DEFENSE SYSTEMS MANAGEMENT SCHOOL

AD A027003

PROGRAM MANAGEMENT COURSE
INDIVIDUAL STUDY PROGRAM

PROGRAM FUNDING GUIDE FOR AIR FORCE SYSTEMS COMMAND SPACE PROGRAMS

STUDY PROJECT REPORT
PMC 75-2

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) PROGRAM FUNDING GUIDE FOR AIR FORCE SYSTEMS COMMAND SPACE PROGRAMS		5. TYPE OF REPORT & PERIOD COVERED Student Project Report 75-2
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Victor William Whitehead		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Defense Systems Management School Ft. Belvoir, VA 22060		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Defense Systems Management School Library, Bldg 205, Ft. Belvoir, VA 22060		12. REPORT DATE 75-2 13. NUMBER OF PAGES 99
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) DSMS-PMC-75-2		15. SECURITY CLASS. (of this report) UNCLASSIFIED 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

UNLIMITED

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

18. SUPPLEMENTARY NOTES

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

SEE ATTACHED SHEET

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

SEE ATTACHED SHEET

DD FORM 1 JAN 73 1473 / EDITION OF 1 NOV 65 IS OBSOLETE

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

1081

DEFENSE SYSTEMS MANAGEMENT SCHOOL

STUDY TITLE:

Program Funding Guide for Air Force Systems Command Space Programs

STUDY PROJECT GOALS:

To define the types of funds used in AFSC space programs while: (1) correlating PPBS and Congressional appropriation numbers for each, (2) addressing usage restrictions on each, funds life, funds accountability, reprogramming authority, types of funding, what each fund can buy, and Budget Program Accountability Codes (BPAC's).

STUDY REPORT ABSTRACT

The purpose of this study report was to provide a guide containing useful and pertinent information regarding funds (or appropriations) which will most likely be of concern to the Program Manager (or other Project personnel) of an AFSC space program. Information in this guide was collected from various USAF and AFSC manuals and regulations, other official pamphlets, various school (DSMS and other) course materials, discussions with Hq. USAF and Hq. AFSC personnel, and the author's own experience.

Major appropriations of concern in an AFSC space program are likely to be the Research, Development, Test and Evaluation (3600); Missile Procurement (3020); Other Procurement (3080); Operation and Maintenance (3400); and Military Construction (3300) appropriations. Each of these appropriations may fund certain activities and not others, has set obligation lifetimes, and may be reprogrammed within certain limits (except Military Construction). Individual detailed chapters discuss each of these appropriations. Preceding the detailed chapters is a general information chapter discussing the different program identifiers (Program Element numbers, BPAC's, etc.) and how they are related, funds usage, funds phasing, reprogramming, and obligations.

This report should be of use to the Program Manager and his people by making them more conversant in the financial management area, by suggesting new approaches based on their new knowledge of funds, and by providing references for further study or research in each area.

NAME, RANK, SERVICE	CLASS	DATE
Victor W. Whitehead, MAJ, USAF	PMC 75-2	November 1975

KEY WORDS

RESOURCES MANAGEMENT FINANCIAL MANAGEMENT APPROPRIATIONS MILITARY FUNDS
SPACE OPERATIONS

PROGRAM FUNDING GUIDE FOR AIR FORCE SYSTEMS COMMAND SPACE PROGRAMS

Study Project Report

Individual Study Program

Defense Systems Management School

Program Management Course

Class 75-2

by

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November 1975

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EXECUTIVE SUMMARY

In many instances, a new Program Manager may assume leadership of and responsibility for an AFSC space program or project with little, if any, prior systems acquisition background or training. In these instances, he will find himself handicapped in determining solutions to day-to-day problems in numerous areas simply because he is not conversant in the basic terminology and/or the basic framework of those areas. One such area, beset by numerous problems always but of which many Program Managers are very unknowledgable, is financial management.

This paper was written to serve as a basic, introductory guide to financial management, in particular the types of appropriations most likely to be of concern in an AFSC space program. It begins by explaining how the different programming and budgeting identifiers associated with a program relate to the major Department of Defense (DOD) program areas, to the various Congressional appropriations, and to each other. Following this, the subject of funds usage is presented with emphasis on the obligation of funds. Details of funds reprogramming usage, as well as the attendant restrictions on reprogramming, conclude the chapter on general information. Succeeding chapters treat the Research, Development, Test and Evaluation; Procurement; Operation and Maintenance (O&M); and Military Construction

appropriations in detail. Each of these chapters defines the appropriation and its subsidiary fund accounts, lists the uses for the appropriation, presents particular information regarding obligation of that appropriation, and discusses the particulars associated with reprogramming within that appropriation.

This paper was prepared from information contained in a number of DOD, Air Force, and Air Force Systems Command (AFSC) regulations and manuals, as well as other documents, all listed in the Bibliography.

Having read this paper, an AFSC Program Manager for a space program will have a working knowledge of his funds sufficient to allow him to be more comfortable in decisions he makes regarding these funds as well as knowing the "right" questions to ask in getting to his decision.

ACKNOWLEDGEMENTS

I would like to express my sincere appreciation for the assistance and guidance given me in the preparation of this paper by my Study Project Advisor, Captain Robert O'Shaughnessy, USN.

My special thanks are also due Major Lawrence J. Hildebrand, Headquarters, Air Force Systems Command/SDSD, for providing insight into various funds management problem areas which helped focus my study and research for this paper.

