

processed by CAMUS and in issues or expenditures and disbursements processed by STANFINS. Applicable CAMUS print-outs are made available to fund managers at each level. STANFINS also produces a variety of daily, weekly and monthly reports to include Detail Cost Reports, Obligations by Object Class (EOC) etc. These reports, together with TMCS estimates of training program costs, must be reconciled at least monthly. Such reconcilations will aid managers to:

a. Identify deviations in actual costs to budgeted/programmed costs.

b. Determine the reasons/cuases for such variances.

c. Point out potential problems in the supply, accounting and/or TMCS systems.

d. Resolve the need for and initiate timely corrective actions felt necessary to restore effective control.

e. Meet budget review and analysis goals of efficient and effective use of resources.

3. Reporting Requirements/Feedback

Although different MACOMs will have slightly varying requirements, most require a quarterly Status of Operating Resources Report (RCN-AFCO-2) which provides a summary (for each appropriations' account) of the next three months programmed expenditures and the actual obligations of the preceding three months. The purposes of such reports are to:[58]

a. Provide the installation a means for reviewing and analyzing its actual performance as compared with programmed performance.

b. Provide an opportunity to present to the MACOM any requested program changes due to reassessed plans, priorities, and requirements in light of unforeseen developments since the COBE submission

The budget execution, and review (BER) alone will not insure effective utilization of resources. As will be brought out in the next chapter, incisive evaluation of performance as well as costs must be accomplished to complete the feedback loop. In the words of another author,[59]

> "Optimizing the power of ZBB at the macro-level... will occur only by developing an effective reporting system that provides both cost and performance data. Such a system will require strong dedication to the development of meaningful performance measures, a feat which has not yet been widely accomplished. Without such measures any ex-post facto analysis will be impossible."

G. FUTURE BUDGET DEVELOPMENTS/TRENDS

The President's 1979 budget announced a major effort to stretch the time horizon of federal budgeting to a multi-year framework. The planned vehicle to accomplish this is the Program and Budget Estimate (PABE) which will replace the CBE portion of the COBE. The letter at Annex G explains some of the details of changes this new procedure will bring about, especially in the OMA P2 mission area.

One author commented, quite interestingly, that this attempt at extending the budget to the outyears "offer the most telling indication of ZBB's limitations...for budget

watchers who have seen a parade of innovations and fashions over the past 30 years, the road from ZBB might lead back to PPB."[60]

VII. PROGRAM EVALUATION/MEASURES OF EFFECTIVENESS

A. INTRODUCTION

1. As was brought out in Chapters III and IV, two major tasks inherent in both PPB and ZBB are:

a. Identification of goals and objectives

b. Analysis of outputs of given programs (or program alternatives) in terms of goal/objectives accomplishment; e.g., program evaluation.

With Chapter V as the technical foundation, Chapter VI demonstrated how TMCS may help the commander in the Zero-Base Budgeting process. Thus, conceptually, TMCS will provide input on which PPB^{ZB}S output can be built and justified. The process does not end here, however. The outcome of these budgeted Program 2 mission funds must now be measured in terms of how effective the program was in meeting the objectives identified.

2. The purpose of this chapter is to reveal the complexities of program evaluation and current efforts being made towards evaluating training programs through measures of effectiveness.

> "More than any other part of the PPB system, program evaluation can be viewed as the function that closes the feedback loop in the program development process of discerning and articulating a need, developing a program to alleviate that need, and implementing the program. Program evaluation measures how well the program has satisfied the need to which it was addressed."[61]

The general goal/objective hierarchy will be outlined followed by discussions of the training environment in which they are hopefully, achieved. General training cost/effectiveness concepts will then be outlined followed by the highlights of proxy measures of effectiveness. Conclusions will be drawn at the end of each section. Finally, recommendations pertinent to the $PPB^{ZB}S$ program evaluation concept will be presented. (See Note 1).

B. GOALS/OBJECTIVES

Since the "benefit in a cost/benefit" analysis is related to an organization's goals (and its outcome), there is no point in attempting such an analysis unless there is some measure of agreement on what the goals are.[62] Failure to clarify goals (the "what to do"), obviously makes it difficult to evaluate alternatives and formulate programs to achieve these goals (the "how to do") and to measure the level of this achievement.

At the statutory level, the Army has the following very broad goal:

> "It is the intent of Congress to provide an Army that is capable...with the other Armed

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NOTE 1: It should be understood that the authors are by no means unaware of the complexity, high level attention and tremendous resources presently being applied to help solve the problems addressed in this chapter. We are not proposing a panacea or "school solution" to this highly technical and politically sensitive area. We simply want to advise the reader(s) that we are not looking at the budgeting process in a void.

> Forces, of preserving the peace and security... of the United States;...supporting the national policies; implementing the national objectives, ...and overcoming any nations responsible for aggressive acts that imperil the peace and security of the United States. (Title 10, Sec. 3062, U.S. Code)"

Within the Department of Defense, the Army has these ongoing, more specific goals:[63]

1. To determine what forces are required to support the political objectives of the United States.

2. To procure and support these forces as economically as possible.

In that the present major defense-related political goal of our country is based on the premise of mutually assured destruction, these general goals are translated into goals similar to that stated by Secretary of Defense Brown in his Department of Defense Annual Report for FY 1980.[64]

> "It remains the case that our wellbeing as a nation and our character as a people depend on peace, justice, and order as well as military strength. To survive, to prosper, to perserve our traditions, we need political as well as military allies, trading partners, access to raw materials.....We must make every effort to settle the disputes and remove the tensions that could lead to conflict and wider international disorder. We should lose no opportunity to increase international stability and reduce military competition through equitable and verifiable arms control agreements."

At the Secretary/Chief of Staff of the Army level the goals as reflected in the FY 78-82 Army Program Objective Memorandum (POM) become:[65]

.....improvement of the Army's war fighting capabilities through:

....providing the necessary leadership and training...upgrading unit readiness and force deployability. (Most likely scenarios are also developed).

As defined in Army Regulation 220-1, Unit Status Reporting, dated 15 June 1978, "the Army's readiness objective is to provide units capable of performing their Table of Organization and Equipment (TOE) missions in support of operational requirements." It is at this point that lower level (MACOM, DIV, BDE, BN) objectives must be formulated. These objectives generally are expressed in the form of training objectives specified through various written and oral communications such as Training and Readiness Regulations, Training Guidance Circulars and Letters, policy statements and other directives of the chain-of-command.

Examples of the type of training objectives involved are shown at Annex H (FORSCOM Circular 350-8, FORSCOM Training Readiness Program and 7th Infantry Division and Fort Ord Circular 350-19, Training Guidance).

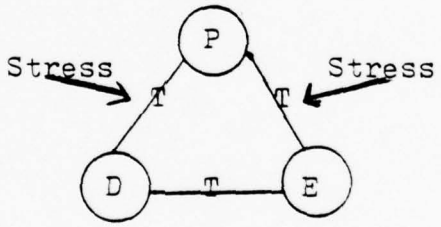
These many training objectives have often been summed up as "those things which a unit must be able to do in order to win the first battle of the next war." The scenario's most often emphasized are those of large scale conventional or limited nuclear warfare in European-like and/or desert terrain.

C. TRAINING ENVIRONMENT

1. Descriptive Model

A recently developed Combat Effectiveness Model sets the environment in which program evaluation must take place: "The combat effectiveness of a unit during the first few weeks of a war, can be considered a function of some variables combined during peacetime training. Four variables often considered to be in this function are: Doctrine, Personnel, Equipment, and Training, i.e,

CE = f(peacetime training) = f(D, P, E, T,...). The four variables can be viewed as being combined in a flexible triangle as shown below. The corners are the variables doctrine, personnel, and equipment. The material connecting the variables is training.



An optimum state of the triangle system will occur when it is not under stress; the effect of each variable is balanced. As stresses occur on any of the variables, the triangle is distorted. The system then seeks an optimum state and changes occur in the other variables. It can be seen that contractions, oscillations and breakdowns can happen. Thus, the quality of a unit's combat effectiveness will vary in

some manner as the variables are changes. If what causes stress on the variables can be controlled (or at least guided), then higher quality combat effectiveness can be achieved."[66]

2. Variables

The training variable itself is made up of many variables as illustrated in Chapter V by the TMCS inputs of commander selected training events, priorities and durations. Some of these variables may well be causes of stress on training in the Combat Effectiveness Model as follows:

a. Piecemeal proliferation of numerous equipment items over time.

b. Piecemeal proliferation of maintenance and training complexity.

c. Tighter money and personnel constraints.

d. Unguided codification of operation requirements.

d. Lack of standardized, management performance inspections of headquarters personnel.

e. Training analysts' preoccupation with identifying key training events.

We point this model out as what the authors feel is a realistic approach/reference to the training environment in today's Army; some knowledge about which the comptroller and other staff personnel concerned with budgeting should have in order to better understand the relationship between its output (training readiness) and inputs (costs). To

the extent that such a model could be formulated through regression/correlation and/or other techniques and used as an indicator of performance, it represents "ideal" areas for development of performance measures. However, the large degree of interdependence between these variables makes such a process extremely complex.

D. GENERAL TRAINING COST/EFFECTIVENESS CONCEPTS

As previously alluded, the determination of the methodology(s) for measuring the effectiveness of training, hence of defense, is a complex problem involving a great number of interdependent variables and much subjectivity. In the words of Hitch and McKean:[68]

> "There is no hope, of course, of measuring the ultimate 'worth' of defense. It is obviously impossible to put a generally valid price tag on the output. The gains from program increments cannot be compared in terms of a common denominator. But there is hope of describing the product meaningfully, and some ways of describing it are more meaningful than others."

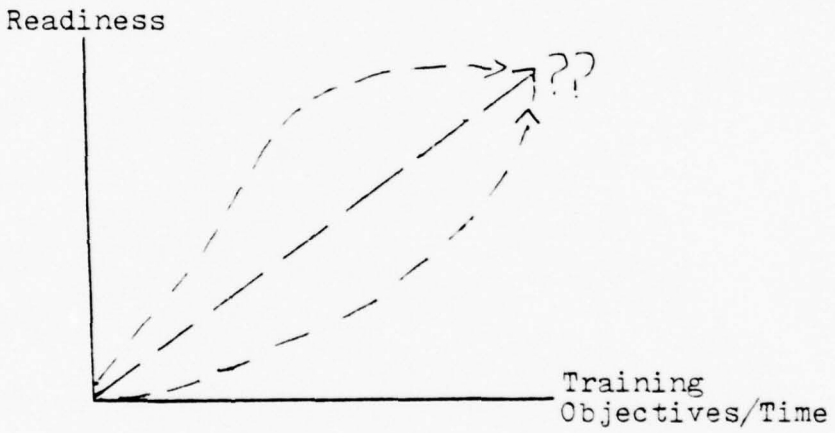
In this section, the authors will attempt to analyze some of the training cost/effectiveness concepts which appear to be prevalent within the Army.

One general notion of training cost/effectiveness is that, as more and more training objectives are accomplished (with the associated costs) and aggregated, the Army comes closer to meeting both its goals and those at higher levels. Generally it appears that most commanders <u>feel</u> that there is

a positive relationship between the accomplishment of training objectives and the readiness of their unit. Intuitively, it follows that the more the training, the more it will cost.

As illustrated by Figure 12, it is difficult to really know the shapes or rates of change of these relationships. Most believe that there is an ordered, sequential, yet repetitive, way in which the training objectives must be

FIGURE 12



accomplished with individual and small unit training as the basic building blocks upon which other training is based. However, as suggested by the Combat Effectiveness Model, the training environment is very dynamic and multidimensional; turnover requires refresher training, new and more complex equipment and weapons systems require new/updated training, combat training must be coordinated with combat support resources, resources are required for matters such as administration and maintenance support, etc.

As in any organization variables such as the background, personality, leadership/management style, values, preferences and personal assessments of the leaders at each level of command will also influence the emphasis placed on these training objectives and the associated level of effort required for task completion.

Many of these same variables are identified and analyzed in depth in the previously referenced Combat Effectiveness Model as causal to training stress and possible degraded effectiveness. The reason given for such a potentially damaging and non-goal congruent enviornment is that, when viewed synergistically, these variables will increase the time burden on the line unit and may lead to mismanagement of available resources.[69]

Indeed, there are other studies as well which question the intuitive assumption of a direct, positive, relationship between training objectives being accomplished and readiness levels. These notions are amplified in an Available Time Model[70,71] and a Readiness Perishability and Cost Model[72] summations of which appear in Annex I.

The implications of these concepts and studies for the financial manager are twofold. Firstly, it will be extremely difficult, after identifying and costing training objectives and relating them to ZBB issues, to accurately measure their impact on program goals by any one means. Secondly, at some point, inflation adjusted increases in funds for training can no longer be supported or realistically justified, unless the training enviornment is changed.

However, until the inferences of these examinations can be proven, budgeteers are forced by reality to accept the prevailing view of more is better and understand the need for and importance of surrogate or proxy measures of effectiveness in the PPB^{ZB}S system. To the extent that such output measures demonstrate a favorable cost/effectiveness ratio, they will be useful to allocate funds <u>within</u> the DOA as well as justify the Army's budget to DOD and Congress.

That is, the same effectiveness proxies (once developed and validated) used at authorization and appropriation hearings will become comparative statistics both between and within MACOMS. The Installation Commander, Comptroller and all other financial managers must understand what is required in terms of performance to appear favorable. They must also be able to justify and control budgets by these measures. Failure to do so will most certainly result in lower budget allocations.

E. OUTPUT MEASURES - CURRENT AND PROJECTED EFFECTIVENESS PROXIES

Although some of the training objectives can be directly measured (such as quantitative results of weapons qualifications/live fire exercises) and others can be qualitatively evaluated (such as the results of Army Training and Evaluation Programs (ARTEPs) and Skill Qualification Tests (SQTs), the spectre of aggregating their results for budget management and goal assessment still looms in the foreground.

Conceptually, the most feasible way of measuring a non-measurable goal (such as defense by deterrance) is to find certain results (performance-oriented) and/or process (workload) surrogates/proxies which can be measured and costed showing some correlation to the outputs desired. The Air Force and Navy have attempted to do this by using Flying Hours and Steaming Days, respectively.

In a letter to the Commander, U.S. Army Forces Command, dated 10 March 1978, the Deputy Cheif of Staff for Operations and Plans, Leuitenant General E. C. Meyer wrote: "to prepare persuasive and convincing justification of our budget needs, we must relate resources to readiness. Of all the tasks facing us, this is perhaps the most difficult in the budget process."[73]

Given the significance of this challenge, and the critical importance of understanding both the usefulness and limitations of proxies, Army operations and financial management communities are developing/studying certain models and/or methodologies which they hope will help measure outcomes regardless of the level of command being considered. The following ten major approaches to developing proxy measurements are discussed:

1. Battalion Field Training Days (BFTD)
2. Readiness Reporting System
3. Organizational Effectiveness Models
4. Army Research Institute Realtrain Model
5. Army Training and Evaluation Programs (ARTEP)

6. Multiple Integrated Laser Engagement System (MILES)

7. National Training Center (NTC) Concept

8. Human Resources Research Organization (HumRRO)

9. General Research Corporation

10. Army Training Study (ARTS)

1. Battalion Field Training Days (BFTD)

a. Introduction

In an attempt to better justify and defend funds for training (OMA-P2 mission), the DOA instituted the BFTD concept within the FY 79/80 COBE. One BFTD is defined as:

> "Eight to 24 hours of mission-related train- conducted by a MTOE battalion with sufficient personnel and equipment to accomplish its training task outside its assigned billeting, administrative and logistical areas"...for durations of less than 8 but more than 24 hours, the following computations apply.[74]

Duration of Battalion Field Training in Hours	*Battalion Field Training Days Reported
0-3	0
4-7	1/2
8-24	1
25-31	1-1/2
32-48	2
49-55	2-1/2
56-72	3

*Company and Platoon field training is recorded proportionately to the number of like COS in a battalion/platoons in a company.

Once a minimum number of BFTDs needed to attain and retain current proficiency was determined and costed, by

type of unit, this workload factor would hopefully provide a standard proxy measure relating monetary resources to training readiness goals (inputs to outcomes).

This process is accomplished in the following general manner. For those units without TMCS, a Division Master Training Program is manually developed (after receiving inputs by all subordinate combat, combat support and combat service support units). It is based on the training necessary to keep the units, and hence the Divisions, at the current level of training proficiency. As part of this program development, BFTDs computation by subordinate units.

The applicable installation budget management staff (DPT/DPTSEC) then computes the costs of this training by elements of expense, using basic level funding constraints and historical cost/training duration data and links these to the BFTDs.

From the TMCS description in Chapter V, recall that this manual process of costing and computing BFTDs funded within the basic or previous years budget level will be automatically accomplished by TMCS as an output of the Battalion/Division Decision Model as will the cost per BFTD. Another feature proported by the developers of TMCS is the automatic calculation of the percent contribution to training readiness achieved by conducting the training which the constraints allow. However, this is based on the assumption that 100% of training readiness is achieved by performing all training events regardless of constraints.

b. BFTD Problem Areas

Due to its ongoing use and relative importance, the BFTD concept was analyzed in detail revealing four major, interrelated problem areas which could impact on its validity as an output measure and thus its use in the budgeting process:

(1) Variations in BFTD standards to actual

(2) Arbitrariness in BFTD computations

(3) Problems in costing the BFTD

(4) Zero-Base Budgeting with the BFTD

Although the following discussion only highlights the key points in each area, a more comprehensive analysis of each can be found in Annex J.

(1) Variations in BFTD Standards to Actual. As illustrated in Table 11, variations between the DOA developed standard and actual reported BFTD (for like units) exist. In some cases they are wide and in others not.

The cognizance of the Army to a potential problem with the BFTD standard is reflected in the following segment of a DOA letter:[75]

> "Considerable variations in BFTD requirements (submitted in the FY 79 COBE) within and between commands were noticed. These variations were attributed primarily to the influence of different missions and training environments faced by units, and the effort was recognized as the first essential step in qualifying the amount of training we need. While refining these data (establish amount needed in FY 80 to attain and sustain

TABLE 11

STANDARD VS ACTUAL BFTD REQUIREMENTS[76,77]
(See Notes 1-2)

TYPE UNIT	STANDARD	ACTUAL			TYPE UNIT	STANDARD	ACTUAL		
		CARSON	RICHARDSON	ORD			CARSON	RICHARDSON	ORD
ARMOR	90	82	-	-	FA	90	41	33	114
AIR CAV	75	81	70	-	ADA	75	74	-	64
ARMD CAV	95	81	-	-	ENGR	85	69	66	57
INF	85	-	91	110	SIG	80	75	-	35
MECH	90	77	-	-	AVN	70	-	39	24

NOTE 1: Analysis of FY 79 & 80 COBE submits indicate *unresolved problem areas*. Standard BFTD requirements may require revision due to local factors such as mandated readiness levels, projected turbulence, introduction of new equipment and deficiencies in the training environment. Deviations from standard requirements indicated above should be explained as a footnote on Schedule 40. It is anticipated that this methodology will be improved and will produce data for development of the FY 81 budget.[76]

NOTE 2: The BFTD measurement only applies to combat and combat support battalions. Although service support units train, they have many other proxy workload or process measurements of both efficiency and effectiveness which are directly related to the nature of their work; i.e., paperwork processed, complaint rates, stock outs, etc.

> proficiency in ARTEP and Soldiers Manuals with the units organic personnel and equipment) we must devote out efforts toward determining the costs of required training..."

(2) Arbitrariness in BFTD Computations. Due to the broad range of 8-24 hours, the BFTD computation is subject to manipulations by those wishing to appear more efficient with the same end effectiveness. For example, consider the case of two like units who conduct 72 hours of similar field training and are judged to be equally proficient. The equitable situation would be for both units to input TMCS (or manually compute) in terms of the total 72 hours duration for which 3 BFTDs would be charged and costed. But suppose unit A inputs its data in terms of 12 hour blocks, while B enters it in a 72 hour block. Unit A will then appear to have completed 6 BFTDs to B's 3. If the units are like units, their field training costs would be close, and therefore, A will look much more efficient having completed 6 BFTDs for the same cost as B's 3.

(3) Problems of Costing the BFTD. The third possible problem area concerns the elements of expense which make up the costs of the BFTD as shown at Annex K. The authors agree that direct field training costs are made up of those items listed. However, as discussed in Chapter 5, certain indirect or semi-variable training costs will exist which are more related to field training than garrison operations. Such costs will not be accounted for with the present cost factors and TMCS and hence understated.

(4) Budgeting and Evaluating with the BFTD. The last problem area deals with possible use of BFTDs in the Zero-base budgeting and program evaluation process. From the interviews conducted there appears to be concern by some budgeters that the BFTD may be abused as a tool for justifying budget increases. It is felt that the trainers/ operations types will try to stack the deck in reporting higher BFTDs than are actually necessary to stay at the base level, which will eventually result in a higher standard. For example, at one post the average cost per mechanized infantry BFTD was determined to be $6,000 per day and the number of BFTDs required for FY 79 were set at 76 days. This resulted in an anticipated total annual cost of $456,000 for each mechanized infantry battalion. This total when compared to the average cost of operating a like unit in FY 78 ($299,000) represented an annual increase of $157,000 or 52%. Assuming no major mission changes this represents a substantial increase even after adjustments for inflation. The alternatives available to the installation commander in dealing with such an event were discussed in Chapter IV, e.g., re-evaluation of the training program, re-programming, and/or request more funds.

c. Conclusions about the BFTD

Although it may take some time yet for realistic, valid BFTD standards to be developed, the concept is probably here to stay and, at some future date may help to justify more training funds. As mentioned earlier, the budgeteer

who fails to realize, understand and apply such a potentially significant proxy measure to the ZBB process will be performing a dis-service to the Commander. The purpose of such measures is to help justify more, not less training funds and they will most likely be used in the evaluation/comparison mode.

2. Readiness Reporting System

The current Army system of reporting unit readiness is covered in AR 220-1, Unit Status Reporting, dated 15 June 1978, with applicable MACOM and local supplements. In an attempt to relate the readiness reporting system to the zero base budgeting process and BFTDs the instructions at Annex L were issued to each installation. Basically, units were required to describe the impact or "level of pain" for each increment (in which the amount of projected field training was changed) starting with the decremented level OMA, P2 mission issue area. The effect on Readiness Condition (REDCON) levels and BFTDs were required to be verbalized on Schedule 50c for each issue. Theoretically, these impacts could then be related to the issue costs.

While the results of this attempt to relate costs, BFTDs and the Readiness Reporting System were not too successful[78], the effort represents yet another recent area in the P2 mission funds justification search. As no direct link or reference to future attempts were made in the new PPBS procedures outlined at Annex G, it appears that this

augmentation measure has been dropped for the short run. Nevertheless, financial managers need to be aware of this concept in case it is resurrected. Other comments, potential actions and past studies pertinent to this area are at Appendix 1 to Annex L.

3. Three through Ten

As the next eight models/systems/studies concerned with effectiveness measures have not yet been directly linked with the budgeting process, they are discussed in detail in Annex M. It is urged that the financial manager review this material for possible future reference. The National Training Center Concept is particularly relevant as it incorporates or will use Realtrain, ARTEP, and MILES to evaluate Battalions in a simulated combat environment which is as close to real battle as possible. Once the criteria for evaluation are firmly set, it is planned that the test results will be directly related to the unit's training program and its costs. A correlation of costs to effectiveness can then be made and provide program evaluation feedback to the budgeting process. Although the exact methodologies, algorythms and procedures for tying the NTC results to budget actions is yet to be developed, the authors believe strongly that they eventually will be.

Additionally, the Army Training Study (ARTS) will be of significant importance. Through it, the training environment and, hence the training budget arena are very likely

to be changed. The ART's developed Battalion Training Model (BTM) may be the tool for greatly reducing many of the current stresses and their dysfunctional impacts on goals. When combined with a costing model such as TMCS, the result should be an even better system/tool for ZBB. Furthermore, PPBS and the entire resource allocation process could be improved for the Army. Again, the comptroller/financial manager must keep informed on these highly dynamic management assets.

F. AWARENESS OF NEED FOR EFFECTIVENESS PROXIES

Currently within the Army structure many major organizations and subordinate agencies are working in the area of developing training/combat effectiveness measurements such as:

1. TRADOC System Analysis Agency (TRASANA)
2. TRADOC Training Development Division (DCSOPS)
3. TRADOC Combat Experiment's Evaluation Command (CDEC)
4. TRADOC Combined Arms Center (CAC)
5. U.S. Army Europe (USAREUR) "Resources to Readiness Model 1"
6. Asst. Deputy Chief of Staff for Logistics (ARCSLOG) "OMNIBUS Model"
7. Asst. Deputy Chief of Staff for Operations (ADCSOPS) "Automated Budget Resource Management System"; "P2 Mission Model"

The fact that such high level resources are being devoted to the search for valid output measures emphasizes the

importance that the Army places in this area. Realizing that nothing short of real fighting will provide a true measure, effectiveness proxies are essential to the program evaluation phase of $PPB^{ZB}S$.