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CHAPTER I

INTRODUCTION

In today's defense systems acquisition environment, major emphasis is being given to the financial aspects of programs. The AFSC Program Manager in the operating divisions, e.g. Space and Missile Systems Organization (SAMSO), finds himself constantly in competition for adequate funds to continue the progression of his program and constantly justifying the preservation of funds he has been allocated as well as those new funds in his budget requests. Despite his best efforts, he frequently finds his allocation of funds in each appropriation less than those needed to continue the pace of his program, or worse yet, some portion of his existing allocation of funds taken from him to be used on other programs. This dynamic financial environment requires that the Program Manager and his financial personnel work closely with Systems Staff Officers and Comptroller personnel at AFSC Headquarters as well as with his Program Element Monitor (PEM) at Headquarters, USAF to continually assess the effects of these funding changes on his program, realign his program and revise his funding profile as required. To effectively accomplish these tasks, some degree of knowledge of the types of funds and various factors affecting their use is

required by the Program Manager.

While a number of schools and courses exist which can provide the Program Manager with this knowledge, it is more often the case that new Program Managers are assigned to a System Program Office (SPO) and immediately plunge into the activities of their SPO without benefit of the necessary training. By the time he is selected for specialized SPO training, he has normally learned the fundamentals through trial and error.

This paper is an outgrowth of the author's experiences and frustrations in working financial management problems on an AFSC space booster program without the proper prior training. It became apparent to the author that, while information on the various types of funds used in AFSC space booster programs was available in a number of regulations, manuals, pamphlets, etc., nowhere was there a simple guide for the Program Manager which would provide basic funds information. The purpose of this paper is to provide such a guide for the types of funds used in AFSC space programs. As such, this guide will define the types of funds used in AFSC space programs, address the usage restrictions on each, their life, and reprogramming restrictions on each. The material contained in this paper was gathered from various Air Force and AFSC regulations and manuals,

DOD directives and instructions, and other pamphlets and reports, all of which are referenced in the Bibliography, as well as from discussions conducted by the author with Headquarters, USAF and AFSC personnel. Many of the listed sources actually extract information from each other. For this reason, except for Figures used, none of the material in the body of this paper is specifically footnoted or referenced to the Bibliography.

It must be remembered that the purpose of this paper is to provide general AFSC space program funds information to the Program Manager and not to serve as a substitute for the detailed instructions and requirements of applicable USAF and AFSC regulations, manuals, instructions, etc. It is hoped that the information contained in this guide will make the Program Manager more conversant in the area of AFSC space program funds and point him to the applicable regulations for his particular problem.

The initial chapter of this paper deals with general funds information, including appropriate definitions provided to serve as background information for the subsequent chapters. Each of the remaining chapters address one of the types of AFSC space program funds, providing detailed information on what may be procured with that fund, how long the fund is available for use, how that type (or "color") of money is used for contracts, and

how that type of money may be reprogrammed.

The information contained in this paper should be of benefit to those AFSC space systems Program Managers who have had no prior training in financial management but who find themselves thrust headlong into the day-to-day financial problems within their program.

CHAPTER II

BASIC FUNDING INFORMATION

Several types of funds are available for use by the Program Manager of an AFSC space program. These funds, more properly known as appropriations, are:

3600 Research, Development, Test and Evaluation; Air Force

3020 Missile Procurement, Air Force

3080 Other Procurement, Air Force

3400 Operation and Maintenance, Air Force

3300 Military Construction, Air Force

The following chapters will individually discuss each of the above appropriations in detail. Additionally, it is conceivable that an AFSC space program might have to purchase support aircraft or pay for modifications to existing support aircraft. In that case, the Aircraft Procurement, Air Force appropriation (3010) monies would be used. However, 3010 funds will not be addressed in this paper, as funding for this type of procurement/modification would not be a significant part of a space program. Before proceeding into the detailed discussion on each of the types of appropriations, general introductory information is required to provide the proper background for

the detailed discussions.

The suballocation of funds to an approved AFSC space program is the culmination of a lengthy, complex series of events tied together within the Department of Defense by a process known as the Planning, Programming, and Budgeting System (PPBS). For any one fiscal year's funds, this cycle is begun twenty-six (26) months prior to the start of the fiscal year in question, while the actual events leading to the program activities to be included in the fiscal year budget begin some seventeen (17) months prior to the start of the fiscal year. To this span of time must be added the time after the start of the fiscal year in question that Congress is late in passing the Appropriation Bill; the length of time required for DOD and the Office of Management and Budget (OMB) to complete the apportionment process and release funds to Headquarters, USAF; the length of time required for Headquarters, USAF, to allocate funds to AFSC; the length of time required for AFSC to allot funds to its subordinate units (e.g. SAMSO); and any length of time required if suballottment to the SPO is required. The clear message to all is that new funds do not appear "overnight" to save a Program Manager. Before proceeding with discussion of what kinds of funds exist, it is important to appreciate that the obtaining of any kind of funding is a lengthy process requiring

the careful attention and participation of a large number of people, but most certainly that of the Program Manager. Excellent descriptions of the events included in the PPBS cycle and apportionment process are contained in References 1 and 2.