There appears to be considerable overlap in the features of many of the models being worked on by these various agencies. It further seems very possible that the strong points of some of them could fill in the gaps of others and vice-versa. Too many people appear to be approaching the problem from too many different perspectives. A pooling of resources could possibly help to identify the best, standard system for relating costs and readiness at a savings of manpower and other costs.

G. RECOMMENDATIONS (See Note)

1. Endorsing the recommendations of the Combat Effectiveness Model and ARTS methodology, the authors believe that the present training environment needs to be re-evaluated and changed:

   a. In order for cost/benefit analysis to work, training goals must be further clarified. Certain training events/frequencies (such as live fire exercises for infantry units) should be identified as absolutely essential (by type of unit), evaluation criteria developed, and locked in concrete as Army-wide standards. Further proliferation of "key-events" should be controlled or at least kept to a minimum.

NOTE: Recommendations pertinent to the proposed Battalion Activity Day (BAD) as a replacement for the Battalion Field Training Day (BFTD) are included at the end of Annex J (BFTD problem areas).

b. The resources needed to accomplish these objectives/events should be computed and weighed against all resource constraints, foremost of which is a reasonable total time assumption, and their feasibility determined. If within the feasible constraints, the remaining discretionary resources should be given to the local commanders.

c. Sensitivity analysis should then be conducted to assess the impact of resource changes on overall training effectiveness at the small unit level (Battalion and below) as justified by the results of several measures of effectiveness. This process should be a proration of top-down goal clarification/select event dictation; bottom-up detailed planning and program formulation; with ranking, controlling and feedback mechanisms occurring throughout the system.

2. Given that minimum training standards, resource requirements and evaluation criteria can be developed and linked to P2 mission issues, identify a standard range of days (BFTD) and costs necessary to meet them by type of unit.

Continue to test this concept as one of a number of multidimentional output measurements; but one which could be especially pertinent to cost/benefit analysis and zero-base budgeting. If further testing reveals that the BFTD is a good proxy, then it should be used to justify budget levels as long as the training environment allows the marginal benefits to exceed the marginal costs.

3. Continue to validate and add cost factors in further developing and refining of a range of costs per BFTD by type of unit. If the Costs functions developed are not linear, develop a series of cost curves (cost as dependent, BFTD as

independent variable) which can be incorporated into a handbook to provide commanders with "ballpark" figures for planning and control.

4. TRADOC should organize and direct a task force composed of operations, financial management and research personnel from such organizations as CAC, FORSCOM, USAREUR, ARI, DETC and DOA. The purpose of this team should be to study and attempt to integrate the many models designed for resources management and/or effectiveness measurement into a single system for training program formulation and evaluation. Such a system would also have to interface with PPB^{ZB}S and its tools.

5. The financial management communities must play an active role in the early stages of development and implementation of measures of training output. They must be able to interpret these measures, relate them to costs, the Army Management System program structure, issues/decision packages and the accounting systems.

Rational resource management decisions will require critical analysis of such measures and their impacts if a balanced budget is the desired result. Where proxies are deemed to be faulty, inflated and/or invalid ploys to increase training funds (P2 mission) at the expense of other programs, financial managers must be able to explain why they are not accepted. They also must be able to counter with more effecient and/or effective uses for the funds.

Comptrollers must also be able to play the inevitable comparability game. Once measures are adopted for general use, they will surely be used for program justification and evaluation not only at the DOA/DOD/Congressional level but within the DOA.

VIII. CONCLUSION

A. GENERAL

The preceding seven chapters have served as a multi-dimensional analysis of the budgeting process as it pertains to the United States Army. During the course of this study the authors have attempted to provide the novice financial manager/comptroller with an overview intended as an aid to function effectively within the current fiscal environment of the U.S. Army. As the following overview and concluding remarks are read, recall that specific, detailed conclusions and recommendations were made at the end of the preceding chapters.

B. OVERVIEW OF AREAS COVERED

In order to provide such a critical perspective, the authors have presented the reader with summarized information on various subjects of budgetary concern to include:

1. A macro view of the Federal Budget System (Chapter II).
2. The emergence and utilization of the Planning, Programming, Budgeting System (PPBS) within the Department of Defense/Department of the Army (Chapter III).
3. The evolution and implementation of Zero Base Budgeting (ZBB) within the public sector (Chapter IV).
4. The introduction and discussion of the Training Management Control System (TMCS) as a new budget/funds management tool that can be utilized to justify OMA, P2 mission funding (Chapter V).

5. The development of a methodology, applying the interface of TMCS and ZBB, to be utilized in the budget formulation, execution, and review phases of the budgeting process for OMA, P2 mission funds (Chapter VI).

6. A discussion of the cruciality of budgetary performance feedbacks to include potential effectiveness measures which might be utilized to relate certain levels of OMA funding to specific levels of training/combat readiness (Chapter VII).

C. KEY CONCLUSIONS/RECOMMENDATIONS

While the authors drew conclusions and made recommendations throughout the course of this thesis report, the remainder of this particular chapter will briefly highlight the key aspects of each of the preceding chapters to aid the reader in grasping the critical information and concepts presented.

1. The Federal Budget System

Federal budgeting in general sets forth specific actions proposed and the estimated cost of their implementation to accomplish the mission. The system utilized to accomplish the budgeting function for the Federal government is both complex and ever-changing but the potential Army financial manager/comptroller must possess a working knowledge of the entire budget spectrum.

To provide the reader with the necessary perspective of the Federal Budget System, the authors conducted a macro analysis from which the following key findings emerged:

a. Based on both a historical and current perspective, the Federal Budget System is constantly in an evolutionary state with respect to procedures and methodology associated with the budgetary process.

b. The Congressional Committee System and specifically the standing committees represent a powerful force within the budgetary process particularly in fiscal policy making and priority setting.

c. The President, along with various staff members, are currently taking a central role in the development and presentation of the budget. Specifically, the Office of Management and Budget (OMB) has evolved into a major player in the budgetary process. The agency-by-agency examination by OMB of proposed programs and ongoing activities are critical aspects in the determination of both the size of the Federal budget as well as the actual funding levels for each specific agency.

Therefore, the Federal Budget System represents the critical budgetary arena for the Department of Defense/ Department of the Army. The Army financial manager/comptroller must be aware of this budgetary environment and understand that the manner in which defense needs fare among all other competing resource claims eventually results from the priorities developed through the interaction of executive-branch agencies, the President and Congress within the political framework of the Federal Budget System.

2. Planning, Programming and Budgeting System (PPBS)

PPBS is the internal system used to obtain and manage DOD resources. Within Chapter III the evolution of PPBS is discussed along with the basic function of the system. Upon analysis of the information presented concerning PPBS, the reader should be cognizant of the following key aspects of the system:

a. The system of Planning-Programming-Budgeting relates three factors:

(1) A desired outcome (Planning).

(2) The structuring of methods of achieving the outcome (Programming).

(3) The funds available to accomplish the end result (Budgeting).

b. PPBS attempts to force government operations to be more efficient and effective by improving the allocation of public resources between competing needs.

c. An understanding of the Army PPBS cycle and the sequential interrelationships of events within each phase of the cycle is critical for the following specific reasons:

(1) The timing of the various events within the PPBS cycle impacts on all resource managers regardless to their level of involvement.

(2) The entire flow of the Army PPBS Cycle (as illustrated in Figures 2 through 5, Chapter III) must be comprehended by any participant in the budgetary process in order to fully appreciate the interworkings of the entire system.

(3) A working knowledge of the actions taken by the various agencies within the Army PPBS Cycle is important for any Army financial manager/comptroller. Such knowledge allows for the anticipation of requirements and prior planning necessary to function in an optimum manner.

(4) Upon analysis of the PPB process within the Army, it should be apparent that the system can never be viewed in a static perspective. There are constant changes within the system that result in shifts in emphasis and procedural modifications but the basic framework of the Planning, Programming, and Budgeting System within the Army retains its chief functional characteristic...effective resource allocation.

3. Zero Base Budgeting

In Chapter IV the authors presented an analysis of the latest budgetary "tool" within the financial management community.....Zero Base Budgeting (ZBB). During the course of this analysis the evolution of ZBB was discussed as well as the basic ZBB concpets and processes.

In addition the authors attempted to answer the key question surrounding the ZBB implementation upon the Army's

PPBS-oriented budgetary environment..."Will ZBB replace, compliment or hinder PPBS?"

In answering this critical question the authors compared the characteristics of both ZBB and PPBS and found some basic similarities but also a key difference. This difference concerned the decision making perceptions of the two concepts; PPB focuses on top level decision making, while ZBB focuses on decisions at various operating and management levels.

In dealing with this critical difference, the authors agree with the contention that while the two concepts are essentially different they are potentially complimentary. Top level guidance is a part of the ZBB process and the zero base approach has the potential to fill a critical gap in the PPB process and should not be viewed as a system unto itself.

ZBB represents just one of many management tools necessary for effective financial management. It is a potentially powerful technique which can enable the decision maker at all levels of management to get the most out of each dollar consumed.

ZBB does not pose a threat to PPBS but should be perceived as a means to improve the present system. In many ways ZBB simply forces the manager to do what he should have been doing all along in the pre-ZBB Planning, Programming and Budgeting environment.

4. The Training Management Control System (TMCS)

In Chapter V the authors introduced and discussed the Training Management Control System (TMCS). During the course of this analysis the authors explained the basic system, identified some problem areas within the current configuration of TMCS and made recommendations to improve the validity of the system's output.

In addition, the potential of TMCS to serve as a viable tool to justify the funds required to support Army training was discussed. This potential of TMCS to serve as a budgetary tool is a key aspect of the system since the evolution of ZBB in an environment of constrained resources demands justification for every dollar consumed.....including training dollars.

It is the contention of the authors that, if the needed improvements (as advocated in Chapter V) are made to the present TMCS configuration, the operational and financial management community within the Army will have a much needed budgetary tool. This tool will allow for more accurate quantitative justification of training dollars (OMA, P2 mission funds).

5. TMCS/ZBB Application in COBE Formulation

Chapter VI explored the potential application of TMCS in conjuction with ZBB in the development of a methodology to aid in the formulation of a portion of the Army budgeting process. In the course of this methodological

development the authors focused attention upon those procedures necessary to optimize the benefits of TMCS/ZBB interface in the formulation of the training budget (OMA, P2 mission funds) for a hypothetical separate Brigade within the Development of the Army structure.

The application of TMCS/ZBB in the budget formulation process was initially demonstrated at the lower management level (company sized unit) and developed to encompass the actions required at the higher levels of management within the framework of the authors' vehicle for analysis...the 199th Infantry Brigade.

This analysis included tracing the issue building and ranking process involved in putting together the Command Operating Budget Estimate (COBE) focusing on OMA, P2 mission dollars. Although the scope of this discussion was limited to P2 mission funds, the procedures applied are similar to those that could be used in formulating the budget for other OMA programs as well as various major appropriations.

Although the budget formulation phase of the budgeting process was given the major emphasis in Chapter VI, the budget execution and review phases were also discussed to include linkages between budgeting and the accounting system.

In general, the overall intention of Chapter VI was to:

a. Present a potential application of TMCS/ZBB in the development of a budgetary

methodology to be utilized to enhance the Army's effort in justifying the training budget (P2 mission dollars).

b. Increase the readers awareness of the complexities inherent in budget formulation, execution and review at lower levels within the Department of the Army (DOA) structure.

c. Provide the reader with a glimpse of potential future sophistications within the DOA budgetary process.

6. Program Evaluation/Measures of Effectiveness

The final link in the budgetary system, program evaluation and the output measures which aid in completing the feedback loop were the topics of Chapter VII. After first outlining a hierarchy of current Army goals, the complexities of the training environment were addressed. As training programs and budget formulation, execution and evaluation must take place within this environment, it is imperative that the potential financial manager understand its implications for PPB^{ZB}S.

Because no measure of output short of war/battle can provide a "true" measure of effectiveness, proxies of effectiveness must be developed. The Army is working hard on developing such proxies for use in justifying its OMA P2 mission, training budget.

Several of the more key measures under development, the Battalion Field Training Day (BFTD), Readiness Reporting System, National Training Center Concept, Army Training Study (ARTS) and others were analyzed. The purpose of doing so were:

a. To bring about an awareness of current developments in performance measures.

b. To illucidate the importance of such proxies being related to programs and their costs in order to:

(1) Justify training funds

(2) Compare the effectiveness of programs

(Both of these being applied both between DOA and DOD and within DOA).

c. To substantiate the role which the comptroller/financial manager must play in developing, critically testing and implementing these proxies in order to better advise their commanders on the use of such measures in resource management.

D. CLOSING COMMENTS

The research effort involved in the development of this thesis report presented the opportunity for a critical look at the Army's budgetary environment. During the course of this analysis, it was virtually impossible not to form opinions and perform subjective evaluations of the budgetary process and its tools.

The conclusions drawn and recommendations made throughout the previous seven chapters are the main products of the research but do not represent the total benefits derived from the study. An additional key windfall is the "bottom-line" contention that the Army Financial Management community is generally moving in a positive direction in efforts to enhance the PPBS process at all levels.

Especially encouraging were improvements in the following areas of budgetary concern:

1. PPBS in the Army has retained chief functional characteristic intended by its creators; "more effective resource management."

2. The initial fears of major changes associated with ZBB implementation have dissipated and the positive aspects of ZBB complimenting PPBS have emerged.

3. The development of the Training Management Control System (TMCS) to help cost, plan the use of, and justify P2 mission training dollars is a much needed step in the reinforcement of a, heretofore, very weak area.

4. A great deal of "soul-searching" work is being performed in an attempt to improve the Army's ability to measure training effectiveness and to relate levels of effectiveness to costs.

As the Army budgeting process continues to evolve and future sophistications ensue, members of the financial management community must be supportive, responsive and mentally equipped to deal with changes which can enhance

performance. This does not entail projecting each new innovation as a panacea for all shortcomings, but rather maintaining a positive, alert perspective in order to properly evaluate the merits of the innovation(s) over time.

The development of ZBB and TMCS is an excellent example of current innovations that should be given the benefit of a fair trial and cooperative effort. The financial management community must therefore analyze the potential contributions of ZBB and TMCS in terms of the incremental advantages afforded by such instruments as a means to better perform their primary functions.....more effective resource allocation and control.

ANNEX A

DEFINITIONS APPLICABLE TO ARMY PPBS CYCLE

(ABE) ARMY BUDGET ESTIMATES

Coordinated Army Budget Estimates (ABE) constitute the Army budget submission to OSD. They are in accord with the Program Objective Memorandum (POM) as modified by the Amended Program Decision Memorandum (APDM) and, in addition, conform with specific budget guidance formalized in the Budget Estimates Guidance (BEG). The emergent budget covers the prior year, the current year, (the fiscal year immediately preceding the budget year), the budget year, and, for authorization estimates, the budget year plus 1.

(ACP) ARMY CAPABILITIES PLAN

The Army issues the Army Capabilities Plan (ACP) to provide mobilization and operational planning guidance to Army Staff agencies, MACOMs, and Army component commands of unified commands for the employment and support of Army forces in the short-range period. It reflects specific tasks and capabilities attainable within existing programs and budget limitations. The ACP uses the planning assumptions of, and implements, the Joint Strategic Capabilities Plan (JSCP).

(AFG) ARMY FORCE GUIDANCE

The Army force Guidance (AFG) provides guidance to the major Army commands (MACOMS) and the Army Staff agencies. It guides both planning and programming and helps link these two phases of the PPBS.

(APDM) AMENDED PROGRAM DECISION MEMORANDUM

Following receipt of the Army reclama and after the major issues meeting, the Secretary of Defense publishes an

Amended Program Decision Memorandum (APDM). Provided to the Army in late August or early September, the document approves the POM with the specific changes identified in the PDM, as amended in consideration of the Army reclama. Next, the Secretary reports to the President on the status of the overall program and after the President's review revises the APDM as required. As specifically and finally amended, the APDM enables the Secretary to supplement earlier budget instructions. Specifically, in a separate communication to the Army, he transmits control totals for TOA and instructions for using the decremented, basic, and enhanced programs of the POM to develop a final FYDP and, at the same time, to construct budget estimates for the forthcoming budget submission.

(APPGM) ARMY PLANNING AND PROGRAMMING GUIDANCE MEMORANDUM

The Army Planning and Programming Guidance Memorandum (APPGM) serves as the primary guidance document for developing the program proposed each year in the Army Program Objective Memorandum (POM). The APPGM incorporates OSD guidance and expands on Army program aspects. Reflecting the Decision Package Sets (DPS) on which the President's budget is based and allocating projected appropriation levels, the APPGM provides specific policy and resource constraints together with administrative instructions for preparing the Army program and POM. More precisely, the APPGM announces the basic assumptions and presents planning guidance for structuring the force and programming its material and logistics support requirements. It narrates policy themes and establishes priorities for allocating resources. It schedules major POM development actions and prints an index of POM topics together with administrative instructions for their preparation. Also, it assigns Staff agencies responsibilities for preparing the topics and provides guidance in terms of the thrust and substance of issues to be addressed. The APPGM expresses fiscal guidance as outyear extensions of prior-year amounts given in the President's budget (for POM 1980 - 1984, for example, it extends the FY 1978 column of the FY 1979 budget).

(ASA) ARMY STRATEGIC APPRAISAL

Developed by the Strategic Studies Institute at the Army War College, the Army Strategic Appraisal--rather than an approved Army document--constitutes a think-piece that proposes alternative solutions. The document presents

an unconstrained view of mid-range trends and addresses strategy and force-planning issues. The major commands and Army Staff consider the issues it identifies for possible inclusion in the PPBS and in forming Army positions when responding to joint and DOD papers.

(BEG) BUDGET ESTIMATES GUIDANCE

Following approval of the Program Objective Memorandum (POM), OSD prepares Budget Estimates Guidance (BEG) applying to the submission of the Army budget. The BEG explains new requirements initiated by Congress, any requirements imposed by either OMB or OSD, and identifies any supplemental request to be submitted for the current budget year together with items to be considered in the request.

(BER) BUDGET EXECUTION REVIEW

Prior to the fiscal year budget, the major commands submit a for Budget Execution Review (BER) at mid-fiscal year, which reflects 4 or more months of actual performance towards approved program objectives. Purpose is to provide in depth analysis to insure that all actions required for program accomplishment are taken.

(CG) CONSOLIDATED GUIDANCE

A primary guidance document that provides central policy and direction for the current PPBS cycle. New, beginning with the FY 1980-1984 cycle, the CG superseded several documents formerly published at various stages of program development. The event has thus merged previously incremental program and fiscal guidance into a single authoritative statement. Substantively, the Consolodated Guidance (CG) articulates rationale for the defense program and identifies fundamental issues. The SECDEF uses the document, however, not only to inform but also to promote dialogue between OSD and the services and with the President. The document covers policy; military strategic concepts and objectives; planning and programming guidance; force levels; and manpower, support, and fiscal guidance. Specific in nature, it addresses such major areas of interest as strategic offensive capabilities, tactical air warfare, theater nuclear forces, and logistics.

(COBE) COMMAND OPERATING BUDGET ESTIMATE

The Army commands formulate command requirements for the budget year and about 1 July submit the requirements to HQDA as the Command Operating Budget Estimate (COBE). The input provides appropriation directors with detail essential in developing and evaluating their budget estimates. The submission not only supports the formulation and justification of the Army Budget Estimates (ABE) but also furnishes the commands the opportunity to inform the Army Staff of any foreseeable change in previously projected program requirements for the upcoming fiscal year. The information helps appropriation directors to construct apportionment requests forwarded to OSD-OMB before the 15 September OSD-budget submit. (See Annex B)

(DG) DEFENSE GUIDANCE

See Consolidated Guidance (CG)

(DPS) DECISION PACKAGE SET

A feature of zero-base budgeting, Decision Package Sets (DPS) replaced Program/Budget Decisions (PBD) beginning with the FY 1979 budget. A DPS is a series of justification documents (decision packages) prepared for a defined program or organizational entity (decision unit) that represents its total budget request. The products of the OSD-OMB review of Army Budget Estimates (ABE) are scores of Decision Package Sets (DPS) returned by OSD either approving or revising specific programs. The returned DPSs channel through the Director of the Army Budget who assigns action to appropriate staff agencies who, in turn, coordinate with appropriation directors to determine if appeal is warranted. Each successful appeal results in a revised DPS to document final OSD decisions on affected portions of the budget. During December the SA and CSA meet with the SECDEF to discuss those major issues who decisions limit capabilities to execute Army programs. Decisions of the SECDEF and President resulting from this major budget issues meeting appear as revisions to previously issued DPSs. For the handling of major program issues, see the discussion for the Issue Paper Cycle.

(FYDP) FIVE YEAR DEFENSE PROGRAM

The Five Year Defense Program (FYDP) and its separately published procurement and RDTE annexes constitute the official summary of programs approved by the Secretary of Defense. The FYDP specifies force levels in terms of major mission programs and support objectives and projects. It also lists corresponding total obligational authority and manpower. For each category, it records totals by prior fiscal year, current fiscal year, budget year, and succeeding fiscal years--7 succeeding years for force levels and 4 for TOA and manpower. The FYDP serves as the controlling internal working document of the DOD PPBS, periodically recording its major outputs--proposed programs and budget estimates.

(JCS) JOINT CHIEFS OF STAFF

(JFM) JOINT FORCE MEMORANDUM

The Joint Force Memorandum (JFM), published in the latter part of April, constitutes part of the programming phase. Although part of the JSPS, the JFM receives input from the PPGM issued in February, and it and the Program Objective Memornadums (POM) provide each other reciprocal input.

JFM provides JCS recommendations on the fiscally constrained force levels and support programs that will require trade-off decisions by program managers during the current year.

(JIEP) JOINT INTELLIGENCE ESTIMATE FOR PLANNING

The Joint Intelligence Estimate for Planning (JIEP), which focuses on the short and mid-range periods, contains global and regional appraisals including estimates of the external and internal threats to countries of significance to the United States and estimates of the Warsaw Pact and Asian Communist military forces. The JIEP provides the principal intelligence basis for the JSOP, JFM, JSCP, and the mid-range period of the JRDOD.

(JLREID) JOINT LONG-RANGE ESTIMATIVE INTELLIGENCE DOCUMENT

The Joint Long-Range Estimative Intelligence Document (JLREID) summarizes factors and trends affecting world power relationships in the long-range planning period, including an intelligence estimate of the likelihood and capabilities of important foreign nations to undertake courses of action which could materially affect the national interests of the United States. The JLREID provides the principal intelligence basis for the JLRSS and the long-range period of the JRDOD. (See Annex B).

(JLRSS) JOINT LONG-RANGE STRATEGIC STUDY

The Joint Long-Range Strategic Study (JLRSS) is a source document that addresses the strategic implications of worldwide and national economic, political, social, technical, and military trands. It deals with national objectives, policies, and military constraints and relates these to world and regional trends. As a source document, it is intended to stimulate more sharply focused strategic studies and to be more useful in developing military policies, plans, and programs having long-range implications. (See Annex B).

(JRDOD) JOINT RESEARCH AND DEVELOPMENT OBJECTIVES DOCUMENT

The JRDOD advises the Secretary of Defense on the composition and priorities of the DOD R&D program. An authoritative statement of significant military R&D objectives, the document emphasizes those parts of the DOD R&D program that are of national military importance and that consume significant portions of the budget. The objectives proposed by the JRDOD derive from the JLFEID and JIEP and also the strategy, capabilities, and force recommendations given in the JSOP Volumes I and II. The JRDOD is a multi-year document but is reviewed at least annually, concurrently with JSOP VOL II. (See Annex B).

(JSCP) JOINT STRATEGIC CAPABILITIES PLAN

The Joint Strategic Capabilities Plan (JSCP) provides JCS guidance to the commanders of the unified and specified commands and the Chiefs of the military services. It

bears on the accomplishment of military tasks based on projected military capabilities, estimates of the threat during the short-range period, and current guidance of the SECDEF. The JSCP specifically assigns the commanders of unified and specified commands responsibility for preparing contingency plans. (See Annex B).

(JSOP) JOINT STRATEGIC OBJECTIVES PLAN

The Joint Strategic Objectives Plan (JSOP) provides the advise of the Joint Chiefs of Staff to the President and the Secretary of Defense on the military strategy and force objectives for attaining the national security objective of the United States. In addition to recommendations on major forces, it includes the rationale supporting the forces and assessment of associated risks, costs, and manpower estimates, and other supporting data. The JSOP is published in two volumes: Volume I--Military Strategy and Force Planning Guidance; Volume II--Analyses and Force Tabulations and Annexes. (See Annex B).

(MACOM) MAJOR COMMAND

(OSD) OFFICE OF THE SECRETARY OF DEFENSE

(PAPPGM) PRELIMINARY ARMY PLANNING AND PROGRAMMING GUIDANCE MEMORANDUM

The Preliminary Army Planning and Programming Guidance Memorandum (PAPPGM) is normally issued in late December. It is an early version of the mid-Fedruary Army Planning and Programming Guidance Memorandum (APPGM), which constitutes the primary guidance document for developing the program proposed each year in the Army Program Objective Memorandum (POM). The Director of Program Analysis and Evaluation (DPAE), OCSA, begins preparing the PAPPGM each summer as the POM nears final approval. By late September DPAE circulates a draft to the Staff and major commands, receiving their comments in October. DPAE then develops a tentative Staff position for the PAPPGM incorporating the comments of the Staff and commands and also the latest in OSD guidance. The tentative position goes to the Program Guidance and Review Committee (PGRC). On approval by the PGRC, the DPAE issues the PAPPGM as the formal guide for initial POM

preparation. See also the Army Planning and Programming Guidance Memorandum (APPGM).

(PARR) PROGRAM ANALYSIS AND RESOURCE REVIEW

Selected major commands provide analyses of their requirements in the planning and programming phases, primarily through Program Analysis and Resource Review (PARR). PARRs submitted by the major commands present their resource requirements, which constitute an important substantive basis for preparing the Program Objective Memorandum (POM). The PARR furnishes information applicalbe to the budget year, 1st program year, and last 4 program years.

(PBG) PROGRAM AND BUDGET GUIDANCE

The Program and Budget Guidance (PBG) is a two-volume publication (three volumes for FORSCOM and USAREUR). It contains information regarding the availability of dollar and manpower resources and provides guidance to major commands for preparing Program Analysis and Resource Reviews (PARR) and Command Operating Budget Estimates (COBE). Volume I goes to all major commands and operating agencies. It provides general guidance and expresses HQDA views on various programs, and it identifies programs requiring emphasis in command PARR and COBE submissions. Volume II is published separately for each command. Each of the separate publications provides summary data, resource trails, and manpower and fiscal constraints applicable to a particular command. (For FORSCOM and USAREUR, Folume II chapters on manpower and force structure are published as a Volume III). The PBG receives three distributions annually that correspond in October to the Army Budget Estimate (ABE), in January to the President's budget, and in May to the Program Objective Memorandum (POM).

(PCM) PROGRAM CONTINUITY MEMORANDUM

The POM refers to a number of ongoing actions whose resource implications remain uncertain at the time of publication. The Program Continuity Memorandum (PCM), issued in mid-June by the VCSA, documents residual actions. On the one hand, the PCM bridges the gap between the current POM and, on the other, the Army Budget Estimates

(ABE) submitted in September and the POM published the following May. Paralleling the APPGM-POM format, the PCM identifies the specific actions to be taken and assigns primary and secondary responsibilities to the staff and major commands for reporting the September budget estimates and for developing the next year's POM.

(PDM) PROGRAM DECISION MEMORANDUM

The Secretary of Defense issues a Program Decision Memorandum (PDM) approving the POM with tentative specific changes. The Army staff reviews the PDM, determines which decisions the Army should reclama, identifying those that warrant the personal attention of the Chief of Staff or Secretary of the Army. These latter decisions fall into the "major issues" category and result in a meeting between the Secretary of the Army, Chief of Staff, and the Secretary of Defense for a personal discussion of the issues. Also, see Amended Program Decision Memorandum (APDM).

(POM) PROGRAM OBJECTIVE MEMORANDUM

The Program Objective Memorandum (POM) formally transmits to OSD the Army proposals for resource allocation in consonance with program guidance. The POM describes all aspects of Army programs to increase the operational readiness of the total Army. It highlights forces, manpower, and material acquisition. It also addresses the equipment distribution and logistics support required to meet the strategy and objectives specified by the Secretary of Defense.

(PPGM) PLANNING AND PROGRAMMING GUIDANCE MEMORANDUM

The Planning and Programming Guidance Memorandum (PPGM) published in February formally initiates the programming phase. The PPGM gives initial specific guidance, particularly the fiscal constraints, applicable to preparation of the POM program. Its content develops in part from a consideration of the Defense Guidance and JSOP Vol II. The content develops also froma consideration of service and JCS comments on the TPPGM as well as of other events that have occurred during the preceding months, including preparation of the President's budget

in December. The PPGM, which reflects the Decision Package Sets (DPS) of December, provides a basis for completing the Joint Force Memorandum (JFM) and preparing the Army Planning and Programming Guidance Memorandum (APPGM). (See Annex B).

(TPPGM) TENTATIVE PLANNING AND PROARAMMING GUIDANCE MEMORANDUM

See Consolidated Guidance (CG).

ANNEX B

PPBS MODIFICATIONS

Beginning with the FY 1980-1984 cycle, there will be some changes in documents, schedules, and approaches in the PPBS designed to benefit from Presidential involvement in the PPB process and also better to articulate DOD guidance before POM preparation. Some of the key changes associated with this PPBS modification include:

1. The development of Consolidated Guidance (CG) by the Secretary of Defense which consolidates in one place DG, the PPGM, and the TPPGM, all of which it supercedes.
2. The replacement of the Joint Forces Memorandum (JFM) with a Joint Program Assessment Memorandum (JPAM) which provides JCS advice to the Secretary of Defense for his review of the POMs.

3. The replacement of the JSOP I and II with a Joint Strategic Planning Document (JSPD) that will provide comprehensive recommendations by the JCS and will include much the same information provided previously by the JLREID, JLRSS, JRDOD and JSCP.

ANNEX C

(TMCS SUBSYSTEM DESCRIPTIONS)

1. MACOM COST FACTOR PROGRAM (MCFP):

Using inputs generated by CAMUS and the equipment utilization data reported by units over the past 12 months, develops and maintains cost factors by installation, unit, and type of equipment, expressed in dollars per mile/hour/or round. Provisions are made to identify cost factors that appear to vary excessively compared to similar installations/units/equipment and to update the tapes as new or revised cost factors are developed.

2. TRAINING MANAGEMENT INFORMATION PROGRAM (TMIP):

Prints out a blank Training Information Worksheet. Tailored for each type of Battalion for preparing training event input (see Appendix 1). Authorized equipment and type of training ammunition is printed out along with spaces for the input of the following data:

a. Commander's priority for the training event

b. Duration of the event

c. Estimates of personnel (nos.) and equipment (density and use) required

d. Range/Manuever area desired and size

e. Training ammo requirements (by DODIC)

f. Non-equipment related costs (other costs)

3. BATTALION ANNUAL TRAINING PROGRAM (BATP):

Tape and hard copy printout (see Appendix 2) using TMIP input. Of central importance to the budgeting process here is the computation of Battalion Field Training Days (BFTDs), a measure of output which hopefully can be related to both a certain level of costs and effectiveness. This concept is analyzed fully in Chapter 7. Also of critical concern is the necessity to update the BATP with actual resources used once the programmed training is conducted. This is essential to determine the variance between programmed and actual resource consumption and subsequent impacts on future training.

4. TRAINING SCHEDULE GENERATOR (TSG):

Uses latest BATP tape as input; designed to eliminate the administrative typing workload. By entering other training schedule data such as uniform, instructor, training location and aids, etc., the training schedule is automatically printed and recorded on the training schedule tape. The TSG can also be rerun as the BATP is changed.

5. BATTALION COST FACTOR PROGRAM (BCFP):

Utilizes input from three of the previous programs (MCFP, TMIP, BATP) to cost each field/range training event by applying the appropriate cost factors to the types of equipment, density and usage inputed. The output is a period BATP tape.

6. BATTALION DECISION MODEL (BDM):

Inputs to this model includes the priced Battalion Annual Training Program (BATP) tape and a set of resource constraints used during the field training; e.g.:

a. Spare parts (other than aviation)

b. Aviation spare parts

c. Gasoline (MOGAS) — In Dollars or Gallons

d. Diesel

e. Aviation Fuel (AVGAS)

f. Flying Hours

g. Training Days (BFTDs)

h. Acre Days

Using a linear programming technique BDM then produces a printout (see Appendix 3) which (proportedly) illustrates:35

1. What training can be conducted within the constraints.

2. Total resources consumed for all events, by type of resource, for training that can be accomplished.

3. Field training that cannot be conducted in the Battalion Annual Training Program by training event and the resources required to accomplish each of these events.

4. Unused resources by type/dollar amount.

7. DIVISION DECISION MODEL (DDM):

DDM represents the culmination of this building process. It is run after the optimization of Battalion Annual Training Programs by rerunning the Battalion Decision Model. As presently envisioned, the DDM will[36] (see example Appendix 4):

a. Reprice the battalion level optimum field training solutions using division level cost factors, which include maintenance battalion costs.

b. Prorate garrison maintenance and garrison training (TDY, DX, Central Issue Facility, and Self-Service Supply Center) on the basis of authorized strength to each battalion/separate company in the division.

c. Provide AVGAS and aviation spare parts dollars required to accomplish individual proficiency flying in aviation units.

d. Provide dollar/gallon requirements by unit for MOGAS, AVGAS, and Diesel to support garrison maintenance and garrison training requirements.

d. Provide programmed allocations of funds to battalions/separate Companies in categories that can be related to commitments and actual resources consumed as recorded in CAMUS and STANFINS respectively.

f. Provide all data element requirements to complete Schedule 40 (Quantification of Program 2 Mission Dollars) of the Command Operating Budget Estimate (COBE) for the installation under Zero Based Budgeting (ZBB) procedures.

g. Determines division level impact of resource changes on field training considerations for the battalions.

h. Summarizes the total number of Battalion Field Training Days, the total number of acre/days, and the total amount of dollars used for field training, by battalion.

i. Summarizes the total variable (field training) and fixed (garrison) cost by battalion.

8. TRAINING AMMUNITION CONTROL SUBSYSTEM (TACS):

Develops division requirements based on the finalized Battalion Annual Training Programs (BATPs) and training events schedules to be conducted. In addition to being

an allocation tool, TACS will price the ammunition by index value and keep a running record of the ammunition used by type and unit.

9. MANUEVER AREA SCHEDULING SYSTEM (MASS):

Requires inputs of training locations available by Julian date and the BATP tape (containing events that can be conducted and location preferences). MASS will then provide:

1. A training area assignment schedule, by month or quarter, by Julian date, for each battalion.

2. Automatic consideration of some ranges/training areas being closed when others are being used for certain training events.

3. Capability to modify training area assignments and identify impact on other battalion training programs.

• COMPLETED FOR ALL COMBAT AND COMBAT SUPPORT BATTALIONS

TEST
TRAINING INFORMATION WORKSHEET

MECHANIZED INFANTRY BN

ORGANIZATION |_____|

DATE |_____|

EVENT |_____| UNIT SIZE: 1 - SQD/SEC, 2 - PLT, 3 - CO, 4 - BN, 5 - OTH
LIMIT TO 12 CHAR-#FIRST IF MULTIPLE EVENTS

ARTEP LEVEL |____| EVENT LIMIT |____| 0 - OPT TYPE 1 - REG TNG |____| 1-FIELD 2 - RANGE 3 - GARRISON LOCATION |_____|

NO PERS PART |____| EVENT PRIORITY |____|

DATE FROM |_____| DATE TO |_____| DURATION |_____| HOURS

NO UNITS |____|

RANGE REQ(OPTN) |____X____|

RANGE AVAIL |____X____|

VEHICLES

	NOMENCLATURE	AUTH	NO PART	AVG MI /VEH
1 -	CARRIER,M577	7		
2 -	CARRIER,M113	59		
3 -	RECOV.VEH,M578	6		
4 -	TRK,AMB,3/4 TON	1		
5 -	TRK,CGO,3/4 TON	7		
6 -	TRK,CGO,2 1/2T	14		
7 -	TRK,CGO,2 1/2T W	2		
8 -	TRK,CGO,5 TON	6		
9 -	TRK,STON,W/W	9		
10 -	TRK,UTIL,1/4 T	34		
11 -	WRECKER,5 TON	1		
12 -				
13 -				
14 -				
15 -				
16 -				
17 -				
18 -				
19 -				
20 -				

WEAPONS

	NOMENCLATURE	AUTH	CAL AMMO	NO.	AVG RD /WPN	AVG MI /WPN
31 -	CARR,M125,81MM	9	81			
32 -	CARR,M106,107MM	4	4.2			
33 -	CARR,TOW	22	TOW			
34 -	LAUNCH,GREN	95	40			
35 -	LAUNCH,ROCK	9	66			
36 -	MG,VEH,MTD	97	50			
37 -	MG,GND,MTD	26	50			
38 -	MG,LT,M60	49	7.62			
39 -	PISTOL	116	45			
40 -	RIFLE,M16	731	5.56			
41 -	SUB MG	45	45			
42 -	TRACK,SU36	48	DGM			
43 -						
44 -						
45 -						
46 -						
47 -						
48 -						
49 -						
50 -						

OTHER EQUIPMENT

	NOMENCLATURE	AUTH	NO.	AVG MI/HR.
21	-RADAR,AN/PPS5	4		
22	-RADIO,AN/PRC77	12		
23	-GEN,5KW,60HZ	1		
24	-GEN,5KW,400HZ	4		
25	-GEN,1.5KW,60HZ	13		
26	-GEN,1.5KW,DC	2		
27	-COMP,(ALL)	5		
28	-RTT	1		
29	-			
30	-			

OTHER COSTS

	NOMENCLATURE	COSTS
1 -		
2 -		
3 -		
4 -		
5 -		
6 -		
7 -		
8 -		
9 -		
10 -		

REMARKS

1 -	
2 -	
3 -	
4 -	
5 -	
6 -	
7 -	
8 -	
9 -	
10 -	

UNIT= 2 SIZE | ARTEP= 1 LEVEL | EVENT= 1 LIMIT | TYPE= 1 LOCATION= 4.5.9A TNG

EVENT=1 BN SUF | NO PERS= 588 PART | EVENT= 2.00 PRIORITY | DATE=8152 FROM | DATE=8172 THRU | NO= 16 UNITS | RANGE= 8 X 12 K REQ(OPTN) | RANGE=13 X 17 K AVAIL | DURATION= 176 HOURS | ACRES= 23712 | ACRES= 54587

VEHICLES

NOMENCLATURE	NO PART	AVG MI /VEH
CARRIER,M577	1	24
CARRIER,M113	46	216
RECOV VEH,M578	3	44
TRK,CGO,5/4 TON	4	116
TRK,CGO,2 1/2T	3	122
TRK,CGO,5 TON	2	122
TRK,STON,W/W	2	122
TRK,UTIL,1/4 T	12	256

WEAPONS

NOMENCLATURE	NO.	AVG RD /WPN	AVG MI /WPN
CARR,M125,81MM	9	120	24
CARR,M106,107MM	4	100	24
CARR,TOW	22	0	216
LAUNCH,GREN	60	6	0
MG,VEH,MTD	38	600	0
MG,LT,M60	18	1000	0
RIFLE,M16	360	180	0
TRACK,SU36	18	10	0

OTHER EQUIPMENT

NOMENCLATURE	NO.	AVG MI/HR.
RADAR,AN/PPS5	4	56
RADIO,AN/PRC77	44	78

OTHER COSTS

NOMENCLATURE	COSTS

REMARKS

ARTEP 71-2

4.00 BATTALION FIELD TRAINING DAYS

(COMPUTER PRINT OF TNG EVENT INPUT)

UNIT= 2 SIZE | ARTEP= 1 LEVEL | EVENT= 8 LIMIT | TYPE= 1 LOCATION= 4.5.9A TNG

EVENT=2 BN SUF | NO PERS= 568 PART | EVENT= 8.50 PRIORITY | DATE=8040 FROM | DATE=8080 THRU | NO= 16 UNITS | RANGE= 8 X 12 K REQ(OPTN) | RANGE=13 X 17 K AVAIL | DURATION= 176 HOURS | ACRES= 23712 | ACRES= 54587

VEHICLES

NOMENCLATURE	NO PART	AVG MI /VEH
CARRIER,M577	1	24
CARRIER,M113	46	216
RECOV VEH,M578	3	6
TRK,CGO,5/4 TON	4	116
TRK,CGO,2 1/2T	1	122
TRK,CGO,2 1/2T W	2	122
TRK,CGO,5 TON	2	220
TRK,STON,W/W	2	220
TRK,UTIL,1/4 T	12	256

WEAPONS

NOMENCLATURE	NO.	AVG RD /WPN	AVG MI /WPN
CARR,M125,81MM	9	124	24
CARR,M106,107MM	4	100	24
CARR,TOW	22	8	216
LAUNCH,GREN	60	6	36
CARR,M125,81MM	9	124	24
CARR,M106,107MM	4	100	24
CARR,TOW	22	0	216
MG,VEH,MTD	38	600	0
MG,LT,M60	18	1000	0
RIFLE,M16	360	180	0
TRACK,SU36	18	10	0

OTHER EQUIPMENT

NOMENCLATURE	NO.	AVG MI/HR.

OTHER COSTS

NOMENCLATURE	COSTS

REMARKS

PROBLEM ID. ..... 1-10 MECH INF

RESOURCE LIMITS	MIN	MAX
AVGFARES $	0.00	0.00
AVGAS $	0.00	0.00
MOGAS $	0.00	3515.00
SPARES $	0.00	133500.00
DIESEL $	0.00	20971.00
OTH COST $	0.00	0.00
FLY-HRS	0.00	0.00
BFID	0.00	241.00
ACRE DAYS	0.00	845827.00

TRAINING RESOURCE LIMITATIONS FOR 1-10 MECH INF BN

EVENT LIMITS	MIN BFID'S	MAX BFID'S
EIB	0.00	3.00
MOBA	0.00	2.00
AIR MOB TNG	0.00	3.00
1 BN EDRE	0.00	3.00
2 BN EDRE	0.00	3.00
3 BN EDRE	0.00	3.00
4 BN EDRE	0.00	1.00
1 BN CPX	0.00	1.00
2 BN CPX	0.00	1.00
3 BN CPX	0.00	1.00
1 TEMT	0.00	.01
2 TEMT	0.00	1.00
EXT EVAL	0.00	9.00
INT EVAL	0.00	41.00
1 BN SUE	0.00	4.00
2 BN SUE	0.00	4.00
1 BN FTX	0.00	4.00
2 BN FTX	0.00	4.00
3 B1 QUAL	0.00	.50
2 B1 QUAL	0.00	.50
1 B1 QUAL	0.00	.50
3 4.2 QUAL	0.00	.01
2 4.2 QUAL	0.00	.01
1 4.2 QUAL	.01	.01
1 M16 QUAL	0.00	1.00
2 M16 QUAL	0.00	1.00
1 7.62 QUAL	0.00	.50
2 7.62 QUAL	0.00	.50
1 TOW PRAC	0.00	.01
2 TOW PRAC	0.00	1.00
3 TOW PRAC	0.00	.01
3A TOW PRAC	0.00	1.00
6 TOW PRAC	0.00	.01
7 TOW PRAC	0.00	.01
9 TOW PRAC	0.00	.01
16 TOW PRAC	0.00	.01
8 TOW QUAL	0.00	1.00
4 TOW QUAL	0.00	1.00
5 TOW QUAL	.01	.01
TASKINGS	0.00	5.00

COMPUTER DETERMINED BATTALION FIELD TRAINING DAY EQUIVALENTS FOR EACH EVENT

(SEPARATE FORMULA FOR MECH TYPE COMBAT / COMBAT SUPPORT BATTALION)

REQUIRED TRAINING BY DIVISION OR HIGHER HEADQUARTERS

COMMANDER'S WEIGHTING FACTORS FOR EVENTS

FTX	=	5.50
HORA	=	7.00
AIR MOB TNG	=	6.00
1 BN FORE	=	9.00
2 BN FORE	=	8.00
3 BN FORE	=	7.00
4 BN FORE	=	6.00
1 BN CPX	=	7.50
2 BN CPX	=	7.00
3 BN CPX	=	6.50
1 TEWT	=	8.00
2 TEWT	=	7.50
EXT EVAL	=	8.25
INT EVAL	=	8.90
1 LN SUP	=	9.00
2 LN SUP	=	8.50
1 BN FTX	=	9.00
2 BN FTX	=	8.25
3 81 QUAL	=	8.25
2 81 QUAL	=	8.50
1 81 QUAL	=	9.00
3 4.2 QUAL	=	8.25
2 4.2 QUAL	=	8.50
1 4.2 QUAL	=	9.00
1 M1A QUAL	=	7.50
2 M1A QUAL	=	8.00
1 7.62 QUAL	=	6.50
2 7.62 QUAL	=	5.50
1 TOW PRAC	=	7.50
2 TOW PRAC	=	9.00
3 TOW PRAC	=	8.00
30 TOW PRAC	=	9.00
4 TOW PRAC	=	6.50
7 TOW PRAC	=	7.00
9 TOW PRAC	=	5.50
10 TOW PRAC	=	6.00
8 TOW QUAL	=	7.50
6 TOW QUAL	=	8.00
5 TOW QUAL	=	9.00
TASKINGS	=	5.00

BATTALION COMMANDER'S PRIORITY FOR EACH TRAINING EVENT

5.00 LOWEST PRIORITY

9.00 HIGHEST PRIORITY

Appendix 3 (Cont.)

TRAINING THAT CAN BE CONDUCTED (LINDAR PROGRAM OUTPUT)

	AVSPARES $	AVGAS $	MOGAS $	SPARES $	DIESEL $	OTH COST $	TOTAL $	FLY-HRS	BFTB	ACRE DATA	X-CONT
EIR	0.000	0.000	203.068	3026.688	248.184	0.000	3477.921	0.000	3.000	5928.000	1.811
NODA	0.000	0.000	0.000	1258.524	236.111	0.000	1509.633	0.000	2.000	1574.880	2.361
AIR MOB TNG	0.000	0.000	68.820	555.680	32.041	0.000	656.541	0.000	3.000	8892.000	1.971
1 BN EDRE	0.000	0.000	47.441	2029.661	315.031	0.000	2392.931	0.000	3.000	8892.000	2.961
2 BN EDRE	0.000	0.000	47.441	2216.561	341.921	0.000	2605.921	0.000	3.000	8892.000	2.631
3 BN EDRE	0.000	0.000	47.441	2232.781	344.661	0.000	2624.881	0.000	3.000	8892.000	2.301
4 BN EDRE	0.000	0.000	47.441	2390.301	365.631	0.000	2803.371	0.000	1.000	8892.000	1.971
1 BN CPX	0.000	0.000	34.851	516.561	42.151	0.000	593.561	0.000	1.000	247.000	2.471
2 BN CPX	0.000	0.000	34.851	516.561	42.151	0.000	593.561	0.000	1.000	247.000	2.301
3 BN CPX	0.000	0.000	32.111	527.841	43.021	0.000	602.981	0.000	1.000	247.000	2.141
1 TEWT	0.000	0.000	115.021	723.841	3.951	0.000	842.811	0.000	.811	0.000	2.631
2 TEWT	0.000	0.000	115.021	820.441	19.451	0.000	954.911	0.000	1.000	26676.000	2.471
EXT EVAL	0.000	0.000	636.681	32087.481	5424.601	0.000	38148.761	0.000	9.000	54587.000	2.711
INT EVAL	0.000	0.000	922.431	34394.081	5504.401	0.000	40821.211	0.000	11.001	54587.000	2.831
1 BN SUE	0.000	0.000	200.851	15598.721	3012.341	0.000	18811.911	0.000	4.001	54587.000	2.961
1 BN FIX	0.000	0.000	320.261	12582.141	1961.551	0.000	14863.951	0.000	4.001	31616.881	2.961
2 BN FIX	0.000	0.000	313.081	12307.911	1908.201	0.000	14529.191	0.000	4.001	31616.001	2.711
3 81 QUAL	0.000	0.000	20.041	404.421	63.871	0.000	488.331	0.000	.501	5928.881	2.711
2 81 QUAL	0.000	0.000	8.481	388.661	63.871	0.000	461.011	0.000	.501	5928.001	2.881
1 81 QUAL	0.000	0.000	8.481	388.661	63.871	0.000	461.011	0.000	.501	5926.001	2.961
1 4.2 QUAL	0.000	0.000	3.851	254.501	38.591	0.000	296.941	0.000	.011	6916.001	2.961
1 M16 QUAL	0.000	0.000	12.231	175.141	27.681	0.000	214.971	0.000	1.001	1235.001	2.471
2 M16 QUAL	0.000	0.000	12.231	175.141	27.681	0.000	214.971	0.000	1.501	1235.001	2.631
1 7.62 QUAL	0.000	0.000	7.811	107.261	12.251	0.000	127.331	0.000	.501	2964.001	2.141
2 7.62 QUAL	0.000	0.000	7.811	107.261	12.251	0.000	127.331	0.000	.501	2964.001	1.811
3 TOW PRAC	0.000	0.000	4.241	41.521	97.911	0.000	163.671	0.000	1.001	988.001	2.961
3A TOW PRAC	0.000	0.000	4.241	41.521	97.911	0.000	163.671	0.000	1.001	5928.001	2.961
8 TOW QUAL	0.000	0.000	4.241	41.521	97.911	0.000	163.671	0.000	1.001	988.001	2.471
6 TOW QUAL	0.000	0.000	4.241	41.521	97.911	0.000	163.671	0.000	1.001	988.001	2.631
5 TOW QUAL	0.000	0.000	6.941	128.481	106.551	0.000	233.921	0.000	.011	5928.001	2.961
USED	0.000	0.000	3291.631	126144.071	20654.241	0.000	150189.961	0.000	63.031	354492.001	76.721
LIMIT	0.000	0.000	3535.001	133500.001	20971.001	0.000	158306.001	0.000	241.001	845823.881	
UNUSED	0.000	0.000	243.371	7335.931	316.741	0.000	7896.041	0.000	177.971	491135.001	

CONSTRAINT

TRAINING THAT CANNOT BE CONDUCTED

→ PARTIAL POSITIONS IN LP FINE TUNE WITH PTRNN

	AVSPARES $	AVGAS $	MOGAS $	SPARES $	DIESEL $	OTH COST $	PRIORITY	FLY-HRS	BFTB	ACRE DATA	X-CONT
2 BN SUE	0.000	0.000	205.401	15577.461	4159.011	0.000	8.501	0.000	4.001	54587.001	2.801
3 4.2 QUAL	0.000	0.000	1.931	242.101	38.591	0.000	8.251	0.000	.011	6916.001	2.711
2 4.2 QUAL	0.000	0.000	1.931	242.101	38.591	0.000	8.501	0.000	.011	6916.001	2.801
1 TOW PRAC	0.000	0.000	5.401	63.961	67.021	0.000	7.501	0.000	.011	7904.001	2.471
3 TOW PRAC	0.000	0.000	4.241	58.121	67.021	0.000	8.001	0.000	.011	7904.001	2.631
4 TOW PRAC	0.000	0.000	4.241	58.121	67.021	0.000	6.501	0.000	.011	7904.001	2.141
7 TOW PRAC	0.000	0.000	4.241	58.121	67.021	0.000	7.001	0.000	.011	7904.001	2.301
9 TOW PRAC	0.000	0.000	5.401	65.561	67.021	0.000	5.501	0.000	.011	7904.001	1.811
10 TOW PRAC	0.000	0.000	4.241	58.121	67.021	0.000	4.001	0.000	.011	7904.001	1.971
TASKINGS	0.000	0.000	969.731	22794.481	2766.001	0.000	5.001	0.000	5.001	0.000	1.651

Appendix 4 to Annex C (cont.)