Having understood that there are several types of funds used in AFSC space programs and that the securing of these funds is a lengthy, complicated process, it is important to understand how these types of funds relate to various program identifiers. It would be most convenient if a single set of identifiers existed for each program and that the funds appropriated for and allocated to that program bore this same identifier. To carry this theme to its extreme, the ideal case would be for one appropriation to exist for each program throughout its life and to bear that program's identifier. This is obviously not the case, as shown by the fact that there are several types of appropriations available for use on an AFSC space program.

The various funds appropriations resulted from functional groupings established by Secretary of War Forrestal in the 1947-1949 time period. These functional groupings (Military Personnel; Operations and Maintenance; Procurement; Research, Development, Test and Evaluation; and Military Construction) were adopted by the Congress and remain the major appropriation categories today. However, the Department of Defense does not

structure its programs or forces by these appropriation categories, even though they are the categories within which Congress provides financing for missions and mission support requirements. All DOD component programs are collected in a system known as the Five Year Defense Program (FYDP), which projects program costs five (5) years and force totals eight (8) years into the future. The purpose of the FYDP is to provide the official program for forces and the resources (manpower, equipment, supplies, installations, and funds) required to support them. Within the FYDP, balances are established between budgets and programs, programs and missions, and military missions and national security objectives. To accomplish this, DOD has established ten (10) major programs within the FYDP into which all programs of the military services are placed. These major programs, each representing the sum of the services, systems, and activities supporting the particular mission area, are:

Program 1	Strategic Forces
Program 2	General Purpose Forces
Program 3	Intelligence and Communications
Program 4	Airlift/Sealift
Program 5	General and Reserve Forces
Program 6	Research and Development

Program 7	Central Supply and Maintenance
Program 8	Training, Medical and Other General Personnel Activities
Program 9	Administration and Associated Activities
Program 10	Support of Other Nations

Since all of the DOD components' funds requirements fall within the above ten (10) major programs, and since Congress provides funds within the five (5) appropriation functional categories discussed above, there is obviously a relationship between the two groupings for each DOD component. This relationship is portrayed in Figure 1 (from Reference 3). Further, since the FYDP projects program costs for five (5) years, the Air Force portion of the DOD budget in Figure 1 can be further matrixed as is shown in Figure 2 (from Reference 4). These two figures illustrate well the complex relationship existing between Congressional appropriations, the programs within the Air Force, and the budgeting years, as well as showing the many small "pockets" of funds that a program may deal with at any one time, particularly if it manages programs from more than one of the ten (10) major DOD program areas. As a final reinforcement of this relationship between the FYDP programs and appropriations, Figure 3 demonstrates which appropriations may be used in each of the FYDP programs as well as the restriction of types of

funds used in Program 6, Research and Development. Figure 3 clearly shows that a particular program within one of the FYDP program elements may be funded from a number of Congressional appropriations.

Within the Air Force, each of the ten (10) FYDP programs are further broken down into manageable units referred to as program elements. A listing of Air Force programs, program element codes, titles and definitions is contained in Air Force Manual (AFM) 300-4, Volume XII. Examples of how the program elements are derived from the ten (10) FYDP programs are presented in Figure 4 (from Reference 3). To further clarify this breakout and allow the program element structure to be related to programs with which the new Program Manager is familiar, Figure 5 (from Reference 2) shows examples of the program element identifiers for current DOD programs within each of the ten (10) FYDP programs. As a system passes through its acquisition life cycle, its program element identifier changes as it passes each of the three major Defense System Acquisition Review Council (DSARC) decision points. It is for one or more of these programs element identifiers, each defining a specific program, that a Program Manager finds himself responsible.

As previously stated, the funds requirements projections for five (5) fiscal years are contained in the FYDP by program

element. This is also the case within the Air Force document compiling Air Force portions of the FYDP, the Air Force Force and Financial Plan (F&FP). Within these two compilations, the FYDP and F&FP, program element funds requirements are further subdivided into three cost categories: Research and Development costs, Investment costs, and Operating costs. Figure 6 (from Reference 4) demonstrates this relationship for the ten (10) FYDP major programs. Research and Development costs, which are non-recurring costs, extend technology and are associated with developing a new capability to the point where it is ready for production. Included in this category are the Research, Development, Test and Evaluation (RDT&E) appropriation (3600) and minor amounts of the Military Construction (3300) and Military Personnel (3500) appropriations. Investment costs, also non-recurring, are those required beyond development costs to introduce a new capability into operational use. These costs are sensitive to the rate of buildup of the force level and include the procurement appropriations (3010, 3020, 3080) as well as the Military Construction appropriation (3300). The final cost category, Operating costs, is dependent on the R&D and Investment costs. Operating costs, which are recurring costs, are those costs required to operate and maintain the military capability each year. As such, Operating costs are

dependent on the life span of the force level. Included in this cost category are the appropriations for Operation and Maintenance (O&M), 3400, and Military Personnel, 3500.

Accounting Classification

Before proceeding into a discussion of general information on the use and flexibility of funds, two further types of program coding used in accounting classifications will be presented. These codes are used in all areas of a program's activities, i.e. programming, budgeting, cost analysis, pricing, contracting, and accounting. These two codes which establish a common data base are: the Budget Program Activity Code (BPAC) and the Material Program Code (MPC).