24 INF DIV
FT STEWART,GA

PAGE 1

FY UN	EOE + NAME &	AUTHSTR	1100 CIV PAY	1200 CIV BEN	2100 TVV	2200 TRANS	2300 RENTS	2400 PRINT	2500 O/SVC	2650 SSC	26HX HX	26CF CIF
2	1/20 FA	527	0	0	40711	252631	20322	0	2	110111	149204	80370
5	4/40 ARMOR	551	0	0	51139	264136	21240	0	2	123490	156003	84031
21	HHB DIVARTY	247	0	0	22924	118406	9525	0	1	55457	69768	37669
21	AVN CO, 4TH	191	0	0	17727	91561	7365	0	1	42907	54105	29129
15	4TH ENGR BN	973	0	0	90305	466433	37521	0	3	218068	275623	148300
7	1/27 FA	527	0	0	40711	252631	20322	0	2	110111	149204	80370
7	1/39 FA,155S	527	0	0	40711	252631	20322	0	2	110111	149204	80370
6	3/19 INF	897	0	0	70610	406031	32662	0	3	189029	239231	128772
22	24 AG CO	200	0	0	18560	95875	7713	0	1	49029	62024	33401
REQUIREMENTS		4590	0	0	426090	2200335	177000	0	16	1020706	1300217	700000
BUDGET GUIDANCE OR ANNUAL FUND PROGRAM		4590	0	0	426090	2200335	177000	0	16	1020706	1300217	700000
AVAILABLE/SHORTAGE		0	0	0				0				

PAGES 1-4 – TOTAL PROGRAM 2 MISSION $ FOR YEAR EXCEPT FOR "ONE TIME" COST $.

PAGE 1

- ALL FIXED COSTS
- COST DISTRIBUTION FOR UNITS BASED ON STRENGTH

Appendix 4 to Annex C (cont.)

2d INF DIV
FT STEWART,GA

PAGE 2

FY UN	EDE * NAME &	2620 AVGAS GAL	2620 AVGAS $$$	264M MOGAS GAL	264M MOGAS $$$	2640 DIESEL GAL	2640 DIESEL $$$	261X SPARTS	2670 AVSPRS	2680 OTHER	4100 EQUIP	FIXED FLTHRS
7	1/20 FA	0	0	637	287	308	166	442	0	200	70633	0
5	4/40 ARMOR	0	0	2129	958	1112	600	1509	0	3797	73839	0
21	HHB DIVARTY	0	0	1479	666	730	394	1032	0	100	33100	0
21	AVN CO, 4TH	750	368	0	0	0	0	0	1500	0	25596	1500
15	4TH ENGR BN	0	0	2005	930	4590	2473	2075	0	20	130391	0
7	1/27 FA	0	0	584	263	308	166	415	0	20	70633	0
7	1/39 FA,155S	0	0	637	287	473	255	500	0	20	70623	0
6	2/19 INF	0	0	826	371	300	162	532	0	200	113504	0
22	2d AG CO	0	0	500	225	0	0	250	0	10	26902	0
REQUIREMENTS		750	368	8075	3994	7011	4218	7562	1500	4367	615103	1500
BUDGET GUIDANCE OR ANNUAL FUND PROGRAM		750	368	8075	3994	7011	4218	7562	1500	4367	615103	1500
AVAILABLE/SHORTAGE												

INDIVIDUAL PROFICIENCY FLYING

* ALL FIXED (GARRISON) COSTS

Appendix 4 to Annex C (cont.)

24 INF DIV
FT STEWART,GA

PAGE 3

TY UN	EOE + NAME ↓	TOTAL FIXCST	2620 VARAVGAS GAL	2620 VARAVGAS $$$	2640 VARMOGAS GAL	2640 VARMOGAS $$$	264D VARDIESEL GAL	264D VARDIESEL $$$	26IX VSPARES	2670 VAVSPRS	2600 VAPOTH	VAR FHRS
7	1/20 FA	741349	0	0	3738	1602	16465	8091	131063	0	0	0
5	4/40 ARMOR	700031	0	0	2	1	4	2	23	0	0	0
21	HHB DIVARTY	349192	0	0	1607	723	8003	4365	28462	0	0	0
21	AVN CO. 4TH	270157	230010	112705	10209	4574	17276	9329	74722	509374	0	6733
15	4TH ENGR BN	1373039	0	0	1090	494	13298	7191	84639	0	4924	0
7	1/27 FA	741119	0	0	5390	2358	6439	3477	35582	0	0	0
7	1/29 FA.155S	741329	0	0	4220	1899	17389	9347	114063	0	0	0
6	2/12 INF	1191010	0	0	856	385	9533	5148	94294	0	1000	0
22	24 AG CO	281416	0	0	0	0	0	0	0	0	0	0
REQUIREMENTS		6469385	230010	112705	26769	12136	88407	47740	564778	509374	5924	6733
BUDGET GUIDANCE OR ANNUAL FUND PROGRAM		6469385	239250	117233	10125	8156	82109	44302	562438	73500	2633	5402
AVAILABLE/SHORTAGE			9240	4528	- 8094	- 3980	- 6218	- 3358	- 2360	- 435874	- 3291	- 1331

- VARIABLE (TRAINING) COSTS
- FROM BATTALION TRAINING MODEL SOLUTIONS
- NOTE SHORTAGE OF RESOURCES - MUST REDUCE BATTALION RESOURCE LIMITATIONS AND RERUN BATTALION MODELS TO GET TRAINING SOLUTION COSTS W/IN BUDGET/PROGRAM.

Appendix 4 to Annex C (cont.)

24 INF DIV
FT STEWART,GA

FY UN	NAME	VAR REQ'D	VAR ACRE/DAYS	TOTAL VAR$	TOTAL VARFLEX
7	1/20 FA	26	201086	141636	802935
5	4/40 ARMOR	4	998	26	200827
21	HHB DIVARTY	35	7410	34550	382572
21	AVN CO, 4TH	368	9800000	710724	980881
15	4TH ENGR BN	25	39273	97238	1470276
7	1/27 FA	11	496	41417	205536
7	1/29 FA,155S	51	994	123309	868633
6	2/19 INF	6	10031	100777	1271307
22	24 AG CO	0	0	0	981916
REQUIREMENTS		527	10227578	1252677	7722062
BUDGET CHEROKEE OR ARRAY FUND PROGRAM				808342	7277727
AVAILABLE/SHORTAGE				- 444335	- 444335 ← TOTAL SHORTAGE

IMPOSSIBLE/ INPUT ERROR PROBABLY

ANNEX D

(PERFORMANCE REQUIREMENTS, OPERATIONAL SUPPORT/POLICIES, AND TESTING CONCEPTS)

1. OPERATIONAL REQUIREMENTS:

a. The dynamic training environment dictates that TMCS be interactive and flexible, allowing for changes in constraints, requirements and priorities and the documenting of "what if" question results. Once the Battalion Commander can see what his budget guidance will/will not buy him he can begin a trade-off process of changing the inputs and evaluating the alternatives in light of their impact on his previously developed training program. As the actual training is conducted, he must review this process to determine where his unit stands when compared to projected costs. At the Brigade and higher level, the optimization process will be continued to reallocate any unused resources between battalions thus permitting additional training to be scheduled.

b. Responsiveness, 1-3 hours for the complete optimization program, is another requirement as are routinized backup capabilities for data security.

c. Although not designed to operate in a combat zone, TMCS is expected to play a major role during mobilization.

d. Combat, Combat Support and Service Support Battalions will utilize the system.

2. OPERATIONAL SUPPORT/POLICIES:

a. TMCS equipment will be located at Brigades 5-3 and Division G-3 (training) levels, 1-IBM 5100 at each.

b. The equipment operates on standard current, is portable, reliable and maintainable, requiring no specially controlled environment.

c. The principle operators will be training operations NCO's at each level. As these personnel generally have no formal computer training nor is any required, the system must be simple to operate and understand and, in fact is tutorial in nature. A detailed "soldier-proof" operator's manual has been written to support this policy.[38]

d. Built-in simplicity also includes the provisions for minimizing errors thru well designed editing programs, easy restart procedures and visual verification.

AD-A070 302 NAVAL POSTGRADUATE SCHOOL MONTEREY CA F/G 5/1
A MULTIDIMENSIONAL ANALYSIS OF DOA'S BUDGETARY PROCESS USING ZE--ETC(U)
MAR 79 R A BROWN, P C CORREA

UNCLASSIFIED NL

3 OF 3
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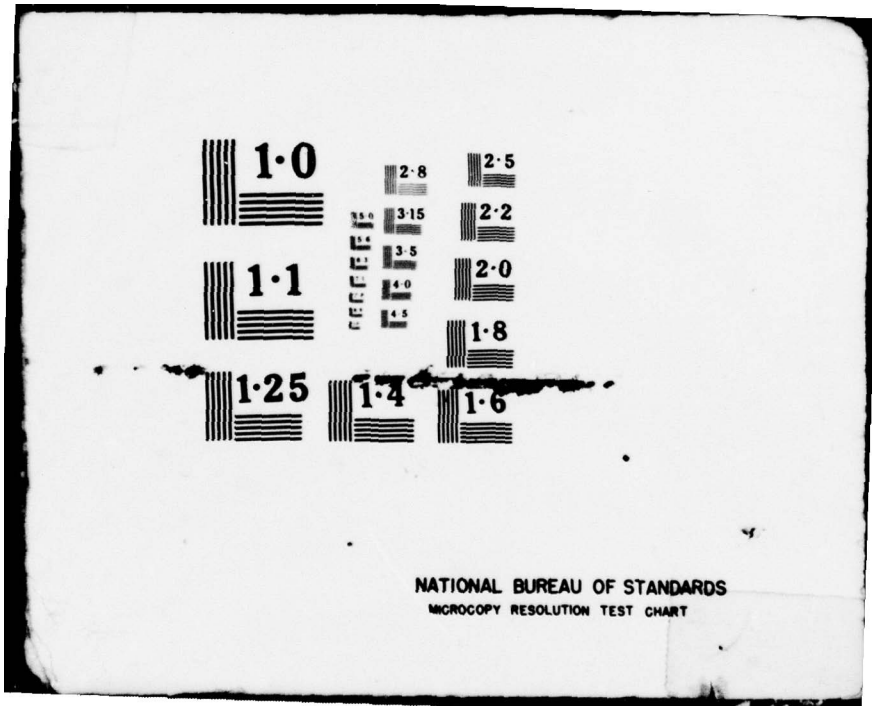
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4·5
NATIONAL BUREAU OF STANDARDS
MICROCOPY RESOLUTION TEST CHART

ANNEX E

(QUESTIONNAIRE SENT TO TMCS TEST UNITS

DOCUMENTS REQUESTED:

1. Copies of pertinent memos, decision papers, DF's, LIOs' etc. concerning TMCS.

2. Copies of TMCS test printouts (output) to date.

3. Copy of Division Reg(s) outlining required annual training; Cdr's Training Guidance, etc., (can be extracts of appropriate pages).

4. Copy of FY 79 Division COBE and/or other command guidance on the budget procedures/process presently in effect (particularly as pertaining to OMA funds; Sched 50s and 40).

5. Any non-confidential command policies, regs, LOIs', etc. dealing with the commander's evaluation on the training portion of Unit Readiness Reports DA 2715's).

NOTE: If any of the following questions are answered in the documents provided above, please indicate the page number and question number on the front of the document and disregard the question unless you feel further comments are necessary - Thank You.

1. Briefly describe the way in which the training budget is presently developed in the Division to include which staff/agencies are involved and how.

2. Is TMCS envisioned to be used in the budgeting process and how? (For example-formulation and justification of ZBB decision packages, use in the incrementation process, etc. and how.)

3. How is TMCS presently used within the Division and what are the future plans for its use?

4. What problems do you have or foresee with TMCS and why?

5. What reporting requirements does TMCS require? (A copy of the latest report would be appreciated.)

6. What interface does TMCS have with the Division Comptroller and/or Command Management Staff? (Names, phone numbers of POC would be helpful.)

7. Are Battalion Field Training Days a good measure of training effectiveness? If so, how; if not, what would you suggest as a better measure of training output and why? Could it be tied into TMCS and how?

8. How are budget constraints for individual units determined at Division Training?

ANNEX F (ZBB/COBE SCHEDULES)

Annex F (ZBB/COBE Schedules)

SCHEDULE 5a — ISSUE OVERVIEW (FY 1979 and FY 1980 Costs)

INSTALLATION	APPROPRIATION	FISCAL YEAR	ISSUE	POC (Name, Tel No)
Ft Apache	OMA	1979	Special Training (JOTC)	Dennis Decrement 544-2486

Ft Apache has a very aggressive Special Training program to prepare its combat battalions and CSS dedicated units for deployment and employment in all types of terrain. This issue concerns Jungle Operations training required by current contingency plans and outlines plans to rotate three Infantry Battalions through the Jungle Operations Training Center for the three week Jungle Warfare Course. The highlight of each iteration is an evaluated field training exercise consistent with the units contingency mission.

INCREMENT SUMMARY — Increments Proposed: 12

Program Element	Current Year Program	Unconstrained Level	1	2	3	4	5	6	7	Enhanced Level	Base (If Applicable) Level
20011	163.0	145.0			10.0					155.0	145.0
20012	80.0	75.5	10.0	35.0						120.5	120.5
202626 A				15.0						15.0	15.0
20626.C				15.0	10.0					25.0	15.0
(Flying Hr Costs)					(10.0)					(10.0)	
(Aviation Costs)											
Total Direct Obligations	243.0	220.5	10.0	65.0	20.0					315.5	295.5
End Strength by Program Element Number											
Total Man-Years											

FORSCOM Form 1051 R — 1388

Annex B (cont.)

SCHEDULE 306 — ISSUE DETAIL (FY 1979 and FY 1980 Costs)

INSTALLATION	APPROPRIATION	FISCAL YEAR	ISSUE	PROGRAM ELEMENT:
Ft Apache	ONA	1979	Special Training (JOTC)	202611

SOS	Current Year Program	Unincremented Level	Increments 1	2	3	4	5	6	7	Enhanced Level	Basic (Unincremented) Level
2100	55.0	56.0								56.0	56.0
2620	108.0	89.0			10.0					99.0	89.0
Total Direct Obligation	163.0	145.0			10.0					155.0	145.0
WO											
OFP											
ENL											
Total Military											
USAR ES/ETP											
USAR MYR											
USNR ES/ETP											
USNR MYR											
DMFN ES/ETP											
DMFN MYR											
Total Civilian ES/FTP											
Total Civilian MYR											
BFTD mortised	100	90								90	90
Flying Hrs	60				10					70	60

FORSCOM FORM 1 MAR 78 106-2-R

SCHEDULE 30c	ISSUE DETAIL NARRATIVE (FY 1979 and FY 1980 CODE)			Reports Control Symbol AFCO 100
INSTALLATION	APPROPRIATION	FISCAL YEAR	ISSUE	PROGRAM ELEMENT
Ft Apache	OMA	1979	Special Training (JOTC)	202611, 202612

1. The adjusted guidance for this issue is $150,000 (202611-Division) and $95,000 (202612-Sep Bde).

2. No alternative methods of accomplishing the mission have been identified. Anything less than training in the Jungle will be unsatisfactory. There are no other facilities or terrain available where Fort Apache units can obtain the quality training required for this important contingency mission.

3. The decremented level will require Fort Apache to send one Infantry Battalion to JOTC without its Combat Service Support units. Professionally, such a course of action would be less than desirable but would not prevent the Infantry Battalion from receiving the training.

4. a. Increment No. 1 restores the funds to send the Combat Service (CSS) units to Panama to train in the Jungle with the unit it would normally support in combat. Training without the CSS units will cause much of the administrative and logistical operations to be "wargamed", which historically has proven to be unwise. To be fully 100% combat ready for this contingency, this Infantry Battalion must deploy with its dedicated support units, who also need the Jungle training to do the job effectively.

   b. Increment No. 2 provides the funds to send one additional Battalion to the JOTC. Contingency plans call for one Brigade size unit with its CSS units to be ready at all times. Current funds will allow for only one trained Battalion (less CSS units). Provision of funds identified in Increment No. 2 will give Fort Apache the ability to respond with two of the required three Jungle Trained Infantry Battalions.

   c. Increment No. 3 provides the funds to rotate a third Infantry Battalion, with its CSS units, to JOTC. If funds are provided for this increment, Fort Apache will be able to fully support its contingency requirement with a Brigade size force for deployment to a Jungle environment anywhere, anytime.

FORSCOM FORM 1 MAR 78 1053 R

Annex P (cont.)

FY 1979/80 COMMAND OPERATING BUDGET ESTIMATE
RANKING SCHEDULE

SCHEDULE S1

INSTALLATION Ft Apache

APPROPRIATION

FISCAL YEAR 1979

Priority	Increment Number	Issue Title	Amount This Increment					Amount Cumulative				
			Dollars	Civ BS	Civ FTP	Civ MY	Military	Dollars	Civ BS	Civ FTP	Civ MY	Military
Decremented Level								$858.5	14	13	12	50
1	1 of 3	Special Training (JOTC)	10.0					868.5	14	13	12	50
2	2 of 3	Special Training (JOTC)	65.0					933.5	14	13	12	50
3	1 of 2	Support of Training	15.0					948.5	14	13	12	50
Basic (Financed) Level								948.5	14	13	12	50
4	1 of 4	Supply Operations	14.0	1	0	1		962.5	15	13	13	50
5	3 of 3	Special Training (JOTC)	20.0					982.5	15	13	13	50
6	2 of 2	Support of Training	15.0					997.5	15	13	13	50
7	2 of 4	Supply Operations	20.0					1,017.5	15	13	13	50
8	3 of 4	Supply Operations	10.0					1,027.5	15	13	13	50
9	1 of 1	Other Maint of Materiel	10.4				6	1,037.9	15	13	13	56
10	4 of 4	Supply Operations	12.0					1,049.9	15	13	13	56
Enhanced Level								1,049.9	15	13	13	56

AFCO FORM AUG 79 291

ANNEX G (FUTURE BUDGET DEVELOPMENTS)

Annex G (Future Budget Changes-PARR/PABE)

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY FORCES COMMAND
FORT MCPHERSON, GEORGIA 30330

9 January 1979

AFOP-TAT

SUBJECT: FORSCOM FY 81-85 PARR/PABE

Commanders, FORSCOM Installations
Commanders, TRADOC Installations

1. HQDA is currently revising the planning, programming and budgeting procedures which will extend the budget estimate to the outyears. Currently, only the current and budget years are addressed. The vehicle to accomplish this is the Program and Budget Estimate (PABE). The PABE will supplement the Program Analysis and Resource Review (PARR) and replace the estimate portion of the Command Operating Budget Estimate (COBE). It will become the primary vehicle for estimating resource (dollars/manpower) requirements for the outyears, i.e., FY 81-85. A follow-on document entitled Command Operating Budget (COB) will be used to request and justify the current and budget years.

2. HQ, FORSCOM must define what is being bought with the undecremented funds provided by DA. Priorities, workload, and quantification data must be included.

3. This letter provides instructions for preparation of the initial input to OMA Program 2 Mission Training Issues of the FORSCOM FY 81-85 Program and Budget Estimate (PABE).

4. The PABE, unlike the PARR in years past, will require field input. The PABE requires that training issue dollars be displayed by type unit (Program Element), fiscal year, and workload to include numbers of BFTD, flying hours, FTX's, and EDRE's. A display of elements of expense is not required. Although the PABE does not require the amount of data required in the old Command Operating Budget Estimate (COBE), the degree of detail required for the training issues is such that the input cannot be staff generated at HQ FORSCOM.

Annex G (cont.)

AFOP-TAT
SUBJECT: FORSCOM FY 81-85 PARR/PABE

5. The attached matrix (Incl 1) provides the revised training issues that will be used for the FY 81-85 PABE. These issue titles replace the issues used in previous years (on and off-post training, special training, etc.). Addressees are requested to apply the current FY 79 AFP (P2 Mission) and workload factors to each of the new issues on the matrix for FY 1979. This information will be further staff developed using the new issue titles by HQ FORSCOM to satisfy the requirements for the FY 81-85 PABE. One matrix is to be prepared for each division, separate brigade and separate battalion. An example matrix is provided at Incl 2.

6. Input should be addressed to AFOP-PO and is required NLT 26 Jan 79.

7. HQ, FORSCOM points of contact are LTC Imes, AV 588-3494 or CPT Smalser, AV 588-3049, primary and MAJ Etheridge, AV 588-4242, alternate.

FOR THE COMMANDER:

2 Incl
as

ROBERT HAZDANE
Major General, GS
Deputy Chief of Staff,
Operations

Annex G (cont.) FY 79

UNIT: 11th Inf Div (M)

PROGRAM ELEMENT: 202611

INSTALLATION: Ft Apache

P2M ISSUES	DOLLARS	BFTD	FH	CPX/FTX/EDRE ITERATIONS
1. Attain/Maintain Bn Proficiency in Soldiers Manual/Level 1 ARTEP Tasks	$11,250	1541	4000	25 bn FTX
a. Individual through Company Proficiency (70% of issue cost)	$7,875	1078	3000	N/A
b. Bn Proficiency (100% of issue cost)	$3,375	463	1000	25 Bn FTX
2. Conduct Deployability Employability Training for High Priority Forces	$3,472.5	471	1000	23 bn EDRE 1 bn FTX 2 bde FTX
a. Conduct static load exercises for each sep dep/plt/co and bn	$65	66	0	N/A
b. Conduct at least one EDRE for each sep det/plt/co and bn	$632.5	115	500	23 EDRE
c. Conduct Bn CALFEX	0			
d. Conduct CATTS/CAMMS Exercise	0			
e. Bn TF rotation to JWC	$400	40	0	1 BN
f. Bn TF rotation to AK (RBOT)	0			

INCL 2

Annex G (cont.) FY 79

UNIT: 11th Inf Div (M)

PROGRAM ELEMENT: 202611

INSTALLATION: Ft Apache

P2M ISSUES	DOLLARS	BFTD	FH	CPX/FTX/EDRE ITERATIONS
g. Bde TF rotation to Ft Drum	0			
h. Bde TF rotation to Ft Irwin (NTC)	$1660	120	250	1 Bde
i. Conduct Bde EDRE/Off-post FTX	0			
j. Participate in Bde JTX/JRX	$715	130	250	1 Bde
k. Participate in Div EDRE/ Off-post FTX	0			
l. Participate in Div JTX/JRX	0			
3. Conduct C&C/Sustainment Training	$334	55	500	12 Bde CPX 4 Div CPX 3 3de FTX
a. Bde CPX	$30	3	100	12
b. Div/Corps CPX	$40	4	200	4
c. Bde FTX	$264	48	200	3
d. Div FTX	0			

Annex G (cont.) FY 79

UNIT: 11th Inf Div (M)

PROGRAM ELEMENT: 202611

INSTALLATION: Ft Apache

P2M ISSUES	DOLLARS	BFTD	FH	CPX/FTX/EDRE ITERATIONS
4. Conduct Special Training	$60	4	0	1 CO FTX
a. Indiv/unit training at NWTC	$60	4	0	1 CO
b. Unit amphib training	0			
c. Conduct Unit Exchange with Foreign Countries	0			
d. Contingency mission training	$148	27	0	NA
5. Support Other Army Activities	$946	172	1000	NA
a. ROTC Summer Camp	$660	120	600	NA
b. Service Schools				
c. Other TRADOC				
d. Affiliation/Roundout	$66	12	200	NA
e. Partnership Div				

Annex G (cont.) FY 79

UNIT: 11th Inf Div (M)

PROGRAM ELEMENT: 202611

INSTALLATION: Ft Apache

P2M ISSUES	DOLLARS	BFTD	FH	CPX/FTX/EDRE ITERATIONS
f. ACSAT	$220	40	200	NA
g. Other RC				
h. USMA				
i. R/D Program				
j. Other (specify)				

ANNEX H (TRAINING OBJECTIVES IMPLEMENTING DOCUMENTS)

Annex H (FORSCOM Circular 350-8)

*FORSCOM Cir 350-8

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY FORCES COMMAND
Fort McPherson, Georgia 30330

FORSCOM Circular
No. 350-8

26 April 1977

Expires 26 April 1978
Training
FORSCOM TRAINING READINESS PROGRAM

1. PURPOSE.

a. To establish goals, objectives, and standards to be used to identify training requirements and to develop training programs for FORSCOM units.

b. To provide training guidance that will assist commanders in appraising unit training status.

c. To assist commanders in managing unit training programs and training assets.

d. To assist commanders in identifying those areas affecting training where additional resources are needed.

2. REFERENCE: AR 220-1 with FORSCOM Supplement 1, Unit Readiness Reporting.

3. APPLICABILITY.

a. This Circular applies to all readiness reporting units of the Active Component and is general training policy guidance for the Reserve Components.

b. The training events and standards outlined by this circular provide a guide for the evaluation and management of mission related training. Monitoring these events will enable the commander to evaluate the efficiency and effectiveness of past training and to assess future training needs.

4. BACKGROUND.

a. Over the years, changes in the training environment have acted to make the training of units more difficult (e.g., higher costs, greater maintenance requirements, and increased personnel turnover), and there has been an expanding need for unit commanders to consider different factors in arriving at their evaluation of training readiness.

b. Nonuniformity of subjectivity in training data reported to this and higher headquarters has caused an inconsistency in the ability to assess a unit's capability to accomplish its wartime mission. This circular is designed to establish measurement criteria which will assist unit commanders in making their assessments and to contribute in some measure to a consistency of evaluations.

5. DEFINITIONS.

a. Operating Strength. The assigned personnel strength of units, except those personnel "in transit." The term "assigned strength" is synonymous with operating strength for readiness reporting purposes.

b. Qualified. For training indicators that address individual crew qualifications, qualified is defined as meeting the standards of proficiency outlined in AR 350-4, soldier manuals, field manuals, and ARTEP.

c. Authorized/Designated Crews. For indicators that address crew weapons qualification/familiarization, the term designated crews applies when the TOE/MTOE does not identify specific crew members. In those instances, crews will be designated by the unit commander. An authorized crew is one identified by TOE/MTOE.

*This circular supersedes Draft FORSCOM Cir 350-8, 6 Oct 76.

Annex H (Cont.)

FORSCOM Cir 350-8

d. Mission Essential. For indicators that address mission essential items of equipment, mission essential is defined as equipment, which when missing or inoperable, prevents mission accomplishment. Determination of mission essentiality is to be made by the unit commander.

6. DIVISION AND SEPARATE BRIGADE TRAINING CONSIDERATIONS.

a. Appendix A identifies mission related training readiness indicators and suggests the minimum frequency with which these events will be accomplished and the standards or qualification to be maintained routinely.

b. These indicators have been validated through field testing and will assist commanders in achieving a more objective/realistic evaluation of unit training status.

c. Training readiness indicators within Appendix A apply to all battalions of divisions, separate brigades, and armored cavalry regiments (ACR). The inclosures to Appendix A identify mission related training readiness indicators by type unit.

7. SEPARATE BATTALIONS. Appendix B (to be published).

8. COMMANDER'S TRAINING READINESS CONSIDERATIONS. See Appendix C.

9. ADMINISTRATIVE PROCEDURES. Commanders may use this circular to assist in determining their training REDCON. There is no requirement to forward the details of these judgments to HQ FORSCOM.

(AFOP-TAT)

Annex H (Cont.)

FORSCOM Cir 350-8

APPENDIX A

TRAINING READINESS INDICATORS
ALL UNITS

TRAINING EVENT	MINIMUM MAINTENANCE REQUIREMENT	FREQUENCY
1. Individual Training Considerations		
a. Individual weapons qual/fam	90% of operating strength	Annually
b. NBC proficiency testing	90% of operating strength	Semiannually
c. Successful completion of the PCPT	90% of operating strength	Annually
2. Crew/Section Training Considerations		
a. 7.62mm machine gun qual/fam	80% of authorized/designated crews (gunner and asst gunner)	Semiannually
b. .50 cal machine gun qual/fam	80% of authorized/designated crews (gunner and asst gunner)	Semiannually
c. PM service performed	10% or less overdue	LAW Prescribed publication (time/miles/hour)
d. Percent of time assigned maintenance personnel have spent performing MOS related duties.	Above 60% of maintenance personnel performing MOS related duties.	Routine
3. Unit Training Considerations		
a. FTX participation	80% of operating strength	Quarterly
b. EDRE participation	80% of operating strength	Annually

NOTE 1: To be considered fully combat ready, units must accomplish the training events outlined above within the frequencies indicated.

NOTE 2: Minimum requirement is to be interpreted as the percent of operating strength on any given day which has accomplished the training event specified. Thus today, 90% of the men assigned must have qualified with their individual weapon within the past year.

NOTE 3: Minimum requirements for unit training pertains to minimum percentages of participating assigned personnel.

FORSCOM Cir 350-8

TRAINING EVENT	MINIMUM REQUIREMENT	FREQUENCY
c. Scout Platoon.		
(1) Conduct a night reconnaissance patrol IAW ARTEP training and evaluation standards.	At 80% operating strength	Semiannually
(2) Conduct a screening mission IAW ARTEP training and evaluation standards.	At 80% operating strength	Semiannually
(3) Conduct a route and area reconnaissance mission IAW ARTEP training and evaluation standards.	At 80% operating strength	Semiannually
(4) Conduct a rear area security mission IAW ARTEP training and evaluation standards.	At 80% operating strength	Semiannually
d. Heavy Mortar (4.2") Platoon. Provide indirect fire support IAW ARTEP training and evaluation standards.	At 80% operating strength	Semiannually
e. 81mm Mortar Platoon. Provide indirect fire support IAW ARTEP training and evaluation standards.	At 80% operating strength	Semiannually
f. Antitank Platoon. Provide anti-tank fire support (REALTRAIN) IAW ARTEP training and evaluation standards.	At 80% operating strength	Semiannually

NOTE 1: This inclosure is applicable to infantry and mechanized infantry units. Training events will be accomplished in accordance with Level 1, ARTEP training and evaluation standards in ARTEP 7-15, 7-45, and 71-2 for AC units and appropriate level for RC units.

NOTE 2: Live fire events for TOW, DRAGON, and REDEYE systems are required only subject to missile availability. Crews/teams not able to conduct a live fire due to missile shortages will qualify/familiarize on the appropriate simulator/trainer at the frequency specified.

TRAINING READINESS INDICATORS
INFANTRY UNITS

TRAINING EVENT	MINIMUM REQUIREMENT	FREQUENCY
1. Crew/Section Training Considerations.		
a. 81mm mortar qualification (live fire exercise or gunner's test and pneumatic trainer/SABOT subcaliber device).	All crews - Live fire exercise - Gunner's test and pneumatic trainer/SABOT subcaliber device	Semiannually Each quarter in which live fire is not conducted
b. 4.2" mortar qualification (live fire exercise or gunner's test and pneumatic trainer/SABOT subcaliber device).	All crews - Live fire exercise - Gunners test and pneumatic trainer/SABOT subcaliber device	Semiannually Each quarter in which live fire is not conducted
c. 90mm recoilless rifle/DRAGON qualification/familiarization (live fire exercises or subcaliber device/LET).	All crews - Live fire exercise - Subcaliber device/LET	Semiannually Each quarter in which live fire is not conducted
d. 106mm recoilless rifle/TOW qualification/familiarization (live fire exercise or subcaliber device/M70 trainer).	All crews - Live fire exercises - Subcaliber device/M-70 trainer	Semiannually Each quarter in which live fire is not conducted
e. Mechanized/scout vehicle crews (M113/M114/M151). Participated in a .50 cal/M60 machine gun live fire exercise LAW ARTEP training and evaluation standards.	All crews - Driver and gunner minimum	Semiannually
f. REDEYE Section.		
(1) REDEYE qualification (M-76 tracking head trainer).	All teams	Each quarter in which live fire is not conducted
(2) Provide air defense support LAW ARTEP training and evaluation standards.	All teams	Semiannually
g. Ground surveillance Radar Section. Provide ground surveillance support LAW ARTEP training and evaluation standards.	All teams	Semiannually
2. Platoon Training Considerations.		
a. Communications Platoon. Support tactical operations LAW ARTEP training and evaluation standards.	At 80% operating strength	Quarterly
b. Rifle Platoons.		
(1) Conduct movement to contact/ hasty attack LAW ARTEP training and evaluation standards.	All platoons at 80% operating strength	Semiannually
(2) Conduct active defense LAW ARTEP training and evaluation standards.	All platoons at 80% operating strength	Semiannually
(3) Conduct deliberate attack LAW ARTEP training and evaluation standards.	All platoons at 80% operating strength	Semiannually

Inclosure 3

Annex H (Ft Ord Circular 350-19)

DEPARTMENT OF THE ARMY
HEADQUARTERS
7TH INFANTRY DIVISION AND FORT ORD
Fort Ord, California 93941

Circular
No. 350-19

29 August 1978

Expires 1 October 1979

Training

TRAINING GUIDANCE FY 79

1. PURPOSE. This circular provides the specific training subject areas and objective which commanders will incorporate into their master training plan for FY 79. Training policies and standard management practices are addressed in Ft Ord Reg 350-1 (Revised TBP).

2. APPLICABILITY. This circular applies to all units assigned to the 7th Infantry Division and Fort Ord.

3. GENERAL.

a. Training emphasis will focus on individual thru platoon training. The majority of the total prime time training will be given to the Company Commander. This is interperted to be 60 percent of total major unit/separate battalion prime time training days. Lesser amounts of MUC/battalion training time will be used for leadership training. It is envisioned that the training mode for leaders will be the CPX, NRX, and TENT. Also, that the major ARTEP tasks will be addressed during leader training so as not to dilute individual thru platoon level training. Finally, the least amount of MUC/battalion training will be directed to the FTX and Co/Bn ARTEP.

b. Commanders will provide the resources for training, and through coaching and supervision, insure quality control. Commanders will also accelerate the professional development programs of their NCOs and junior officers.

c. The concept of Prime Time Training (PTT) is a management tool to achieve maximum attendance at training. The 7th Infantry Division's objective is to have 80% of the present for duty strength physically present for PTT. Unit integrity will be maintained with all sub-elements functioning as a team.

(1) The entire Training Cycle is designated as Prime Time Training for Combat and Combat Support (CS) units. Additionally, all ARTEP's are Prime Time Training.

(2) Training managers of Combat Service Support (CSS) units will conduct a minimum of one 48 hour Field Training Exercise (FTX) quarterly. This quarterly FTX will fulfill CSS Prime Time Training requirements.

4. DIVISION TRAINING OBJECTIVES. It is envisioned that future combat for the 7th Infantry Division will include the defense, night attack, night withdrawal, and movement to contact/hasty attack. However, there are other tasks which trainers must consider. The guidance in this directive plus each commander's personal assessment will be used in developing individual and collective training programs. In anticipation of limited resources, training managers must continue to use all training sources available, i.e. ARTEP, FTX, CPX, TEAT, and NRX. CS and CSS commanders will orient their training programs to support infantry objectives.

5. ADDITIONAL TRAINING GUIDANCE. 7th Infantry Division and Fort Ord and FORSCOM 350 series training regulations, circulars, letters and letter of instruction provide training policies, directives, and suggestions on the management and conduct of training. To insure uniformity of effort, these paragraphs address selected subject areas which are to be incorporated into unit master training plans.

a. ARTEP Guidance. As a goal, external battalion level ARTEPs should be administered once every 18 months, however, it is imperative that commanders understand that the ARTEP is an evaluation, not a test, and that the 18 month schedule can be adjusted if, in the commander's estimate, little would be derived if the evaluation were conducted on schedule. It is envisioned, however, that one platoon level and two squad level infantry ARTEPs will be conducted annually.

b. Live Fire Exercises. As an objective and within resource constraints, units will conduct offensive and defensive squad and platoon live fire exercises.

c. Night Operations. During the Training Cycle, commanders will exercise their units for a minimum of 50 percent of total field days with emphasis on night operations. Night operations are interpreted as 1) Training of individual skills during the hours of darkness or 2) The extended operations of a unit in a collective training environment, i.e. FTX/CPX.

d. NBC Training. During the preparation and execution of all CPXs and FTXs of 72 hours or longer, a minimum of 6 hours will include a scenario that places the unit in a total NBC environment and requires

it to take protective measures, execute decontamination procedures, monitor and report as appropriate.

e. Military Operations in Urban Terrain (MOUT). Light infantry battalions can expect to be employed in MOUT in future wars. It is suggested that commanders consider use of local communities for TEWT and MOUT war games to exercise this contingency. Off post MOUT facilities, such as exists at Camp Pendleton, may also be incorporated into training plans.

f. War Games Exercises (WRX). The Gaming and Simulations Program Facility (GASPF), Bldg T-128, offers a variety of aids to assist units in achieving proficiency in many collective unit ARTEP tasks. The GASPF provides an excellent opportunity for commanders to exercise leader oriented tasks through the use of WRX. Commanders at all levels should actively utilize the GASPF as an integral part of their master training plan.

g. Individual and Crew-Served Weapons Proficiency. Commanders will insure that each soldier with less than 20 years of service, completes annual qualification. Personnel with 20 years or more service will familiarize with their assigned weapon annually. Crew-served weapons qualification will be conducted at intervals not to exceed 12 months. Each crew-served weapon, i.e. M-60 and .50 caliber machine gun will have at least one qualified member. Results of this qualification/familiarization will be forwarded to AG to be entered on personnel records.

h. Professional Development. Battalion level training managers must establish officer and NCO professional development programs with the goals of increasing professional education, knowledge and understanding of potential opposing forces, job proficiency in garrison and tactical operations. Each unit's program should be developed to meet the specific needs of that unit's officers and NCOs. Training managers should recognize that recently assigned enlisted personnel and newly commissioned officers have been given only the most basic instruction at service schools and must be intensively trained for the critical tasks that each will be expected to perform. For noncommissioned officers, the guidance is articulated in CBG #30, Professional Development Program for NCO's. For officers, the objective is to be proficient in applicable skill level 3 individual tasks and proficient in the management of collective missions contained in the ARTEP.

i. Combating Armor Training. Individual and unit proficiency in anti-armor warfare are essential to the survivability of the 7th Infantry Division on the next battlefield. Individual and anti-armor weapons

crew proficiency is paramount in maximizing the capability to defeat enemy armor/mechanized vehicles. Leader classes in anti-armor defense must be emphasized to retain proficiency and awareness in this critical area. Command emphasis in training anti-armor weapons crews is essential

j. Intelligence Training. Proficiency of the individual soldier, small units and military intelligence personnel will be programed and evaluated during all command post, field training, and joint exercises. Intelligence training of the individual soldier will concentrate on the areas of observation and reporting, prisoner of war handling, recognition of threat vehicles and formations, camouflage, and signal security. Training managers are encouraged to make maximum use of opposing forces, as applicable, to assist in evaluating the reporting of information of intelligence value. The OPFOR 3 day Orientation Training Program will begin 1 Oct 78. All infantry companies and reconnaissance platoons will participate in the program.

k. Physical Readiness Training. Except for the weekly 3 mile conditioning run PT should be varied to uniformly exercise all parts of the body. Items for consideration include: Guerilla exercises, grass drills road marches, organized athletics, obstacle and confidence courses, drill and ceremonies, droonproofing, orienteering, and practice PT tests. Additional guidance may be found in FO Reg 350-1 (Revised TBP).

l. Communications Training. Training managers will emphasize the realities of radio and wire communications in an active electronic warfare environment. Communications training exercises (FM & RATT) will be conducted IAW FO Cir (TBP).

m. Expert Infantry Badge (EIB) and Expert Field Medical Badge (EFMB) Tests. The EIB/EFMB tests demand a comprehensive knowledge of both MOS related and basic soldiering skills. Training managers for infantry units will review the EIB Study Guide and Soldier's Manuals for applicable infantry subjects. Unit training managers whose units contain medical personnel will review applicable basic soldiering skills manuals. EFMB testing will normally be conducted semi-annually and sponsored by the 7th Medical Battalion and the 56th Medical Battalion alternately. ACofS, G3 will be the proponent for EIB testing.

n. SQT Testing. Commanders will develop SQT preparation training for MOS within their units. Improved individual training integrated into the yearly collective training program will do more to prepare soldiers for SQT than "crash" training sessions. Such optimization of short range goals will be impossible to accomplish as the number of SQT's increases in the year ahead. Common sense, balance, and good

training estimates will lead to sound training programs. It may be useful to give special emphasis to individual training a week or two prior to the conduct of the SQT, but such an emphasis cannot substitute for a year round program.

o. Maintenance Training. Maintenance is training just as tactics is training. Maintenance training is achieved through daily activities in garrison and field, formal classroom instruction and OJT. Off post MOS training programs, on post schools, and unit expertise are available for training assistance. Formal maintenance training programs, including properly planned and conducted motor stables will be incorporated with the normal maintenance time the commanders integrate into their weekly training schedules. Emphasis will be placed on the application of the Army Maintenance Management Systems (TAMMS) and the preparation, evaluation and analysis of a unit's material readiness.

p. Learning Center/Training Extension Course (TEC) System. Each battalion/squadron will have a designated learning center to provide accessible, self-paced, multimedia instruction to trainers and individual soldiers. Command emphasis is necessary to insure that learning center programs are MOS inclusive. Commanders will insure wide dissemination of the learning center availability and capability and monitor its usage.

q. Electronic Warfare. Unit training must encompass all actions that will enhance its capability to operate in a hostile Electronic Countermeasures (ECM) environment. The aspects of electronic warfare jamming, deception, electronic counter, countermeasures will be incorporated into FTXs, CPXs, and TEWTs.

r. Training for Major Units Staff. The annual FTXs with battalions do not provide sufficient time to properly exercise brigade, DISCOM and Division Artillery Headquarters staff in their tactical responsibilities. War games, TEWTs, simulations, MAPEXs, CPXs, and COMEXs are valuable tools by which these headquarters can gain and maintain their tactical proficiency. When feasible, representatives from CS/CSS units should be included in CPXs to add realism.

s. Drownproofing. Each battalion/separate company will develop a drownproofing SOP which indicates, as a minimum:

(1) All weak and non-swimmers will be indentified.

(2) Prior to any water related exercise, all weak and non-swimmers will be drownproofed.

(3) Drownproofing POI. USAIS Pamphlet, Water Survival Training, (Drownproofing) provides guidance for formation of a drownproofing POI.

t. Post Schools. Numerous on post courses have been developed to assist officers, NCOs and enlisted soldiers in their professional development and MOS proficiency. These courses will not necessarily be scheduled to coincide with the master training calendar cycles. Units will abide by the quotas and schedules published by the DPT. There will be no quotas established for civilian education programs; however, commanders will insure that necessary skill courses are made available to those soldiers who do not read or write to the level required to use current training liturature.

u. Training Aids. Training aids used to enhance the conduct of training may be obtained as prescribed in Training Aids Service Center Catalog. In addition, DA Pam 310-12 and DA Pam 108-1 provide a reference of training aids available within the TASC inventory.

v. CDEC Support. CDEC experimentation support is a mission assigned by FORSCOM. The ACofS, G3 will assign support requirements for each experiment to major units/separate battalions, based on requirements of the experiment test plan and other unit commitments. Every attempt will be made to limit support mission to 90 days; however, due to the nature of many experiments and the fact that experiments frequently overlap, this will not always be possible.

w. Air Assault Operations. Air assault (airmobile) operations will involve tactical air movement of troops, supplies, and equipment in day, night, and all weather operations. Training will stress planning and coordination between aviation and ground elements. Whenever possible, combined training of aviation units and ground units will be incorporated into all periods of field tactical training.

x. Operations Security (OPSEC). OPSEC includes deception, physical security, signal security (SIGSEC), and information security. OPSEC will be incorporated into all training and at all levels, with the purpose of insuring that all troops are familiar with the measures which must be taken to prevent the disclosure of information containing intelligence indicators that can be used to degrade combat effectiveness.

y. Emergency Deployment Readiness Exercise (EDRE) and Evaluation. ACofS, G3 is responsible for the conduct of no-notice tests appropriate to a unit's mission. Commanders must insure that an adequate program exists to update, on a continuous basis, all records required for POR qualification. Specific guidance is in FO Reg 525-1 (DRAFT).

z. Training Holidays/Compensatory Time.

(1) The following public holidays will be observed as training holidays during the remainder of FY 78 and FY 79:

(a) Labor Day: 4 September 1978

(b) Columbus Day: 9 October 1978

(c) Veteran's Day: 10 November 1978

(d) Thanksgiving: 23 November 1978

(e) Christmas: 25 December 1978

(f) New Year's Day: 1 January 1979

(g) Washington's Birthday: 19 February 1979

(h) Memorial Day: 28 May 1979

(i) Independence Day: 4 July 1979

(j) Labor Day: 3 September 1979

(2) Units may declare an Organizational Day annually on the organization's activation anniversary. Appropriate ceremonies and activities will be scheduled in conjunction with the holiday.

(3) Pay day activities will be scheduled for end-of-month pay only and may include:

(a) Unit Ceremonies/Parades.

(b) Musters.

(c) Inspections.

(d) Leave and Earning Statement Review.

(e) Review of Personnel Readiness Folders.

(f) Review of Personnel Data Control (PDC) Card.

(g) Review of Innoculation Records.

(h) Inspection of Identification Tags and Identification Cards.

(i) Mandatory Training Classes.

(j) Professional Development Programs for Officers and NCOs.

(4) The Christmas holiday period will be 19 December 1978 - 2 January 1979.

(5) The Week of the Bayonet will be conducted 16-20 October 1978. All units will be in Support or Mission Support Cycle for that week and the week prior.

(6) Compensatory time may be granted by major subordinate, battalion, and separate company commanders for their subordinate units for activities which require personnel to operate continuously for sustained periods of time as follows:

(a) Following night exercises or training terminating after midnight, the morning after the exercise may be designated as compensatory time.

(b) Following exercises or training involving continuous operations exceeding a 24 hour period, one day of compensatory time may be given.

(c) Compensatory time should be given as soon after the applicable activity as outlined in 6(a) or 6(b) above to insure that the soldiers perceive why they are receiving compensatory time. Compensatory time will not exceed 96 hours when taken in conjunction with a holiday weekend.

(d) Compensatory time may also be granted to individuals who, because of duty requirements, were unable to observe a training holiday or a weekend.

(7) Any compensatory time involving a battalion size unit or separate company must be formally requested for approval to the next higher commander.

6. TRAINING MANAGEMENT & ADMINISTRATION.

a. Master Training Plan.

(1) Mission Cycle (Infantry/Field Artillery). Units during the Mission Cycle will provide the personnel and equipment requirements for Post/Division Contingency Missions (ARF, Garden Plot, earthquake, etc). Whenever possible, infantry ARTEPs, if scheduled, will be during the last two weeks of the mission cycle in order to provide a pre-test for the Training Cycle and cause minimum disruption during the Mission Cycle. External ARTEPs may also be combined with an FDRE and conducted during this cycle. Unit/individual on post training will be conducted during this Cycle. Units in the Mission Cycle may be tasked for post support

Annex H (Cont.)

when the assets of the primary support units are exhausted. In the event of training deficiency as a result of CDEC support and other unprogramed requirements, select units may request from ACofS, G3 to schedule off-post training. However, this will consist of no more than two-thirds of a major unit. The remaining one-third should be identified and prepared to furnish support requirements that exceed the capabilities of the primary support unit. Off-post platoon and company size Adventure Training will normally be conducted during this cycle.

(2) Training Cycle (Infantry/Field Artillery). For Training Cycles, commanders will develop training programs designed to provide maximum Prime Time individual thru platoon and leader training. Off-post training and field artillery ARTEPs will normally be conducted during these Cycles. Due to budget limitations and fuel shortages, off-post periods should be a minimum of two weeks in length. Emphasis should be placed on providing maximum personnel for training. Units will not be tasked to fill post support requirements during these Cycles* The infantry brigade in the training Cycle will assume responsibility for contingency missions (Augmentation Readiness Force (ARF), etc) when no brigade is in the Mission Cycle.

(3) Support Cycle (Infantry/Field Artillery). Units during the Support Cycle will provide the personnel and equipment for post support functions, guard and funeral detail. Although small unit and individual training may be conducted, off-post training will not be scheduled. Annual General Inspections (AGIs) will be conducted during this Cycle. Changeover for post support requirements such as guard and funeral details normally occur at 0900 hours Monday.