The BPAC, a six-digit alpha-numeric code, is a subdivision or classification established below the appropriation level, e.g. 3010, to identify major budget programs and activities. It is applicable to the procurement and RDT&E appropriations. As an example, consider the 3010 Aircraft Procurement appropriation which has a number of subsidiary fund accounts below it. One of these subsidiary fund accounts is 11 0000 Modifications (Note: the subsidiary fund accounts for appropriations used on AFSC space programs will be presented in the specific chapters dealing with each appropriation). Below this 11 0000

subsidiary fund account, one BPAC is:

11 330B Modification for F-5E System

In the BPAC code, the first two digits identify the appropriation as well as the budget program (subsidiary fund account). The first digit specifies the appropriation, and the second the subsidiary fund account. The last four digits, which are assigned by Headquarters AFSC, identify the AFSC system/program/project.

The Material Program Code (MPC) is a six-digit code used with the BPAC in the accounting classification cited on accounting documents. It represents the major elements of a weapons system, including the major contractor breakout and a breakout by major Work Breakdown Structure (WBS) item.

All of the discussion in this chapter, to this point, has dealt with the various ways in which a Program Manager will find his program and his funds identified and the relationship between all of the identifiers. Within his program, the Program Manager would most likely only be concerned with his appropriation identifiers and program element number(s). His program control (financial and production) personnel would be concerned with not only the appropriation and program element identifiers, but also the BPAC, MPC, and other accounting identifiers. One place where all of these different identifiers come together is

the accounting classification cite used on accounting documents. Figure 7 (from Reference 4) shows two examples of accounting classification cites and how each of the different identifiers for a program are used in the cite.

Program Cost Groupings

Previously, the fact that program element funds requirements are subdivided into three cost categories (R&D, Investment, and Operating costs) was discussed. There is also a set of four cost groupings used to insure uniform formulation of program cost estimates. These are:

1. Above-the-Line costs are those costs for production systems that are programmed and controlled by mission and design series. These costs, contained in one BPAC for each weapon/support/command-control system, are further divided into mission equipment and supporting costs. Within the mission equipment costs are those costs for all items installed on the mission vehicle and ground-based control equipment, while supporting costs include costs for training devices, peculiar support equipment, data services, and site activation costs.
2. Below-the-Line costs are those costs for central pro-

curement for support not programmed on a system program basis such as industrial preparedness, component improvement, and modifications. The support activities may, in some instances, be identified to systems.

3. Engineering Change Order (ECO) costs are those costs necessary to incorporate approved engineering change proposals in the production line for systems in acquisition. This cost grouping applies only to the central procurement appropriations.
4. First Destination Transportation (FDT) costs are those costs required for the delivery of material from a procurement source outside the DOD supply system to the first usage or storage point in the Air Force.

Funds Phasing

With the knowledge of how the different funds/appropriations a Program Manager may be concerned with are identified and related to his program(s) identifiers, the next step is to gain an insight into what the time phasing of the usage of different appropriations is through the acquisition cycle for an AFSC space program. Figure 8 (from Reference 3) shows a general relationship of the type of appropriation versus system acquisition phase. How each type of appropriation fits

into the acquisition cycle is closely related to what may be procured with the particular appropriation. This is dealt with in the following chapters for each appropriation.

Funds Usage

Once a Program Manager receives released program direction and funds from AFSC for his program(s), formal actions may be undertaken to procure the supplies/services/systems necessary to support the program objectives within the restrictions established by higher authority (AFSC, USAF, DOD, Congress). These restrictions and guidance are contained in Program Management Directives, Program Authorizations, program deferrals, funding releases, and approval of the program's Determination and Findings (D&F). It is important to understand the Program Manager's use of funds must be within these restrictions; some required by law and some considered necessary in the management of funds by the Congress and the Executive Branch of the Federal Government, the DOD, the Department of the Air Force, and AFSC.

Four major financial milestones are normally associated with the use of specific funds within a program. These are: initiation, commitment, obligation, and expenditure. Emphasis in this section will be placed on the obligation, as this is the milestone at which the Federal Government is contractually,

i.e. legally, responsible to spend monies for systems/supplies/services being developed or procured. However, it is appropriate to provide the following definition of the milestones before proceeding into a discussion of obligations:

1. Initiation is the administrative input of the requirement and its estimated cost to the procurement system and the initial recording of the document in accounting records. They are based upon Purchase Request (AFLC/AFSC Form 36), Military Interdepartmental Purchase Request (MIPR), project orders, etc., and are recorded by the Comptroller upon receiving the documents.
2. Commitment is an administrative reservation of a negotiated amount of currently available funds which precedes obligation action and is normally based upon firm procurement directives, orders, requisitions, or requests. The documents forming the basis for a commitment are taken to indicate the intention to incur obligations and authorize the creation of an obligation without further approval of the official responsible for certifying the availability of funds. AFSC Form 276, Administrative Commitment Document (ACD), is used to commit funds within AFSC.
3. Obligation is the reservation (required by public

law) of a specific amount of funds associated with a firm contract or other obligating document, e.g. MIPR, project orders, or delivery orders. The specific amount reserved is either an estimate or the actual amount of the systems/supplies/services ordered and is carried in official accounting records pending completion of the contract. Upon distribution of a contract, the funds become obligated; while the point at which funds become obligated for other procurement actions (MIPR, project orders, etc.) varies. Obligations will be considered in more detail in the next section.

4. Expenditures are actual payments made against a particular contract or other obligations to a contractor or other Government agency. Included in expenditures are advance or progress payments made during the execution of a contract. Obligated funds which have not actually been paid (expended) are referred to as unliquidated obligations.