(4) Mission Training (Division Support Command, Headquarters Command, Separate Battalions). During Mission Training Cycle, units will provide their normal CS/CSS attachments. Unit unique missions will be retained; however, units will not be tasked to provide personnel and equipment for post support functions. Prime Time Collective Training both on and off post should be conducted during these cycles. External ARTEPs and EDREs will also be scheduled. Off-post platoon and company size Adventure Training may be conducted during this Cycle.

(5) Mission Support (Division Support Command, Headquarters Command, Separate Battalions). Units will make every effort to provide their normal CS/CSS attachments as well as retain unit unique contingency missions. Personnel and equipment requirements for post support, guard and funeral detail will also be provided. Individual on post training

*Exception: When the support requirement represents a unique capability of the unit.

may be conducted; however, off-post training will not be scheduled. AGIs will also be conducted during these cycles. Changeover for post support requirements such as guard and funeral details will normally occur on Monday at 0900 hours.

b. Scheduling. Priorities for fixed ranges, firing positions and training areas are: 1-External ARTEPs. 2-Training/Mission Training Units. 3-Mission Units. 4-Support/Mission Support units. Requests for off-post training areas and facilities must be submitted by all units 90 days prior to the beginning of the cycle. Requests must be realistic and not just an attempt to block off training areas until training schedules or programs can be developed.

c. Training Administration. Training Management and Administration (TMA) will be performed at battalion level in accordance with TC 21-5-7. Listed below are the records required for a training program:

(1) General.

(a) Every commander (CSMs and 1SGs, too) must be intimately familiar with and have on their personal bookshelves the following:

1 The Soldier's Manual Series (for the high density MOS' in the unit).

2 The unit ARTEP.

3 Manuals for each major weapon system and/or vehicle in the unit.

(b) TC 21-5-7 (December 1977) is the best reference on training management. This outstanding work, when read and heeded by company and higher level commanders, becomes the bible for staff officers concerned with training management.

(c) Commanders, CSMs and 1SGs need an up-to-date index of available TEC lessons which are applicable to their units.

(2) Battalion or Separate Company:

(a) Quarterly Training Forecast, Cycle Highlights, and Weekly Training Plan (FO Reg 350-1, App A).

(b) Maintain FORSCOM Training Notes Nos. 1, 4(c), 3 and 4 (FORSCOM Training Notes).

(c) Maintain consolidated ammunition forecasts (FO Reg 700-1).

(d) Maintain a drownproofing SOP.

(e) Training Files for the current and previous year (AR 340-2).

*(f) Maintain all required/appropriate SOPs.

*(g) Maintain a Master Training Calendar (FO Reg 350-1, App A).

(h) Maintain adequate training reference library with required publications (AR, DA Pam's ASUBSCD, DA Cir's, MTOE, FMs, ARTEPs, and appropriate FORSCOM and Ft Ord publications) and all current changes posted to include a Weekly Bulletin file that reflects revisions, extensions, and expirations of Ft Ord Circulars utilizing DA Form 17 (FO Reg 350-1, App B).

(i) Maintain a copy of next higher command's training program (FO Reg 350-1, para 6c).

(j) NBC Defense Officer and two NBC Defense NCO's appointment DF with certificates of graduation for personnel who attended an 80 hour NBC Officer/NCO course of instruction within the last three years. (FO Reg 220-1).

(k) Maintain a file of 7th Infantry Division Training Notes and all Commander's Bayonet Guidances.

(l) All REFORGER units plan and maintain programs for assumption of operational missions upon deployment to Europe (FORSCOM Reg 350-6).

*(m) Maintain a file of weekly training plans (file 1002-03) (FO Reg 350-1, para 5d(3)).

(n) Annotation of PT Cards, DA Form 705, to indicate completion and scores on semi-annual physical training test and to indicate completion/non-completion of personnel in unit for the 6/12 mile foot march (also 25 mile foot march for all infantry units and reconnaissance squads of 2/10 Cav) (AR 600-9 & FO Reg 350-1, App B Incl 1).

(o) A file of all training evaluations for inspections e.g. file 1002-03 for Bn/Bde/Div inspections and file 102-03 for IG inspection extracts. (FO Reg 350-1, App G and AR 340-2, Chap 5).

(p) Training Aids Account Card from TASC (AR 108-2).

(q) Maintain FORSCOM Training Guidelines FY 79 (FORSCOM Training Guidelines).

*Applicable at Company Level as well.

(r) Appointment DF for company level decontamination team consisting of one NCOIC (may be one of the NBC NCOs) and a minimum of six other enlisted personnel. (The decontamination team will be augmented by one of more survey teams). (FO Reg 220-1).

(s) Maintain a system to indicate completion of annual NBC individual proficiency test and mask confidence exercises. (FO Reg 350-1, App P).

(t) Each TOW Missile fired will be recorded on DA Form 4142-R, TOW Missile Firing Data Report, and submitted to MIRCOM thru G3 Training; this includes both inert and HE missiles (AR 702-5).

(u) OJT material (for DA directed OJT's that will result in the award of a PMOS) when needed for conduct of training:

1 MOS Job Book (available from DPT Tng, SQT).

2 Soldier's Manual (or an eight week master training program if the Soldier's Manual has not been published).

3 MOS job description from AR 611-201.

4 Record of training and tests will be recorded in the MOS book.

5 Individual reflected as code 9996 on UMR (FO Reg 350-1, App E).

(v) Maintain a system to indicate attendance at required training subjects. The following unit training will be posted thru AG to the Military Personnel Qualification records:

1 Military Justice Classes (Course B).

2 Benefits of Honorable Discharge Classes.

3 Weapons Qualification/Familiarization.

(3) Company:

(a) Records (FO Forms 1-67) will be kept to indicate NCO attendance and participation in the Professional Development Program (C&G #30).

(b) Appointment DF for company level decontamination team consisting of one NCOIC (may be one of the NBC NCOs) and a minimum of six other enlisted personnel. (The decontamination team will be augmented by one or more survey teams.) (FO Reg 220-1).

(c) Appointment OF for school trained Field Sanitation Team (AR 40-5).

(d) Appointment OF for primary and alternate survey/monitoring teams for each M15A2A chemical agent detector kit, IM-174 series radiacmeter, AN/PDR-27 series radiacmeter, and chemical agent automatic alarm authorized (FO Reg 220-1).

d. Training Plans.

(1) The training schedules will be replaced by the training plan. The company will formulate and keep a training plan which consists of a handwritten schedule of training listing; TIME, GENERAL SUBJECT, INDIVIDUAL RESPONSIBLE, and TRAINING LOCATION. The subject need not be specific. The training location should reflect general training area, not an 8 digit coordinate.

(2) Units will be required to be capable of being reached on FM radio if a leader desires to view training.

(3) The company will forward a copy of their weekly training plan to battalions and brigades, as desired by those commanders.

(4) No training highlights will be maintained at any level. ACofS, G3 will call major unit or separate battalion commanders for training events as needed to develop visitor itineraries.

e. Training Cycle Briefings:

(1) The ADCs will be briefed four weeks prior to all Training and Mission/Training Cycles by the major unit/separate battalion commanders under their command on the details of the Cycle Training Plan. The briefing will include, but not be limited to:

(a) Training goals/objectives for the cycle.

(b) Troop list.

(c) ARTEPs and FTXs.

(d) CPXs and TEWTs.

(e) Combined Arms Live Fire Exercises and crew served weapons firing.

(f) Specialized training (Environmental, Combating Armor, MOUT, Adventure, etc.)

(g) Off-post training.

(h) NBC training.

(i) Scheduled maintenance and what specific training in maintenance will be accomplished.

(j) Night training to include night weapons firing.

(k) Division required/recommended training.

(2) Briefings will be scheduled with the ADC by the individual units. ACofS, G3 will be notified by the unit of date, time and location of the briefing.

7. ENVIRONMENTAL IMPACT. This publication has been assessed for environmental impact IAW AR 200-1.

8. FILING INSTRUCTIONS. This publication will filed by all addressees to which applicable involving those at company/battery/troop and separate detachment level.

9. REFERENCES.

a. AR 108-2

b. AR 340-2

c. AR 600-9

d. AR 611-201

e. DA Pam 108-1

f. DA Pam 310-12

g. FORSCOM Reg 350-1

h. FORSCOM Reg 350-e

i. FO Reg 220-1

j. FO Reg 350-1

k. FO Reg 525-1

(AF2h-GC-TN)

Annex H (Cont.)

29 August 1978 Ft Ord Cir 350-19

FOR THE COMMANDER:

STANLEY B. JOUSSE
LTC, AGC
Adjutant General

APPENDIX:
Required Training

DISTRIBUTION:
A

PETER W. LASH
Colonel, GS
Chief of Staff

REQUIRED TRAINING

SUBJECT	REFERENCE	FREQUENCY
Weapons Qual/Fam	AR 350-4	Annual
APFT	AR 600-9 FM 21-20	Semi-Annual
Drug & Alcohol Abuse	FO Cir 350-23	Semi-Annual
EO	AR 600-21	Qtr/2 Hrs
SAEDA	Ft Ord Suppl to AR 380-5	Annual
Standards of Conduct	AR 600-50	Semi-Annual
Safety	AR 385-10	Qtr
OPSEC	FO Reg 530-1	Annual
Gas Chamber Exercise	FO Reg 350-1	Annual
NBC Individual/Team Test	FO Reg 220-1, 350-1, 350-6	Annual
Geneva/Hague Convention	AR 350-216	As Reqd (#1)
Privacy Act	AR 340-21	As Reqd (#2)
Code of Conduct	AR 350-30	As Reqd (#2)
Benefits of Honorable Discharge	AR 350-21	As Reqd (#2)
Security Orientation	AR 380-5, FO Suppl 1	Annual
Drownproofing	AR 385-15	As Reqd (#2)
Military Justice (Course B)	AR 350-212	As Reqd (#3)

APPENDIX A

ANNEX I

(READINESS TO OBJECTIVES AND COST MODELS)

1. The Available Time Model[70] is built on the formula:

RAT = AT - CT

(Remaining Available Time = Available Time - Committed Time).

This model was applied to a simulated, current environment for a mechanized infantry company using actual required training data and the assumption of three alternative mixes of available time per week per man, e.g.:

40/20 - 40 hours daylight/20 nighttime

40/12 - 40 hours daylight/12 nighttime

40/ 4 - 40 hours daylight/ 4 nighttime

The results of the simulation expressed in terms of percentages of committed time were as follows:[71]

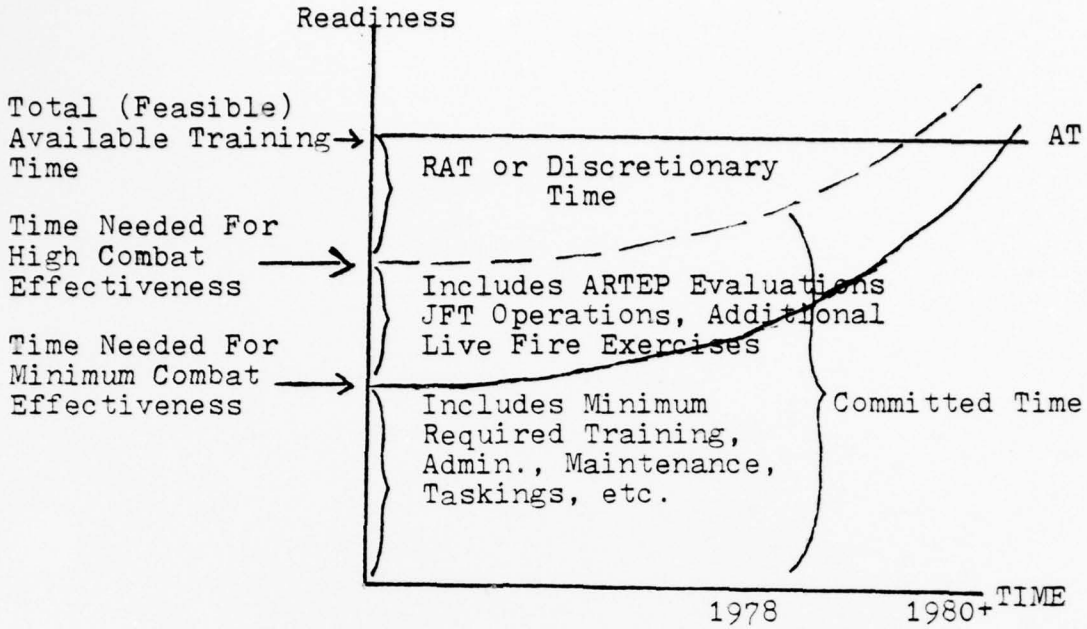
40/20 mix - 85.51%

40/12 mix - 95.95%

40/ 4 mix -108.06%

The hypothesis of this study is that, depending on the available time assumptions, the Army could be very close to not having enough time to insure high combat effectiveness and of having barely enough time to maintain minimum combat effectiveness standards at the small unit (company) level. This relationship is expressed graphically in Figure 13 (a slightly modified version of the reference).

FIGURE 13



Relating this premise to Figure 12, Chapter VII, it could very well be that the positive relationship of training objective completion to training readiness will not continue ad-infinitum and that, at some point, Diminishing Marginal Returns to Sclae will enter and Marginal Benefits will no longer exceed or equal Marginal Costs.

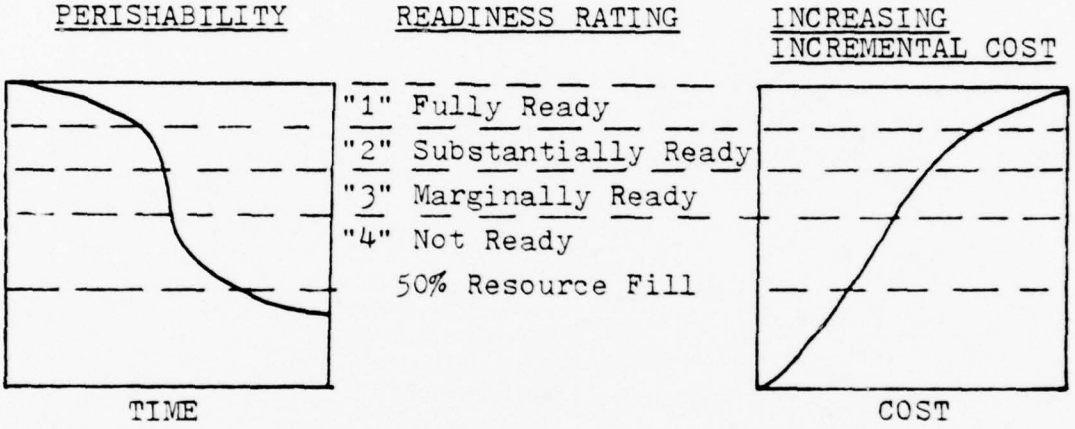
2. A Readiness Perishability and Cost Model[72] helps to further explain this concept:

> "Another readiness/cost concept which has been of great concern at Department of the Army level concerns the incremental costs of readiness. Specifically, current readiness becomes a budget issue that must be balanced against otherprogram needs. For example, assuming a fixed level of resources, the Army could reduce the readiness of a fixed force structure to provide for the research, development and testing of future equipment and forces, or the Army could cut its force structure. It appears that retaining as large a structure as possible, but at reduced readiness has often been the preferred alternative. There are two reasons why it may be

better to reduce readiness and retain structure. First, maximum readiness is highly perishable. A unit can attain maximum readiness and six months later the trained expertise and peak maintenance levels have ebbed away unless a continuous intensive infusion of training and maintenance is maintained. (See Figure 14). But units can be maintained at a moderate level much more economically, and brought to full readiness when needed.

FIGURE 14

READINESS PERISHABILITY AND COST



Secondly, the incremental costs of attaining the highest readiness levels increase sharply as the maximum levels are approached. For example, for this reason we see few large scale, full unit exercises although they are necessary to achieve maximum readiness. Figure 14 illustrates this relationship; note the shape of the readiness/dollar curve, illustrating this tendency to increased incremental cost. Other factors contributing to this increased incremental cost include the wasteful tendency to continuous cannibalization to maximize the amount of operational equipment, the expensive and inefficient increased parts and supplies inventories necessary at the unit level, "uploaded" ammunition tending to environmental deterioration, markedly increased training costs, especially for ammunition and fuel, and wear and tear on combat equipment by hard training. As the projected energy crisis deepens, this aspect of incremental readiness cost will tend to become an even more significant factor.

For these reasons, Department of the Army is concerned with maintaining some units at a high level of readiness for instant deployment and others at a reduced level in order to maximize the use of limited resources. Maintaining every unit of the Active Army and Reserve Components at a peak of combat readiness would absorb financial resources that are needed to buy tomorrow's readiness, i.e., research, development, testing and procurement."

ANNEX J
(BFTD PROBLEM AREAS)

A. VARIATIONS IN BFTD "STANDARDS" TO ACTUAL

One of the inherent problems of top level decision makers is to review the vast range and mix of possible training objectives (the "what to do") and, through judgement prioritize them. In many cases, this process slips another level or two and key events (the "how to do") are identified as well. This process, influenced by the stresses mentioned in Chapter VII, is proliferated at each major command level. As brought out in the Available Time Model, (Annex I) resource constrained commanders at the lower end of this process may end up with very little choice or control over the training events actually scheduled.

In fact, "to avoid being criticized for not executing required training events, a unit leader is in fact motivated to train in as many key events as he has available time to conduct. This situation leads a unit into conducting minimum level proficiency training."[79]

Thus, in an attempt to insure goal congruence, the lower level manager/leader is motivated to "sub-optimize", which may prove ultimately non-congruent. "Achieving the surrogate (key training events) should not be permitted to become more important than achieving the objective."[80]

The BFTD standards which come out of such an environment could, then, be poor ones by which to formulate budgets and evaluate performance.

It is generally felt that the commander is the most capable of assessing which training events should be accomplished (how to meet the objectives), as he is in the best position to consider such humanistic issues such as the capabilities of subordinates, past-training and personnel turnover. To illustrate, the following is a quote from a letter written by the CG, 4th Infantry Division to the CG, FORSCOM, in response to the August 1977, TMCS test at Ft. Carson:

> "The system (TMCS) represents a major breakthrough in training management and exceeds its original purpose of identifying training costs. Its simple but effective way of helping the battalion commander plan his training program and providing him an analysis of that program was met enthusiastically by my commanders. An aspect which they were particularly fond of was that the product developed is a commander's program and reflects their judgement as the best training for their unit."

Unfortunately, the training discretion exercised by the Commander does not enhance the BFTD concept. To build the BFTD on non-standard training event input would cause the BFTD to be either a poor standard for measuring training objective outcomes or cause the BFTD to be invalid due to the variance between like units.

B. ARTITRARINESS IN BFTD COMPUTATIONS

Similar cost manipulations could be brought about by the variance in "sufficient personnel and equipment." If Unit A has 70% of his personnel/equipment present for training while B has 90%, A will again appear more efficient. A proposal has been made to change the name and definition of a BFTD to that of a Battalion Day which is defined as 8 to 24 hours of activity conducted by an MOTE Battalion. The words "sufficient personnel and equipment" have been left out of this new definition.

C. PROBLEMS OF COSTING THE BFTD

If indirect training costs were added to the direct field costs, a lower, more realistic ratio of garrison to field training costs and a higher cost/BFTD would result. Provided this cost figure does not exceed a standard ceiling, it could then be used to justify more training funds; for example:

Assuming: Standard cost per BFTD for Unit = $5000
Standard number of annual BFTDs = 75

	Old Garrison/ Training Cost Ratio 75/25	New Garrison/ Training Cost Ratio 50/50
Total One Day Costs:	$10,000	$10,000
Garrison Costs:	-7,500	- 5,000
Training Costs:	2,500 x 75 = $187,500	5,000 x 75 = $375,000

Additionally, certain training events, such as Emergency Deployment Readiness Exercises, Equipment Serviceability Criteria and Motor Stables which could be construed as garrison training, involve field training elements of expense, such as diesel and MOGAS, spare parts, and equipment. In order for TMCS to account for these resources they must be entered as field/range training or the programs must be adapted to recognize them.

The Battalion Day proposal will help in these areas by not constraining the resources used (to include time) to those used strictly to support mission training. Instead, resources used during "periods of activity" will have to be accounted for.

For example, garrison guard duty, a mandatory requirement, requires certain vehicle and fuel resources, the costs of which TMCS could compute. This would eliminate any unnecessary manual computations while utilizing mostly existing technology.

The problem of manually costing such garrison costs as civilian pay, TDY, transportation, etc. was addressed in Chapter VII. Other costs not associated with BFTDs such as Field Training Transportation (using non-organic equipment), special costs, Missle Test Firing Costs, etc. seem reasonable in definition, scope and ability to be isolated. In those cases where field training cost factors are present in these areas, TMCS should be able to assist the manager in deriving their costs.

D. BUDGETING AND EVALUATING WITH THE BFTD

As reflected in Schedule 50b (Issue Detail) (see Annex F for example) costed BFTDs are related to OMA P2 mission issue areas at the Enhanced and Basic (Financial Levels). The total BFTDs shown at the Basic Level of Schedule 50b are intended to agree with the Funded BFTDs shown in column 2 of Schedule 40 (Quantification Data - P2 Mission) (see Annex K for example). Other criteria for the completion of these schedules are:[81]

> Training to support existing unit readiness status/condition or REDCON level should be funded within the incremented level to preclude impacts on unit REDCON.
>
> Total dollars displayed in Schedule 40 will equal the total P2 mission dollars contained in the Basic (Financial Level, column of schedule 50a (Issue Overview) (see Annex K for example).
>
> Total BFTD requirements will be reflected by funded and unfunded BFTD. Funded BFTD are those which can be accomplished within the funds provided in the budget guidance and command priorities. Unfunded BFTD are those which cannot be accomplished due to the lack of P2 mission resources. The total of funded and unfunded BFTD should equal the total BFTD requirement for a type unit. Unfunded BFTD is the only item shown on Schedule 40 that is not at the Basic Financed Level.

As it turned out, using actual FY 79 schedules submitted by three FORSCOM units, BFTDs could <u>not</u> be crosswalked from summary data on the Schedule 40's to issue data on the Schedule 50's. Indications from talks with personnel in the Program and Budget Office, ADCOPS, Dept. of the Army were that insufficient data was provided from reporting MACOMS to do this at their levels as well.

In effect this means that it was difficult if not impossible to clearly see the impacts of training program funding alternatives on issues. If this cannot be done, then the usefulness of BFTD costs/benefits ratio is also open to serious question.

E. RECOMMENDATIONS

1. Adopt the Battalion Activity Day (BAD) as a replacement for the BFTD in both name and definition but change the computation to that under the column marked new in Table 12.

While the BAD days computation will be more difficult, the disparity between the marginal hours and marginal days reported is not as great when viewed in terms of the traditional 24 hour day. Thus, these computations are felt to be less subject to inflation by manipulation. Spot or edit checks of original program inputs to the training actually conducted should also be made.

2. The Battalion Activity Day should be aggregated from all time resources needed, including those devoted to garrison training and duties. TMCS should be adopted to recognize them, weigh them against the total time constraint when considering what training can be conducted and print out results in terms of field training, range training, garrison training and garrison duties.

3. Where semi-variable elements of expense (indirect training) are funded from P2 mission dollars and TMCS cost factors exist for them, TMCS should be modified to compute

such cost. These costs should be printed out corresponding to one of the above mentioned categories (garrison training, range training, etc.) and set against the appropriate dollar constraints.

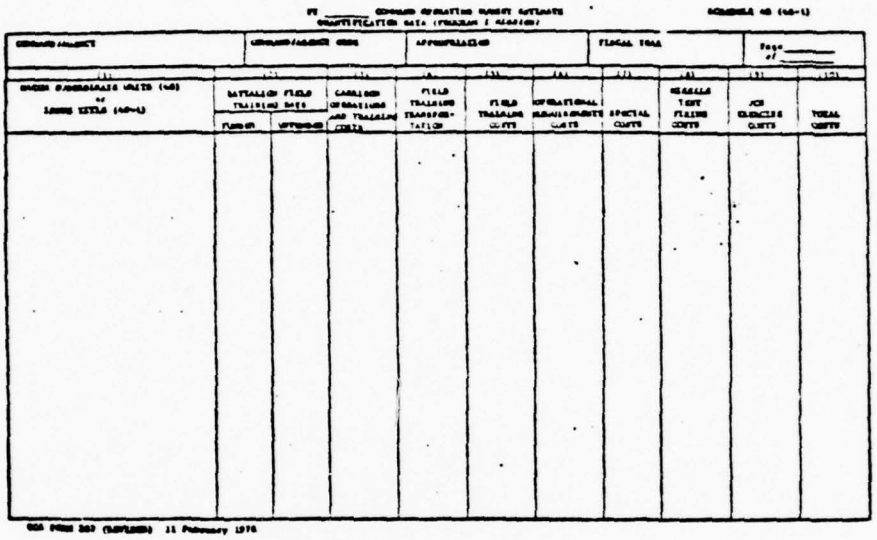
TABLE 12

BFTD (OLD) VIS BAD (NEW) COMPUTATIONS

HOURS		DAYS		No. of Traditional HOURS (1Day = 24 Hrs)		Absolute Value of Disparity	
(A_1)	(A_2)	(B_1)	(B_2)	(C_1)	(C_2)	$(A_1$ VIS $C_1)$	$(A_2$ VIS $C_2)$
OLD	NEW	OLD	NEW	OLD	NEW	OLD	NEW
0-3	0-3	0	0	0	0	+3 (3)	3 (3)
4-7	4-7	1/2	1/3	12	8	+8+5 (13)	+4+1 (5)
8-24	8-11	1	1/2	24	12	+16+0 (16)	+4+1 (5)
25-31	12-24	1 1/2	1	36	24	+11+5 (16)	+12+0 (12)
32-48	25-31	2	1 1/3	48	32	+16+0 (16)	+7+1 (8)
49-55	32-44	2 1/2	1 1/2	60	36	+11+1 (16)	+4+8 (12)
56-72	45-51	3	2	72	48	+16+0 (16)	+3+5 (8)
	52-64		2 1/2		60		+8+4 (12)
	65-72		3		72		+7+0 (7)

ANNEX K (SCHEDULE 40 - OMA - QUANTIFICATION OF TRAINING AND PROGRAM 2 MISSION DOLLARS)

ANNEX K (Schedule 40 - Quantification Data - P2 Mission)



(2) Preparation Instructions.