Obligations

Aside from the requirements of the PPBS cycle and the limitations on what each appropriation may be used to procure,

the subject of obligations and the various restrictions on them is one which every Program Manager should understand. This section will present general information related to obligation of funds with specific restrictions for different appropriations presented in the chapter for each appropriation.

The most important aspect of obligations to understand is the concept of maintaining obligations and expenditures within the amounts appropriated, apportioned, reapportioned, or otherwise subdivided by higher legitimate authority. When an obligation exceeds the amount of funds a program is authorized to spend, an over-obligation results. Public law provides penalties for overexpending appropriated funds. Over-obligation/overexpenditure is addressed in DOD Directive (DODD) 7200.1 (Reference 7). The purpose of this directive is to:

> "(a) Prescribe Department of Defense regulations designed to restrict obligations and/or expenditures against each appropriation or fund to the amount available therein, and, where apportionments or reapportionments of appropriations are required to be made, to the amounts of such apportionments or reapportionments, and (b) enable the Assistant Secretary of Defense (Comptroller) to fix responsibility for the creation of any obligation or the making of any expenditure in excess of an appropriation, apportionment, reapportionment, or subdivision thereof."

The Program Manager must implement strong controls within his organization to maintain visibility into his obligations versus available funds including sufficient reserves to allow for un-

expected funds requirements.

Of lessor impact in terms of potential penalty for violation is the mis-application of appropriated funds. An appropriation is an authorization by an act of Congress to make payments out of the United States Treasury for specific purposes. For each appropriation, Congress makes general specifications in the appropriation language and appropriation limitations for which the funds can be used and what must be or cannot be done with the appropriation, as well as dollar totals which cannot be breached. Funds cannot be used for other purposes without Congressional approval, and funds cannot be transferred from one appropriation to another unless expressly provided for by the Congress. Congress did allow DOD the authority to transfer up to $750 million between appropriations for all the Services in the FY 75 Appropriation Bill through the reprogramming process, but subject to a number of limitations including the right of disapproval by Congress of individual transfer items.

Funds made available by the Congress to the DOD have a certain lifetime, depending on which appropriation is involved. These lifetime limitations fall into one of the following three general categories:

1. Annual Appropriations are appropriations which are

available for incurring new obligations only during the fiscal year specified in the appropriations act. AFR 170-8 (Reference 5) specifies criteria which must be met by an obligation to qualify as an obligation against an annual appropriation.

2. Multiple-Year Appropriations are appropriations available for incurring new obligations for a specific period in excess of one year. AFR 170-8 also specifies requirements applicable to contracts obligating multiple-year appropriations. It further requires that obligations of multiple-year appropriations be for an effort authorized for the fiscal year in which the funds were appropriated. While there is a specific period in which new obligations of multiple-year appropriations can be made, the new obligations do not have to be incurred in the specific fiscal year in which the funds were appropriated. In the case of multiple-year appropriations, it is possible to have several appropriations of the same category, e.g. 3020, with overlapping availability periods. When this occurs, a procurement action authorized for a particular fiscal year must be obligated using the funds appropriated and made available starting that fiscal year

instead of similar type funds, e.g. 3020, currently available but appropriated in a prior fiscal year.

3. Continuing Appropriations are appropriations available for incurring new obligations until the funds are exhausted or the purpose is accomplished, without restriction as to a fixed period of availability time.

Each of the appropriations used in AFSC space programs falls into one of the three types of appropriations above, as succeeding chapters will define.

A brief discussion of what happens to appropriations after their new obligation availability lifetime expires is appropriate before the details of obligations are presented, as it completes the discussion of funds lifetime.

As specified in AFM 172-1, Volume I (Reference 6), when the new obligation lifetime of an appropriation expires, it becomes an expired appropriation and loses its program element identification. Unobligated balances of expired appropriations, which retain their fiscal year identity for two additional years, remain available for liquidation of obligations incurred in the original new obligation availability period of the funds. These funds may be used for target-to-ceiling increases, incentive fees, legitimate claims, and allowable overhead and contract cost overruns. However, scope of work enlargements or programmed

but unobligated requirements are considered new procurements and cannot be financed with expired funds.

At the end of the second full year following expiration of the new obligation availability lifetime for an appropriation, the appropriation lapses. At this point, it loses its fiscal year identity but retains the same appropriation classification, e.g. Missile Procurement, Air Force. Any unliquidated balances remaining in the lapsed appropriation are transferred to a merged Successor "M" Account. These accounts, established without fiscal year limitation, are available for payment of obligations chargeable to any of the appropriations from which the Successor "M" Account was derived. Payments from these accounts may be made for the same items and are subject to the same limitations as in expired appropriations. Further, funds from one Successor "M" Account, e.g. Missile Procurement, Air Force, may not be used to liquidate obligations made under an appropriation included in a different Successor "M" Account, e.g. Military Personnel, Air Force. This subject is addressed in more detail in AFM 172-1, Volume I.

A final point to be made in closing the discussion on funds lifetimes is that audits are made throughout the funds life cycle (new obligation phase, expired appropriation phase, and Successor "M" Account phase), and at any time an over-

obligation leading to an overexpenditure may be found and return to haunt the Program Manager. The prudent Program Manager will have established sufficient financial controls and established a sufficient management reserve to prevent over-obligation and its attendant heartaches.

As a result of the closed-end lifetime for new obligations of annual and multiple-year appropriations, the Air Force has established cutoff milestones for the obligation of funds. Similar milestones are established for the initiation, commitment, and expenditure of funds. These milestones exist for the procurement and RDT&E appropriations and will be discussed in the following chapters on those appropriations. However, it can be stated now that the general policy is to get funds obligated as soon as possible to prevent possible loss of the funds.

Before a discussion on obligations is completed, the subject of incremental versus full funding requires attention. In basic terms, full funding provides funds at the outset for the total estimated procurement cost of a given part of a program/item so that Congress can see the full scope and cost of the program/item. Full funding applies only to the procurement appropriations (3010, 3020, 3080). In the full funding concept, each year's appropriation request contains the funds estimated to be required to cover the total cost to be incurred in com-

pleting delivery of a given quantity of usable end items, such as missiles. The intent of this policy is that funds for the total estimated cost of an item be available in the year in which procurement action is initiated for that item. DOD policy on full funding is contained in DODD 7200.4 (Reference 7). Incremental funding, in contrast, consists of budgeting and placing on contract funds sufficient to ensure contract performance to the end of the fiscal year in which the funds were appropriated. This technique of funding applies to the RDT&E appropriation (3600), and principles to be used in funding RDT&E programs were specified in 1971 by the Senate Armed Services Committee in Senate Report 92.359. Under the incremental funding concept, the Government is not required to obligate and place on contract, funds for the total contracted effort; but it must obligate and place on contract funds necessary to cover the contractor's expenditures and unliquidated commitments to the end of the fiscal year. Further discussion of full and incremental funding is included in the chapters on the 3020 and 3600 appropriations.

Reprogramming

It may become necessary in a given fiscal year for a Program Manager to seek additional funding in one or more appro-

priations to support his program. The reasons why this could occur are many, but fortunately a system called reprogramming does exist, within which the additional funds may be provided. Within AFSC, responsibility for initiating and justifying a reprogramming request belongs to the Program Manager. However, reprogrammings can be directed by higher authority.

Reprogramming is the transfer of Congressionally appropriated funds and quantities from the original purpose intended to a related, or even entirely different purpose. Two basic restrictions apply to reprogramming actions, namely:

1. Reprogramming of funds or use of transfer authority will not be approved when the program/item for which reprogramming or transfer authority is being requested has been denied by Congress.
2. Reprogramming of funds or use of transfer authority will not be approved unless the program/item under consideration has a higher priority than those for which the funds were originally appropriated.

Within these two restrictions, the Air Force has authority to reprogram funds between R&D program elements and procurement line items in an appropriation so long as the cumulative amount transferred into a gaining budget activity or line item remains below a specified amount (threshold). This is referred

to as Below Threshold (B/T) reprogramming and may be accomplished without DOD approval. Specific thresholds for each appropriation are contained in the following chapter for that appropriation. However, the fact that a particular reprogramming action is within the threshold for that appropriation and meets the two basic reprogramming restrictions does not necessarily mean that the Air Force can proceed with the reprogramming.

Certain reprogramming actions require prior approval of the Senate and House Committees on Armed Services and Committees on Appropriations before accomplishing the reprogramming, irrespective of the amount of the reprogramming. For Air Force programs, the actions requiring prior approval are those:

1. Which reprogram funds under any appropriation to items or activities for which specific reductions in the amounts originally requested were made by the Congress.
2. Which increase the procurement quantity of an individual aircraft, missile, naval vessel, tracked combat vehicle, other weapon or torpedo and related support equipment, for which funds are authorized under 10 U.S.C.138.
3. Which involves the application of funds to items in which one or more of the Congressional Committees is known to have a special interest, or which by nature

of the action is known to be or has been designated as a matter of special interest to one or more committees.

Certain other reprogramming actions may be approved by the Office of Secretary of Defense (OSD) with the Congressional committees receiving only notification. These actions are those in which the Service appropriation reprogramming threshold is exceeded or for the reprogramming of any amount, in any appropriation, to a new proposal, line item, or program which was not previously justified to the Congress and which does not otherwise meet the criteria for prior approval. While this category of reprogramming action requires only notification to the Congressional committees, OSD normally waits to get comments/reactions on the reprogramming action from the committees before proceeding.

DODD 7250.5 (Reference 8) and DODI 7250.10 (Reference 9) contain requirements on the reprogramming of appropriated funds. Two general observations are appropriate at this point. First, those reprogramming actions requiring approval outside the Air Force are likely to take a significant amount of time and should not be relied upon as a fast source of financial help. Secondly, while reprogramming is a source of funds to an AFSC Space Pro-

gram Manager, it can also be a source of loss of funds if a reprogramming action takes place where the program office is the source rather than the recipient of the reprogrammed funds.

Chapter Summary

This chapter provided basic information required by the AFSC Space Program Manager in understanding specific information related to the appropriations applicable to his program. The tie between appropriation, program identifier, and various accounting classifications was presented. This was followed by discussion of the time-phasing of funds usage in the systems acquisition process and then the usage of funds. Attention was given the various aspects of obligation of funds including restrictions, funds lifetime, obligation milestones, and full versus incremental funding. The final portion of this chapter dealt with general details of reprogramming appropriated funds.

CHAPTER III

3600 APPROPRIATION; RESEARCH, DEVELOPMENT, TEST AND EVALUATION, AIR FORCE (RDT&E-AF)

Definition

The RDT&E appropriation for the Air Force, designated the 3600 appropriation, is comprised of two major categories: the mission program and the management and support program. Within the mission program is all RDT&E work performed under contract with private industry, educational institutions, Federal Contract Research Centers (i.e. not-for-profit companies such as Aerospace Corporation), and other Government agencies, as well as mission programs accomplished in-house. The management and support program includes all RDT&E work, as well as operation and maintenance of R&D facilities performed at Air Force facilities. The breakout of the 3600 appropriation into these two categories is supported by the general policy of DODI 7220.5 (Reference 11).