(a) Column 1 - Subordinate Units.

1 Units at Inclosure IX will be reported on Schedule 40 and used to compute this column. Issues such as JOTC, environmental training, off-post training, ALICE, etc., will not be used. Funds associated with that type of issue will be distributed to units.

2 Major elements such as separate brigades/groups/regiments, schools and other special activities will be separately identified by unit designation. All nondivisional/separate brigade/regiment units will be listed individually.

3 List, directly under their parent headquarters, all subordinate units down to and including MTOE battalions, or their equivalents, and TDA activities or agencies which are funded by P2 Mission dollars. Costs will not be rolled up above battalion level except as permitted below.

4 Funds for units and activities which do not meet the criteria (2(a)3 above) should be identified and shown separately.

5 Headquarters companies for brigade size units and higher echelons will be displayed separately. Battalion headquarters costs will be included in the battalion totals.

6 Similar types of battalion size units may be aggregated under named division, separate brigade, regiment or group. The number of units in the aggregation will be denoted in parentheses after the type unit.

7 All Combat Support battalion size units other than field and air defense artillery, aviation, signal and engineer units may be aggregated into a category called other combat support under the division, separate brigade, regiment or group they support. The number of such units should be displayed as described in subparagraph (2)(a)5 above (See AR 310-25).

8 All combat service support units will be identified and aggregated functionally (e.g., finance, adjutant general, transportation, ordnance quartermaster, medical), under the division, separate brigade, regiment or group they support. The number of such units should be displayed as described in subparagraph (2)(a)6 above, (See AR 310-25).

(b) Column 2 - Battalion Field Training Days (BFTD) Data concerning BFTD's to be entered in Column 2 will be reported for the following units and developed as follows:

1 Headquarters at levels above battalion.

2 The following types of units will be shown separately:

Infantry
Mechanized Infantry
Airborne Infantry
Airmobile Infantry
Ranger
Special Forces
Armor
Armored Cavalry
Air Cavalry
Field Artillery - by type missile system or caliber, further identified as self propelled or towed.
Air Defense Artillery - by NIKE, HAWK, or Chapparral/Vulcan.
Engineer - Combat and Combat Heavy will be separately identified.
Signal
Other Combat Support (List individually)
Combat Service Support (Categorized by function)
(NOTE: Nondivisional/separate brigade/regiment units will be listed individually)

3 Units which perform school support missions will be separately identified but listed with their appropriate parent organization. BFTD and costs will not be aggregated with similar units not performing school support missions.

11 Aviation Units.

a BFTD are computed for aviation units based on the hours committed to support of another unit which is conducting field training. Aircraft need not log eight flying hours to count a whole field training day so long as the unit (or element thereof) is committed for eight hours to a unit performing field training.

b BFTD are also computed for aviation units when they perform field training as a separate unit (not support of another unit). Aircraft need not log eight flying hours in this instance to count a complete training day so long as the unit (or element thereof) conducts eight hours of field training.

c Costs associated with other than BFTD, to include the costs associated with individual proficiency flying, will be considered as Garrison Operations and Training or Operational Requirements costs (depending on the unit mission) and no BFTD will be associated with those costs.

d In order to track the flying hours shown in other sections of the COBE into Schedule 40 the number of aircraft flying hours and dollars associated with the flying hour program will be shown in parentheses behind the dollars associated with aviation units (to include those aggregated into headquarters units) in columns 3 through 10 of Schedule 40. The total of aircraft flying hours and flying hour dollars shown in column 10 will agree with the total of P2M Schedule 50 concerned with flying hours and with the flying hour schedule.

(c) Column 3 - Garrison Operations and Training Costs.

1 Garrison operations and training costs are defined as the P2M costs incurred by units, which are not concurrently performing on-site 24-hour operations, to exist every day of the year in a garrison environment (billeting, administrative and logistical area). Garrison costs will continue to be incurred while a unit is away from garrison and should be viewed as the cost of ownership of having the unit in the force structure while conducting no field training. A separation of Garrison and Field Training cost is at Table 40-1.

2 The total resources for which this definition applies will be entered in column 3 opposite the type unit listed in column 1. If units are aggregated by type, the total of required resources for all units contained in the aggregation will be listed. Garrison operations and training costs equate to fixed costs as defined at Table 40-1.

(d) Column 4 - Field Training Transportation.

1 Field Training Transportation is defined as the cost of moving a unit, via non-organic transportation, from home station to a training area.

2 The purpose of this column is to identify the differing costs of transporting units to training areas and to preclude them from distorting the costs of training for similar type units.

3 An example of the type costs displayed in this column is the air transport charge to move a FORSCOM unit to Ft Irwin.

4 Costs charged to JCS exercise funds will not be shown in this column.

5 Costs incurred by transportation units in the performance of their mission will not be displayed in this column.

6 Transportation associated with moving a unit to a missile firing test will be displayed in column 8.

7 BFTD are not associated with costs in this column.

(e) Column 5 - Field Training Costs.

1 Field training costs are defined as the incremental costs of conducting combat/combat support/combat service support field training for units to which the definition of BFTD in subparagraph (2)(b) applies.

2 The field training costs as defined in paragraph 1 above will be entered in column 5 opposite the type unit listed in column 1. If units are aggregated by type, the sum total of required resources for all units contained in the aggregation will be listed.

(f) Column 6 - Operational Requirement Costs.

1 Operational requirement costs are defined as those P2M costs generated by units performing 24-hour, operationally required missions (e.g., NIKE batteries).

2 The total P2M resources required for units for which this definition applies will be entered in column 6 opposite the type unit listed in column 1. If units are aggregated by type, the sum total of required resources for all units contained in the aggregation will be shown.

3 Support missions such as school support and peacetime support of the Army are not considered operational in nature for this schedule and will not be included in this column.

4 BFTD are not associated with costs shown in this column.

(g) Column 7 - Special Costs.

1 Special costs are defined as unique commodities or activities that have an identifiable P2M unit cost, the expenditure for which will not be continuous (e.g., force structure activation one-time costs, those commodities or activities which will be included in some other appropriate column(s) after initial issue expenditure.)

2 The total resources required for units for which this definition applies will be entered in column 7 opposite the type unit listed in column 1. If units are aggregated by type, the sum total of required resources for all units contained in the aggregation will be shown.

3 BFTD are not associated with costs shown in this column.

(h) Column 8 - Missile Test Firing Costs.

1 Missile test firing costs are defined as the P2M costs associated with Air Defense or Field Artillery organizations performing a missile test firing of their primary weapon system required by the JCS, a unified command, NATO, HQDA or MACOM. REDEYE and anti-armor missile systems are specifically excluded from this category.

2 The total P2M resources required for units for which this definition applies will be entered in column 8 opposite the type unit listed in column 1. If units are aggregated by type, the sum total of required resources for all units contained in the aggregation will be shown.

3 BFTD are not associated with costs shown in this column.

(i) Column 9 - JCS Exercises Costs will be developed by this HQ. Installations will not fill in this column.

(j) Column 10 - Total Costs.

1 Column 10 contains the total P2M resources required by the type unit listed in column 1 and is the sum of columns 3 through 9.

2 All P2M resource requirements must appear in one or more of the applicable costs columns and the total of all column 10 costs for all types of units in the command must be equal to the total P2M funding level shown in the Basic Level, Command COBE submission.

(3) Reporting at Incremented Levels (Above and Below Basic Level).

(a) Since Schedule 40 is being prepared at only Basic level funding, the impact of reduced funding and the benefits accruing from increased funding must be expressed and prioritized.

(b) As part of the overall COBE submission, FORSCOM commands will be preparing a Schedule 50 in which issues will be described and the impact of incremented changes to funding levels will be expressed. Schedule 50

will provide a description of the training which will be gained or lost and a projection of the impacts on training.

(c) It is recognized that the dollar/BFTD ratio for certain similar units may vary widely for valid reasons such as participation in a major test (e.g., Division Restructuring Study), extraordinarily high transportation costs associated with moving to a training area, or similar reasons. Commands are encouraged to place footnotes on Schedule 40 to explain the cause of apparent aberations in unit BFTD or dollar requirements or accomplishments.

(4) Reporting Impacts on Training Proficiency. (See Inclosure XI)

(5) POC at HQ FORSCOM are:

(a) Training (BFTD), LTC Danner, AUTOVON 588-3011.

(b) Programs (Budget & Justification), LTC Imes or Mrs. Hall, AUTOVON 588-4242.

TABLE 40-1

Relationship of EOE to Schedule 40 Columns:

Cost Description	Garrison	Operational Requirement, Missile Test Firing or Field Training Cost
Civilian Pay	All	
TDY	All except for JCS	
Transportation of Things	Trans less off post	Only off post. JCS shown in JCS columns
Printing	All	
Other Services (Rent, etc.)	All	
SSSC	All	
DX	All	
CIF	All (except show as a memo on Schedule 40)	
AVGAS		All except JCS
AV SPARES		All except JCS
Diesel & MOGAS 1/		All except JCS 1/
Vehicle and other 1/ Spare Parts		All except JCS 1/
Equipment	All	

1/ POL and Spare Parts cost for Combat Service Support units will be prorated and reported as 50% fixed Garrison and 50% field training cost.

ANNEX L (RELATING READINESS REPORTING/BFTDs TO ZBB)

ANNEX L - (RELATING READINESS REPORTING/BFTDs to ZBB)

ENCLOSURE XI

INSTRUCTIONS FOR USE OF MATRIX OF TRAINING TASKS/EVENTS

1. Training programs must be fully justified, to include all training that is funded and training which must be eliminated due to lack of funds. At this point in the instructions, Schedules 50a, b and c should be familiar to the trainers and operators at installations and division level. Schedule 50b shows a breakout by increments of the Installation Training Costs. Schedule 50c provides an opportunity to express the impact or "level of pain" starting with the decremented level and progressing through each increment. (See example below).

ISSUE DETAIL NARRATIVE

ACTIVITY	APPROPRIATION	FISCAL YEAR	ISSUE	PROGRAM ELEMENT
Fort Apache	OMA	FY 1979	On-Post Training	207611

1. The adjusted guidance for this issue is $4,100,000.

2. There are no alternative means of accomplishing on-post training. On-post training is the minimum essential training program. It is this training which builds individual (Soldier's Manual) unit *training proficiency* (ARTEP) up through battalion level. On-post training includes all skill development and leadership training for which there is no substitute.

3. The decremented level ($3,600,000) will permit Fort Apache to accomplish a portion of its scheduled on-post training activities. Of prime consideration is the fact that *all individual and small unit training objectives* will be accomplished. All battalions will be able to conduct short MOTe/FTXs culminating in the accomplishment of their scheduled ARTEP. This level of funding will prepare units up through battalion. It will not be sufficient to expand battalion training to include those highly manned requirements for marshalling, loading, moving out to an objective area, and employment in unfamiliar terrain which is vital to ready units to respond to contingency plans; not does it permit *training at brigade level and higher*. Many activities considered routine will not be accomplished (ROTC, summer support, marksmanship competition, preparation for JTF, etc) without a drawdown on the battalion training program. Any requirements to conduct activities such as those mentioned above will impact on the training proficiency of one or more battalions. At this level of training readiness, two to three weeks will be required to mold the battalions into combat ready brigades and divisions.

4. a. Increment #1 restores the funds necessary($1,000.0K) to expand training programs to include brigade exercises on-post. This division is required to be combat ready and must maintain a level of readiness where it would be capable of alerting, marshalling, moving, and deploying to their combat positions *NLT 10 days after mobilization*. The total ($4,200.0K) is required to sustain this level of readiness. Any shortage of dollars will cause a commensurate reduction in readiness of one or more of the combat battalions, and ultimately the entire division.

b. Increment #2 restores the funds ($700.0K) required to conduct the miscellaneous, yet important activities such as training for *local contingency plans*; SYTC *summer camp support*; rifle team competition, expert infantry badge competition, fabrication of a Military Operations in Built-up Area (MOBA) training facility, etc.

c. Increment #3 is an enhanced level of training and requires an additional $500.0K to operate a leadership school for the junior NCOs in the division. The *decremented level funded* individual MOS training and small unit training. However, no unit can be fully trained and in peak fighting condition if its team and squad leaders do not have the necessary leadership qualities. This increment will provide the means to develop this leadership.

d. Increment #4 provides funds ($300.0K) to develop the divisional skills to accomplish its alternate mission. Fort Apache has a contingency mission requiring skills in survival, rappelling, and small unit internal defense operations. Although not Fort Apache's primary mission, it is the type contingency plan which has the highest probability of happening. (Reference OPLAN Muddy Water.) Fort Apache is required and expected to be prepared to implement its alternate contingency mission at any time. If the additional $300.0K is not provided, the funds in the decremented (-) must support the battalion level training program. In this event, Fort Apache will not be able to implement its alternate mission with the expected degree of expertise and proficiency.

2. Historically, MACOMs have neglected to provide adequate costs or explanations and justifications for training programs. The traditional impact statement such as - "If Fort Apache doesn't receive the entire funds for training as requested, readiness will be impaired," etc., will not be sufficient in these days of constrained budgets. Impacts have to be more specific, forceful, and convincing. FORSCOM Action Officers must be able to determine and explain what training is being conducted at the installation. Accordingly, installations must prepare each COBE Issue so that FORSCOM and DA will fully understand what can and cannot be accomplished with the funds at each incremented level as well as within the decremented level. Of special concern are those training activities funded out of the decremented level which are not necessarily a separate Issue topic. It is imperative that the on-post and off-post training Issues pick up and identify programs which compete for the training dollar (ARTEPs, individual training events, school support, ROTC summer camp, etc.).

3. Note that the examples in the next paragraph outline impacts in terms of training proficiency that are beyond unit readiness (REDCONs) as defined in AR 220-1. Unit readiness is that essential personnel/equipment fill, equipment serviceability and unit training to achieve ALO and move to the gate of the installation. Training to support unit readiness (AR 220-1) should be funded within the decremented level to preclude impacts on unit REDCON.

4. Although each installation will have to create its own impact statements, a list of example "levels of pain" is provided, which can be massaged and expanded:

a. At (the decremented level; Increment #1; Increment #4, etc.) Fort Apache units will be capable, at best, of sustaining individual proficiency to Soldier's Manual standards. Unit operations and unit leadership training is sorely lacking. Units will be REDCON _____. Only _____% BFTD requirements are funded.

b. At (the decremented level; Increment #1; Increment #4, etc.) Fort Apache units will be capable, at best, of sustaining individual proficiency and up to squad level proficiency in ARTEP tasks. Larger unit training and platoon and company leadership training is lacking. Only _____% of the required BFTDs are being funded. Units will be limited to REDCON _____.

c. At (the decremented level; Increment #1; Increment #4, etc.) Fort Apache units are individually trained and unit trained to ARTEP standards up through company level. There is no proven ability to operate in battalion and larger units. Only _____% of required BFTDs are funded. Maximum REDCON attainable is _____.

Annex L (cont.)

d. At (the decremented level; Increment #1; Increment #4, etc.) Fort Apache units are trained up to battalion level and maintain Soldier's Manual and ARTEP proficiency. Combined Arms Training has been conducted and Combat Support and Combat Service Support operations have been included. As far as personnel, logistics and training are concerned, AR 220-1 standards can be met. However, Fort Apache cannot and has not conducted deployment training (loading, off load, etc.) at this level of funding; nor have brigade and higher level exercises been conducted. Basically, Fort Apache is qualified to operate battalion size units on the installation. It does not possess a proven capability to move out of the garrison and implement contingency plans. The situation is viewed as being on the threshold of training proficiency but not quite there due to funds shortfall. _____ BFTDs are required to reach this level of training. REDCON 1 can be maintained but the unit has not trained in deployment and environments similar to its intended area of employment on contingencies.

e. At (the decremented level; Increment #1; Increment #4, etc.) battalions and brigades have demonstrated the capability to conduct combined arms exercises at home station. (Although no off-post exercises have been conducted, pre-development training (load-out etc.) may have been conducted. If so, the commander's judgment may be required to determine his subjective level of training proficiency.)

f. At (the decremented level; Increment #1; Increment #4; etc.) Fort Apache will be able to develop the capability to alert, assemble, deploy, and employ its brigades to conduct operations on unfamiliar terrain in an off-post area. Proficiency at brigade level and below can be sustained. _____ BFTDs are required to reach this level of proficiency.

g. At (the decremented level; Increment #1; Increment #4; etc.) Fort Apache unit will possess the capability to operate in all types of environments, anywhere in the world. It can react to its primary and alternate contingency plans. The division possesses the proficiency to participate in joint operations and interoperability training. All units have conducted or demonstrated capabilities in Emergency Deployment Readiness Exercises (EDREs) and FTXs away from home station. Funding levels below this amount will prevent (one or more) units from being totally ready. (This statement would properly support a funded level close to or above guidance.)

h. Increment No. ___ provides for the funding to send the (one) brigade to the NTC. This training will provide deployment training, experience in POMCUS type procedures, operations in unfamiliar terrain, and experience in desert operations. NTC training supports this unit's primary and secondary contingency missions. Without this training, one-third of the division (the brigade) will not have demonstrated a capability to deploy or perform its assigned missions.

5. In general, the assumption is that all battalions are at least at a level of training proficiency where they are conducting battalion exercises on post which only makes them partially ready. Off-post training (deployment and employment on unfamiliar terrain) will be required to refine their capability to perform their combat mission. Special training will further refine and sharpen deployment and employment readiness. Since much of the readiness training can be conducted on post, and on-post training is critical to individual and unit skill development, it is logical that the decrement level should not cut too deeply into the base (by choice). Accordingly, it is expected most installations will eliminate the more advanced training activities (special training) in reaching a decremented level and then identify the restoration of the cut through a series of increments.

6. Instructions for use of Table XI-1, a matrix of Training Tasks/Events:

a. The training matrix in Table XI-1 was developed from the Commander's "Training Guidelines" letter, FCR 350-X, FCR 525-2 and Chapter 4 of the COBE instructions, to provide a representative list of training tasks for use in budget preparation. The list of training tasks supports the Army's training philosophy that battalion level on-post training (ARTEP) proficiency has priority for resources and is the basis upon which other training is built.

b. Execution of training is truly not incremental as the list suggests, but if required to set a priority between ARTEP level training and special training (NWTC, JOTC, etc) we would train first to obtain proficiency at battalion. After a unit is fully trained at battalion level, more sophisticated training is necessary to totally prepare the unit for deployment and operations in a variety of terrain and climatic conditions. Normally, this specialized training (Ft Drum, Ft Irwin, etc.) is geared to prepare units for contingency missions and to demonstrate capabilities to operate at the combined/joint levels (JCS Exercises to include REFORGER). The list of training tasks suggests a relative order for building (or decrementing) a training program.

c. The list is not intended to be directive. It is realized that the commander is the training manager and his evaluation of his state of training, to include training requirements, will prevail. The list is a guide for decrementing/enhancing training programs, is a checklist of training programs/activities available to the commanders (schedules and funds permitting), and provides a framework upon which impacts on training proficiency can be explained in consistent terms from battalion to installation.

d. A separate matrix must be completed by each installation having P2 Mission funds for FY 79 and FY 80. Completed training matrices (FY 79 and 80) will be submitted to HQ FORSCOM (ATTN: AFOP-PO) in five (5) copies not later than 19 May 1978.

Annex L (cont.)

TRAINING TASKS & EVENTS - FY 79

	TRAINING EVENT	FORT HOOD				FORT BRAGG		FORT CAMPBELL		FORT SILL		FORT RILEY		FORT CARSON		FORT POLK		FORT ORD		FORT LEWIS		FORT MCCLELLAN		SCHOOLS (EXCLUDING FORT BENNING)		FORT BENNING	
		2d Armd Div	1st Cav Div	4th Cav Div	Others	82d Abn Div	Others	101st Abn Div	Others	1st Corps Inf Div	Others	1st Inf Div	Others	4th Inf Div	Others	5th Inf Div	Others	7th Inf Div	Others	9th Inf Div	Others	24th Inf Div	Others	23rd Inf Div	Others	197th Inf Bde	Others
4.	Conduct Sqd FTX Annually.																										
-a.	On post.	X	X	X		X		X		X		X		X		X		X		X		X		X		X	
-b.	Off post.																										
5.	Conduct Div FTX Biennially.					X						X				X						X					
6.	Conduct Unit Exchanges w/Foreign Countries.																										
7.	Conduct TRADOC Spt.																										
-a.	BDTC Summer Camp.											X															
-b.	School Support.																										
8.	Participate in AC Spt.																										
-a.	Affiliation	X	X			X		X		X		X		X		X		X		X		X		X			
-b.	ARNAT	X	X			X		X				X		X				X		X		X		X		X	
-c.	Partnership Division	X																									
9.	Participate in Mbr JTR/JRS.	X	X	X		X		X				X		X		X		X		X		X		X		X	
10.	Participate in RFFMACFB.		X									X															
11.	Participate in R/D Test Program.	X	X	X		X		Y		X		X		X		X		X		X						X	
12.	Participate in Allied Country Training Forcicon.																										
13.	Participate in USMA Support Program.					X		X																			

Appendix 1 to Annex L

(Additional Comments/Studies of Relating Readiness Reporting/BFTDs to ZBB)

A. GENERAL COMMENT - READINESS REPORTING SYSTEM

While the output measurement for training portions of the Unit Status Report are subjectively determined (based on the commander's judgement and therefore qualitative indicators of effectiveness/readiness); the equipment on hand, equipment status and personnel readiness data are based on both quantitative and qualitative factors. As brought out in a recent study[82] this system has weaknesses but for purposes of analysis, the authors will assume that the current system is not all inherently bad:

> "Performance has both a quantity and quality dimension...the total absence of quality measures in management control systems may lead to a detrimented emphasis on quantity."[83]

> "A judgement made by a qualified person is usually a better measure of the quality of performance than any objective measure because humans incorporate in their judgement the effect of circumstances and nuances of performance that no set of objectives measures can take into account.[84]

B. OTHER STUDY RESULTS

1. A high level working conference, convened in 1978, had this to say about relating costs, BFTDs and the readiness system:[78]

> "Additional BFTD will be required to gain and sustain proficiency in operations above the battalion level, deployablity, employability on

> unfamiliar terrain, and in operations with services or nations. It should be noted, however, that these figures cannot be derived with the precision of straight arithmetic. Training away from home station, for example, may include many of the activities which would be performed at home station if facilities were available. By the same token, participation in a JCS exercise may automatically satisfy requirements for deployability training and division level operations.
>
> The current definition of training readiness is incomplete. It does not consistently reflect the training at echelons above the battalion, on unfamiliar terrain, or in joint and combined environments which is necessary for a unit to reach its goal of peacetime readiness. These are the same type activities which have been most difficult to justify and defend in the budget process."

Subsequently they proposed greatly expanding the REDCON ratings and relating them to specific echelons of training and percent of basic BFTD requirements as shown at Appendix 2.

2. Readiness costing using multiple regression analysis to develop Cost Estimating Relationships (CER) which relate OMA P2 mission costs of Army Divisions to readiness has also been studied.[85] A CER was derived in terms of five explanatory variables; personnel strength, personnel turnover, level of training, equipment servicability and theatre of operations.

The results indicated that the CER was statistically significant and could be used in estimating OMA mission funds required to meet specific readiness requirements.[86] Limitations of the CER included being restricted to division size units and an inability to estimate incremental costs.

Although concluding that the technique itself was valid, futrue development of a more comprehensive model (one which included all OMA costs associated with readiness and a comprehensive review of the readiness definitions, criteria and reporting system) was recommended.

3. Using data pertaining to recruit and other school type training, the Training and Doctrine Command (TRADOC) has also developed OMA CERS (using similar correlation/regression analysis applied to a multiyear historical base) in a handbook.[87]

APPENDIX 2 (METHODOLOGY FOR EXPANDING REDCON LEVELS) TO ANNEX L

Appendix 2 (Methodology for Expanding REDCON Levels) to Annex L

Projected Division and Separate Brigade/Regiment Training Readiness Levels

R-14: Subordinate units will be capable of sustaining individual proficiency to Soldier's Manual standards. At least 10%, but less than 30%, of basic BFTD requirements for all organic units can be funded.