Efforts performed within the scope of the 3600 appropriation are collected into different subsidiary fund accounts depending on the effort. The subsidiary fund accounts within the 3600 appropriation are:

61 0000 Aircraft and related equipment

62 0000	Missiles and related equipment
63 0000	Military astronautics and related equipment
66 0000	Ordnance, combat vehicles, and related equipment
67 0000	Other equipment
68 0000	Military Sciences
69 0000	Program-wide management and support
60 1000	First destination transportation

The BPAC for a specific program element funded with 3600 funds will fall within one of the subsidiary fund accounts above. The first two digits of the BPAC would be the first two digits of the appropriate subsidiary fund account above; the last four BPAC digits would be the AFSC designator for the program.

Usage

From the discussion of Congressional appropriations and FYDP major programs in Chapter II, it might be assumed that the 3600 appropriation would apply only to program elements within FYDP Program 6, Research and Development. However, as indicated in Figure 3, such is not the case. A large percentage of the 3600 appropriation is used by program elements in the first four of the FYDP major program areas since, in many cases, some R&D testing remains to be completed even after the deci-

sion is made to produce the program's item for the inventory.

DODD 7220.5 and AFR 170-3 (Reference 11) specifies the types of cost to be financed by RDT&E appropriations in detail. For Air Force programs, AFM 172-1, Volume 1, specifies that the RDT&E appropriation is used for research, development, test items, test costs, and associated effort through completion of IOT&E (Initial Operational Test and Evaluation) type tests. As specified in AFM 172-1, the following type efforts are 3600 funded:

"1. R&D including basic research, applied research, theoretical studies, feasibility studies, design studies, and scientific experiments.

2. Systems engineering and developmental engineering through completion of IOT&E.

3. Fabrication of experimental models, prototypes, or the procurement, production or modification of articles under development for test and evaluation; the developmental and production engineering, tooling, and facilities required for such procurement and production.

4. Procurement and installation of specialized equipment required for research and development activities, except for standardized articles which are centrally-procured for use by both R&D and non-R&D activities.

5. Tests, experiments, and evaluation of developed items through completion of DT&E including scientific, technical and weapons effect experiments; engineer-user testing; initial tests, evaluation and validation of articles subcontracted or commercially procured or received from foreign sources; quality control and acceptance testing of articles procured with RDT&E funds.

6. Construction of facilities as described in AFR 172-9."

To further amplify the use of the 3600 appropriation funds, the discussion will now focus on three areas in which this appropriation may appear. The first is in a R&D program which is technology-oriented and requires no PPBS interface with another appropriation. The second involves the Management and Support interface in a R&D program, and the third R&D program is oriented to hardware for operational use and requires PPBS action for R&D and procurement funding concurrently.

The first of these types of R&D programs (technology-oriented) involves those AFSC programs in four sub-programs of FYDP Program 6. Within this area are research (6.1), exploratory development (6.2), advanced development (6.3), and engineering development (6.4). Each of these areas is addressed briefly below:

1. Research includes the scientific study and experimentation directed towards increasing knowledge in the physical, engineering, environmental, biological-medical, and behavioral-social sciences related to long-term national security needs. Research provides fundamental knowledge for the solution of identified military problems, but does not include efforts to prove the feasibility of solutions to these problems.

Tasks in research are conducted in program elements 61XXXF and are managed by AFSC Laboratories. Funding for these tasks are at a relatively constant level from one fiscal year to another ("level of effort funding"). Included in the Research category is the Laboratory Director's Fund, used to take advantage of any special breakthrough and to increase the technical competence of the laboratories.

2. Exploratory Development includes all effort supporting the solution of specific military problems, short of major development programs, directed toward developing and evaluating technical feasibility. These tasks are conducted within program elements 62XXXF, are managed by AFSC Laboratories, and are funded at a relatively constant level from one fiscal year to another. Development of inertial guidance components is an example of an Exploratory Development project.

3. Advanced Development includes projects that have moved into development of hardware for experimental or operational tests. The prime result of this effort is proof of design concept including hardware designed for test or experimentation rather than for service use. The Advanced Development area is characterized by budget

line-item projects and is conducted within program elements 63XXXF. Development of a tactical satellite communication system is an example of an Advanced Development project.

4. Engineering Development includes development programs in which the item is being engineered for service use but has not yet been approved for procurement or operation. Programs and projects classified as Engineering Development are initiated only in response to an approved military need and are conducted within program elements 64XXXF. Each project within a 64XXXF program element is controlled by a Headquarters, USAF Program Element Monitor (PEM). An example of an Engineering Development project is the development of an advanced manned bomber.

The second type of R&D programs to be discussed are those involving Management and Support. These tasks involve efforts directed toward support of installations or operations required for use in general research and development, such as Headquarters, AFSC; acquisition divisions (e.g. Space and Missiles Systems Organization); test and evaluation (T&E) activities (e.g. Space and Missiles Test and Evaluation Center); and acquisition and command support telecommunications. Also contained within the

program elements (65XXXF) for this task are the various Federal Contract Research Centers, such as Aerospace Corporation, which provide engineering support on a contract basis. It should be noted here that users of T&E facilities reimburse those facilities for all direct costs.