R-13: Subordinate units will be capable of sustaining individual proficiency and up to squad/section/crew proficiency in ARTEP tasks. At least 30%, but less than 50%, of basic BFTD requirements for all organic units can be funded.

R-12: Subordinate units will be capable of sustaining individual proficiency and up to platoon proficiency in ARTEP tasks. At least 50%, but less than 70%, of basic BFTD requirements for all organic units can be funded.

R-11: Subordinate units will be capable of sustaining individual proficiency and up to company proficiency in ARTEP tasks. At least 70%, but not all, basic BFTD requirements for organic units can be funded.

R-10: Subordinate units will be capable of sustaining individual proficiency to Soldier's Manual standards. Collective proficiency in ARTEP tasks will be sustained at battalion level and below. Combined arms training will be conducted, but training with appropriate combat support and combat service support elements will be limited. (Note: All basic BFTD requirements for organic units can be funded. Attainment of this level is a prerequisite for all following R-levels.)

R-9: Battalions and separate companies will be capable of conducting combined arms training with appropriate support elements at home station, but brigade and higher level exercises will not be possible. (Note: See R-7, below, if facilities prevent battalion level training at home station.)

R-8: Capability to provide effective command and control and to sustain itself in field operations at home station will be demonstrated by all brigades of the division or by the separate brigade/regiment. (Note: R-6, below, if facilities prevent brigade level training at home station.)

R-7: Capabilities to deploy and conduct operations on unfamiliar terrain away from home station will be demonstrated by at least one battalion of the division or separate brigade/regiment. (Note: Applies to all battalions if facilities prevent battalion level training at home station.)

R-6: Capabilities to deploy and conduct operations on unfamiliar terrain away from home station will be demonstrated by at least one brigade of the division or by the separate brigade/regiment. (Note: Applies to all

brigades of the division if facilities prevent brigade level training at home station.)

R-5: Proficiency at brigade level and below can be sustained. The division will also be capable of conducting a division level exercise at home station to demonstrate its capabilities for providing effective command and control and for self-sustainment in a field environment. (Note: This level does not apply to separate brigades/regiments.)

R-4: Proficiency at brigade level and below can be sustained. The division will also be capable of deploying and conducting a division level exercise away from home station to demonstrate its capabilities for providing effective command and control and for self-sustainment in a field environment on unfamiliar terrain. (Note: This level does not apply to separate brigades/regiments.)

R-3: Division or separate brigade/regiment proficiency can be sustained. Proficiency in joint operations and interoperability will be demonstrated by at least one battalion of the division or separate brigade/regiment.

R-2: Division or separate brigade/regiment proficiency can be sustained. Proficiency in joint operations and interoperability will be demonstrated by at least one brigade of the division or by the separate brigade/regiment.

R-1: Division proficiency can be sustained, to include participation in joint operations and interoperability training. (Note: This level does not apply to separate brigades/regiments.)

Appendix 2 to Annex I (cont.)

DIVISION AND SEPARATE BRIGADE/REGIMENT TRAINING READINESS

R-Levels	PROFICIENCY Echelons of Training Related to Basic BFTD Funding Levels					C&C/SUPPORT INTEGRATION FTX at Home station with spt elements for all/the:			DEPLOYABILITY/ EMPLOYABILITY EDRE, ORT, FTX away from home station for at least one:			JOINT OPERATIONS/ INTEROPERABILITY Joint/combined training for at least one:		
	Individual	Sq/Sec/Crew	Platoon	Company	Battalion	Battalions	Brigade(s)	Division *	Battalion	Brigade	Division *	Battalion	Brigade	Division *
14	10%													
13		30%												
12			50%											
11				70%										
10					100%									
9				R-10 PLUS		X								
8						X	X							
7						X	X		X					
6						X	X		X	X				
5*						X	X	X	X	X				
4*						X	X	X	X	X	X			
3						X	X	X	X	X	X	X		
2						X	X	X	X	X	X	X	X	
1*						X	X	X	X	X	X	X	X	X

Percent Basic BFTD Funded

does not apply to separate brigade/regiment.

ANNEX M

(OTHER EFFECTIVENESS MODELS/MEASURES)

A. ORGANIZATIONAL EFFECTIVENESS MODELS

The U.S. Army Organizational Effectiveness Training Center, Ft. Ord, a TRADOC unit, began an Organizational Effectiveness (OE) Training Program in July 1975; since then 132 Organizational Effectiveness Training Officers (OESDs) have been graduated from this program and are now assigned to 58 Army installations worldwide.[88] Phase IV of the overall program is now ongoing and encompasses determining the OE effort necessary in a particular organization to assist the commander in changing the organization to increase readiness and combat effectiveness.[89]

Their methodology calls for a comprehensive sampling of OE practice at various points in time and a computation of an information base using a logic based computer model which has, as its interactive components, the existing organizational climate, the OE process and the OESO

Inputs to this model include policies, guidance, concepts and doctrine with outputs being such historical operational measures as re-enlistment rates and number of soldiers absent without offical leave. Although the later measures are still in the development stage, they are looking at such criteria as maximizing uses of resources, goal accomplishment and problem solving. Many of these effective

output criteria are related to the training environment variables previously discribed and may someday be backwardly linked to budget inputs and resource management decisions.

B. ARMY RESEARCH INSTITUTE - REALTRAIN MODEL

The U.S. Army research Institute for the Behavioral and Social Sciences (ARI) have also done extensive work in the realm of developing measures of effectiveness. Perhaps the most significant contribution has been the development, testing and validation (with help from various TRADOC agencies) of REALTRAIN, an engagement simulation training system for squad thru battalion-sized units.

REALTRAIN has provided small unit commanders with the capability to conduct two-sided, free-play tactical exercises with credible casualty assessment, weapon signature effects and a high degree of tactical realism.[90] Although REALTRAIN is a performance-oriented training method, it provides quantitative validity to many of the evaluation criteria prescribed in the Army Training and Evaluation Programs (ARTEPS).

C. ARMY TRAINING AND EVALUATION PROGRAMS (ARTEP)

> "The ARTEP is a training and evaluation program that provides critical combat training objectives to units. It is a revoluntionary change in training philosophy that integrates both training and evaluation, with a focus on what should be done tomorrow to correct training weaknesses identifies today."[91]

ARTEPS have or will be written for each type of battalion and unit and some manuever headquarters for various readiness levels. Utilized properly, ARTEPS could help to reduce the problems associated with key event overloads by outlining key training objectives (in terms of tasks, conditions and standards) for unit trainers.

D. MULTIPLE INTEGRATED LASER ENGAGEMENT SYSTEM (MILES)

In an effort to reduce the need for numerous controllers, add further realism and even more accurate casualty assessment, the Multiple Integrated Laser Engagement System (MILES) is a further advance in technology. MILES is due to be tested at Ft. Polk, La., during FY 80 evaluating a Battalion Task Force under the ARTEP concept. It will be integrated with certain battle simulation techniques such as the CATTS (Combined Armed Tactical Training Simulator) and criterion measures will be fully validated.

E. NATIONAL TRAINING CENTER (NTC)

Long range plans (FY 81-84) call for the establishment of a National Training Center (NTC). Combat battalions will be rotated thru the NTC on a 12-18 month interval for evaluation under the most realistic battle enviornment possible. MILES assessment techniques and other instrumentation transparent to the players would be used to objectively evaluate each unit based on expanded ARTEP criterion. This

evaluation would provide the ultimate feedback measure of combat readiness/training effectiveness short of actual warfare. Once the NTC begins operations, unit results can then be compared to the unit's training program/costs/budget/ BFTDs, etc. in the hopes of statistically establishing causal relationships between well trained units and the resources consumed. As mentioned in Chapter VII, this concept will involve the last three models mentioned, REALTRAIN, ARTEP, and MILES and could represent a significant breakthrough in program evaluation/relating readiness to cost.

F. HUMAN RESOURCES RESEARCH ORGANIZATION (HumRRO)

Other studies of effectiveness have been conducted by civilian organizations under contract to ARI and other government agencies. One such study conducted by a member of the Human Resources Research Organization (HumRRO) concluded:[92]

> "Competence represents capability of the organization and is different from the sum of individual capabilities. Process performance involves organizational responses and the quality of any single response event is determined by the entire network of antecedent relationships and responses. This suggests that Organizational Competence can best be improved by efforts that focus upon developing the organization as a system, that is team training of all key personnel together, rather than skill development with isolated individuals.
>
> The processes that occur within organizations have been neglected when, in fact, they appear to be critical determinants of effectiveness. The conceptual framework embodied in Organizational

Competence appears to provide one production means for overcoming this limitation in both research and application."

Given the time and the resource constrained training environment previously described, this study suggests that high level planners/goal setters should look at the possibility of emphasis on more unit level and less individual level required training for operational units. While it is true that collective multiple-objective training is currently emphasized as a way of doing both, the stresses on training are also increased. Some tradeoff of individual to system type training is suggested. This study could impact on the budget process by influencing the make-up of the unconstrained training programs.

G. GENERAL RESEARCH CORPORATION

Another report, by the General Research Corporation presented a methodology for developing objective training status criteria/performance standards as measures of training proficiency...these standards were actually derived for tank battalions and specified so that resource requirements associated with each could be developed.[93] ARTEPS (as augmented by mission analysis), Unit Status Report procedures, and the building block approach were analyzed in developing the standards.

H. ARMY TRAINING STUDY (ARTS)

Although the 1977-78, TRADOC formulated ARTS study results were being briefed to the Army Chief of Staff at the time of this writing and were not available for release, the basic concepts behind the study are worthy of mention. A contributing factor to the ART's results not being released was a recent leak of information to the media which described the Army to be in a very poor state of training (see Appendix I).

Using magnitude estimation scaling techniques with a large world-wide survey of carefully selected and experienced leaders, general agreement was found on what training is required to meet both individual and collective competence in units. ARTS then developed a Battalion Training Model (BTM) which simulates the battalion training environment and demonstrates where training readiness is most sensitive to small changes in the environment. This model currently lacks a current costing methodology. It would appear that a system combining these features with both TMCS and the feedback from the NTC assessment and/or current ARTEP evaluations could overcome the shortcomings of each when viewed separately. ARTS is being further sophisticated by using a relatively new goal programming process whereby multiple, incommensurate and sometimes conflicting goals/objectives are formulated into the objective functions. Stacked LP programs are then run in an attempt to minimize the deviations from those goals based on a priority factor assigned to each goal.

> "One of the most appealing characteristics of goal programming is that the model is not limited by the necessity for an accurate quantification of the relationship among the variables in cardinal numbers. Instead, management need establish only upper or lower limits for their goals and rank them in an ordinal sequence. This is appealing because it is often infeasible to obtain accurate information on the cost or value of a goal."[94]

Hopefully, this technique will help to reduce the suboptimizing, dysfunctional, training management previously discussed.

Appendix 1 to Annex M

Army Times OCTOBER 16, 1978

An Independent Newspaper Serving Army People

STUDY CITES SHORTCOMINGS

Training Seen a Shambles

By JAY FINEGAN
Times Staff Writer

WASHINGTON — A massive new Army study has found that soldier training, particularly in the combat arms, is in serious disarray.

The study, obtained by *Army Times*, says many troops have trouble learning how to operate the increasingly complicated weapons in the U.S. arsenal.

It also says many soldiers forget how to do complex skills "virtually immediately" *after learning* them.

"I think the study points out that one of the critical problems of low-quality personnel is their lack of ability to retain training," said Rep. Robin Beard (R-Tenn.), a member of the House Armed Services Committee who has seen the report.

"But the study is more an attack on the quality of training," Beard told *Army Times*. "As we're getting lower and lower mental category people, training should be exceptional, but we're going in the opposite *direction*. By the Army's own study, the training is unacceptable. The poor quality of troops will cause nightmares for combat readiness."

After this report, Beard said, the Army "better be prepared to lay it on the line" with Congress (about the quality of today's Army). "There'll be no more *playing games*," he said.

The Army officer who did the study discovered that soldiers in observed units were more than three times as likely to have medical problems on training days than on nontraining days and four times as

(See TRAINERS, Page 21)

Trainers, Students Found Unable to Retain Lessons

(Continued From Page 1)

likely to have personal needs that take them away from training.

Poor training is evident, the study says. Results of the first Skill Qualification Test for *infantrymen* were "dismal." The SQT required arming and firing Claymore mines, light antitank *weapons* and M-60 machineguns, along with three other routine infantry tasks.

Only 10 percent of the troops in the test scored 60 or better — *the minimum score for* verifying competence. Not one soldier scored above 80 — the cutoff score *for promotion qualification*.

"In spite of the poor scoring on the test, 95 percent *of the soldiers* said the test was fair and valid," the study says.

Supervisors are also reported unable to often retain training. At Ford Ord, Calif., the study team *found* that many NCOs could not perform some of the tasks they were required to teach their men. "Discussions with battalion commanders both in Europe and *in the U.S.* indicate that this is not an unusual situation," the report says.

The study was not optimistic about the future. "Recruiting will be *come more* difficult, weapons will become more complex, resources will become more constrained, and the Army's training mission *either will remain basically unchanged or will* become more difficult," it says.

It notes the rising problem of matching highly technical *weapons* — *designed by some of the* nation's brightest engineers and scientists — with ordinary soldiers — whose mental ability is usually average or below average.

"How do we train these soldiers in the sophisticated skills required to operate *technically* advanced *equipment*?" the study asks. "Whether the training problems of today's Army can be solved remains to be seen."

Nonetheless, today's volunteer force has a crucial mission, the report says. Even though this is peacetime, the Army must be ready for "immediate involvement in a furious first battle of the next war, which could in fact turn out to be the last battle as well."

The study says that the Army has no way of explaining how its training budget relates to readiness. Such a failure, it says, leaves the Army vulnerable to budget cuts when Congress looks for places to save money.

Among the more serious charges in the report is that readiness evaluations are often "inflated" or manipulated by commanders eager to build better military records than their competitors. This *situation* is "a perfect example of a self-inflicted wound by the Army," the study says.

Phony readiness reports make it impossible for the Army's leaders to know *the force's capabilities*, say Pentagon observers. No one knows the extent of this problem.

The study is now being staffed at the Training and *Doctrine Command, Fort Monroe*, Va. An Army spokesman said it will undergo further staffing at *Department of the Army* before the Army Chief of *Staff is briefed on it in December*.

"If it's approved, it will be released," the spokesman said. "But it might go back to the drawing *board*."

ANNEX N

ARMY MANAGEMENT STRUCTURE/COBE DEFINITIONS, AND TERMINOLOGY

ALLOCATION. An allocation is an authorization issued by the Comptroller of the Army to operating agencies for purposes of financing operations at subordinate echelons by means of suballocation or allotment.

APPROPRIATION. An authorization by an act of Congress to incur obligations for specified purposes and to make subsequent payments thereof out of the Treasury of the United States. Appropriations are classified as being annual, multiple-year, or no-year, depending on the period of time that is available for obligation purposes.

THE ARMY MANAGEMENT STRUCTURE (AMS). The official framework for interrelating programming, budgeting, accounting, and manpower control through a standard classification of Army activities and functions. Through this means, the AMS satisifes the requirements of PL 84-863 which directs actions to achieve:

1. "Consistency in accounting and budget classifications,
2. Synchronization between these classifications and organizational structure,
3. Support of budget justification by information on performance and program costs."

BUDGET. A planned program for a fiscal period in terms of estimated costs, obligations, and expenditures.

BUDGET AND MANPOWER GUIDANCE (BMG). A document issued by a higher headquarters to its subordinate commands to provide information and guidance pertaining to missions, resources (manpower, material, and funds for a specific fiscal year), objectives, policies, limitations and related matters upon which the subordinate commands can base their programmed course of action for the fiscal year(s) concerned. (Also referred to as Program Budget Guidance (PBG) when the guidance comes from HQDA to the MACOMs).

BUDGETARY CONTROL. The financial control and management of a unit or function in accordance with an approved operating program and budget with a view of keeping obligations, expenditures, and costs within the limitations thereof, taking advantage of whatever fund flexibility exists without exceeding the limitations imposed by the annual funding program and/or the quarterly authority or obligation (i.e., allocation or allotment advice).

BUDGET EXECUTION. The implementation and administration of the approved operating budget during the budget year; accomplishment of the mission within available resources without creating overobligations and/or over expenditures.

BUDGET EXECUTION REVIEW (BER). Process by which the funds required to carry out and complete the programmed objectives and workload for the rest of the current year are determined and forwarded to higher headquarters as the operating program and budget. In addition to cost estimates, the obligational requirements are also indicated by appropriation and budget program. Budgeting, also includes the management and fund control of resources received as a result of the operating program and budget. Submitted to higher headquarters udring mid-year of the current year.

COMMAND BUDGET ESTIMATE (CBE). A documented course of action for the program year based on Department of the Army preliminary program and budget guidance. It is used by DA as input to the President's Budget.

COMMAND OPERATING BUDGET (COB). A command's documented course of action for a fiscal year in terms of what is to be accomplished, by whom, and with what resources.

COMMAND OPERATING BUDGET ESTIMATE (COBE). A command's total budget document which contains the CBE for the program year and the COB for the budget year.

COMMAND OPERATING PROGRAM (COP). A statement of the planned application of the resources programmed for availability toward the accomplishment of the assigned missions, goals, and workloads of that command. Included as a part of the program are all the resources programmed for allocation: men, money, material, and facilities.

COMMITMENT. A firm administrative reservation of funds based upon firm procurement directives, orders, requisitions, or requests that authorizes the creation of an obligation without further recourse to the official responsible for certifying the availability of funds.

COST FACTORS. The average cost, based upon experience, required to operate a particular type of equipment (per mile, per hour or round).

DECREMENT. A listing prepared by installations and activities to facilitate funding reductions that are received after approval of the initial operating program. Items or activities, or portions thereof, that are already included within the funded operating program are listed in inverse priority, i.e., lesser priority first. The total list of decrement actions normally represents 5 to 10 percent of the total funded program. The list reflects the order of those activities requirements that would be deleted first if funds were withdrawn.

DIRECT FUNDS. Obligation authority contained within the approved operating budget immediately available for a specific time and purpose. Direct funds are obligated for expenses directly attributable to installation operating expenses, cush as civilian pay, utilities, and contracts.

DIRECTORATE. An integral component of a HQDA staff agency, major command headquarters staff office, or installation headquarters that has primary responsibility for staff coordination and management of assigned functions. Responsibilities, accompanied by commensurate authority to act for the activity head or commander, normally include policy development, staff coordination, establishment of controls, and review of effectiveness of operations.

ELEMENTS OF EXPENSE. A four-position classification code representing the different types of services, goods, and other items being procured or consumed according to their nature rather than purpose. (Example: Civilian Pay is 1100).

FINANCED REQUIREMENT. A requirement included within an operating program that has been recognized and subsequently funded by a higher authority.

FIVE YEAR DEFENSE PROGRAM (FYDP). A Department of Defense management tool whereby the planning and execution of military activities is expressed in terms of missions and objectives (output) as opposed to funds provided (input). These programs are developed on a five-year (or longer) future projection basis taking into consideration existing resources, war plans, and the anticipated funds available from Congress to carry out programs. These programs are the basis used in the apportionment request by DOD.

FUND AUTHORIZATION DOCUMENT. The approved annual financial allotment of funds by major program which serves as the authority for the command to incur obligations.

FUNDS. Accounting units established for segregating revenues and assets in accordance with law and for assuring that revenues and other assets are applied only to financial transactions for which they are appropriated or otherwise authorized. Funds are of different types and designed for different purposes.

GENERAL PURPOSE FORCES. (Program 2), the General Purpose Forces Program of the OMA, provides for the mission support of the active Army Combat Forces and the requisite combat support and combat service support units. These resources directly affect the ability to train tactical units and to maintain the combat readiness of Army forces both deployed and those in the United States with deployment contingency missions. This portion of the appropriation provides for

the supplies and equipment necessary to conduct unit training, maintain equipment in a high state of readiness, conduct joint exercises and support the combat development programs required to sharpen the combat capabilities of our forces.

INCREMENT. By definition, a "decision package." An identifiable increase for an activity, above the decremented level, based on workload, or other specific requirements.

INSTALLATION. 1. A group of facilities, located in the same vicinity, that support particular functions. 2. Land and improvements permanently affixed thereto that are under the control of the Department of the Army and used by Army organizations. Where installations are located contiguously, the combined property is designated as an installation and the separate functions are designated as activities of that installation.

ISSUE. A specific program or task of sufficient importance to require separate identification and justification in the budget formulation process.

JUNIOR PBAC. A committee within an organization normally composed of the major activity budget analysts, and chaired by the organizations budget officer. It meets to review and resolve minor resource allocation matters, and to make recommendations on major financial and resource allocation proglems for consideration by the regular Program Budget Advisory Committee.

OBLIGATION. Amounts of orders placed, contracts awarded, services rendered, and similar transactions during a given period requiring future payments.

OPERATING BUDGET. The component of the operating program that details the financial plans in terms of costs (funded and unfunded) and obligations in support of the operating program for the budget year. At each level the operating budget provides a financial plan to support the activities and functions for which the commander is responsible.

OPERATING PROGRAM. A program prepared by each Army command, agency, and installation that lists the annual objectives to be obtained, relating the objectives to available resources (manpower, material, and money).

OPERATION AND MAINTENANCE, ARMY, 1979 (OMA). For the operation and maintenance of all organizational equipment and facilities of the Army, procurement of requisite equipment and supplies, production of audiovisual instructional materials and training aids, operation of service-wide and establishment-wide activities; medical activities; operation of depots, schools, training (including cost of

training civilian employees in the program from which the salaries are payable), recruiting, and programs related to the operation and maintenance of the Army. Also includes welfare and morale, information, education, and religious activities, and expenses of courts, boards, and commissions.

OUTLAYS. The amount of checks issued, interest accrued on the public debt, or other payments made (including advances to others), net of refunds and reimbursements. (The terms "expenditure" and "net disbursement" are frequently used interchangeably with the term "outlay.")

PROGRAM BALANCE. The condition wherein approved program objectives and schedules are in consonance with resources and established priorities.

PROGRAM BUDGET ADVISORY COMMITTEE (PBAC). A committee within an organization normally composed of senior representatives of the staff who are responsible for developing, reviewing, and making recommendations on all financial matters relating to the operations of the command.

PROGRAM ELEMENT. An integrated activity; a combination of personnel, equipment, and facilities, which together constitute an identifiable military capability or support activity. Program elements are the basic structural units of the FYDP.

REPROGRAMMING. The redevelopment of one or more activities or major activities comprising the installation program, including schedules and suppprting budget execution plans. These changes would be caused by major policy changes and budgetary decisions significantly affecting one or more of the major activities.

UNFINANCED REQUIREMENT. Items or activities (requirements) considered necessary by the installation for mission accomplishment or mission support, but which go unfunded and therefore in the eyes of the installation remain as "unfinanced requirements."

ANNEX O

GLOSSARY

AMS - Army Management Structure

ARTEP - Army Training and Evaluation Program

AVGAS - Aviation Gasoline

AVSPARES - Aviation Spare Parts

BASOPS - Base Operating Information System

BCFP - Battalion Cost Factor Program

Bde - Brigade

BDM - Battalion Decision Model

BER - Budget Execution Review

BFTD's - Battalion Field Training Days

BMG - Budget and Manpower Guidance

Bn - Battalion

CAMUS - Commitment Accounting for Management of Unit Supplies

CBE - Command Budget Estimate

COB - Command Operating Budget

COBE - Command Operating Budget Estimates

DCSOPS - Deputy Chief of Staff for Operations

DCSCOMPT - Deputy Chief of Staff, Comptroller

DDM - Division Decision Model

Div - Division

DOA - Department of Army

DX - Direct Exchange

EDRE - Emergency Deployment Readiness Exercise

EOE - Element of Expense

FORSCOM - Forces Command

FTX - Field Training Exercise

FY - Fiscal Year

HQDA - Headquarters, Department of the Army

MACOM - Major Army Command

MASS - Maneuver Area Scheduling Subsystem

MCFP - MACOM Cost Factor Program

MOGAS - Motor Gas (gasoline)

OMA - Operations and Maintenace, Army

P2 - Program 2 (Mission)

PBG - Program Budget Guidance

PARR - Program Analysis and Review

POL - Petroleum, Oil, Lubricants

PPBS - Planning, Programming, Budgeting System

STANFINS - Standard Financial Information System

TACS - Training Ammunition Control Subsystem

TAMIS - Training Ammunition Management Information System

TDY - Temporary Duty

TMCS - Training Management Control System

TMIP - Training Management Information Program

TOA - Table of Organization and Allowance

TOE - Table of Organization and Equipment

TRADOC - Training and Doctrine Command

TSG - Training Schedule Generator

TUFMIS - Tactical Unit Financial Management Information System

UIC - Unit Identification Code

WSDC - Weapon System Designator Code

ZBB - Zero Based Budgeting

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