The third type of R&D program is Operational Systems Development which includes R&D efforts directed toward the development, engineering, and test of systems, support programs, vehicles and weapons that have been approved for production and service employment. This type of R&D is not a part of FYDP Program 6 (R&D) but rather includes development within FYDP Programs 1, 2, 3 or 4 as shown in Figure 3. The tracking of this type of R&D effort within the Air Force programming and budgeting system is by 3600 appropriation subsidiary fund account number and program element identifier together (program element identifier identifies which FYDP program is involved). As stated previously, Operational Systems Development funding will most likely have to be integrated with procurement funding in a budget submission; but the decision as to what should be RDT&E (3600)-funded versus what should be procurement-funded may not be readily apparent. AFM 172, Volume I, provides criteria (shown in Table I) to be used as a basis for making

a determination of whether an effort should be RDT&E-funded or procurement-funded. One point not covered expressly in Table I is that of funding component or product improvements for in-production hardware (as well as out-of-production hardware). If such a task is undertaken with the specific intention of re-designing, expanding, or improving the component/product's performance outside the then current (specification requirements in a production contract) performance envelope, the task will be funded by the 3600 appropriation.

Figure 9 provides a pictorial representation of the general phasing of R&D programs versus acquisition cycle phase. This figure shows how more than one type of R&D program funding may be used in a particular acquisition cycle phase.

Obligation

The 3600 appropriation is a multiple-year appropriation, as defined in Chapter II; and, as such, is available for new obligations for a period of two fiscal years. At the end of the two fiscal years, it becomes an expired appropriation and follows the sequence of events outlined in Chapter II. Even though the 3600 appropriation has a new obligation authority lifetime of two fiscal years, Congressional direction requires budget submits of one fiscal year for contractual obligations

of a 3600 appropriation. In consonance with this policy, 3600 funds are appropriated for specific increments of work to be accomplished during the fiscal year for which the funds are approved. AFSCR 27-6 establishes financial milestones, calling for obligation of 25% of a program's new 3600 appropriation funds in each of the first four quarters after the start of the fiscal year for which the funds were appropriated. Forward financing is a term given to the placing of 3600 funds on a contract in excess of the amount necessary to insure contract performance through the end of the fiscal year in which the funds were appropriated. The amount considered necessary to ensure contract performance through the end of any fiscal year is, by definition, the contractor's total accrued expenditures and unliquidated commitments. Forward financing requires a waiver, although certain exceptions to the restriction on forward financing are specified in AFM 172-1, Volume I. Because of this policy against forward financing, R&D efforts (3600 appropriation) are incrementally funded. R&D contracts may be written for the complete effort; however, funds are obligated for the current fiscal year only. Early in each subsequent fiscal year, additional 3600 funds are obligated to the applicable contract.

Reprogramming

For the RDT&E appropriation, the Below Threshold (B/T) reprogramming limit is a cumulative reprogramming increase of $2 million or more in any program element, including addition of a new program element of $2 million or more, or the addition of a new program element estimated to be $10 million or more within a three year period. Reprogramming actions outside these thresholds require DOD approval and notification of the appropriate Congressional committees. All reprogramming action, of course, remains subject to the criteria under which prior Congressional approval is required. AFSC, within the above limits, may reprogram 3600 funds among individual tasks within a project or within a program element that has no controlled project breakout. For programs in the research and exploratory development areas, the Laboratory Director has authority to reprogram between approved projects within a program element.

Chapter Summary

All Air Force 3600 funds are allocated to AFSC for allotment to the various programs. This chapter presented discussion of the items which can be procured with the 3600 appropriations, the new obligation lifetime of this appropriation,

the concept of forward financing, and the reprogramming threshhold for this appropriation.

CHAPTER IV

3020 APPROPRIATION; MISSILE PROCUREMENT AIR FORCE

Definition

The Missile Procurement appropriation for the Air Force, designated the 3020 Appropriation, finances the procurement of missile weapon systems, operational space systems, modifications, investment-type spares, component improvements, missile industrial facilities, miscellaneous missile requirements, site activation, technical data, and first destination transportation. Efforts performed within the scope of the 3020 appropriation are collected into different subsidiary funds accounts depending on the type of effort. The subsidiary fund accounts for the 3020 appropriation are:

20 0000	Missile weapon system
21 0000	Missile modifications
22 0000	Replacement equipment
23 0000	Space programs
24 0000	Missile industrial facilities
25 0000	Replenishment spares and repair parts
26 0000	Initial spares and repair parts
27 0000	Headquarters, USAF Special Projects

28	0000	Procurement other than USAF
29	0000	Other charges
30	2000	First destination transportation
99	3000	Appropriation refunds on transportation of persons and things

As was true for the 3600 appropriation, the BPAC for a specific program element funded with 3020 funds will fall within one of the subsidiary fund accounts above. Here, too, the first two digits of the BPAC indicate which of the above subsidiary fund accounts the program elements belong to.

Usage

The 3020 appropriation funds the procurement, activation, and installation of missile equipment/systems that have been approved for service use following Development Test and Evaluation (DT&E). Within this general usage criteria, certain specific situations/criteria determine when use of the 3020 appropriation is required. These situations/criteria will be discussed in the following paragraphs.

In the preceding chapter on the 3600 appropriation, the fact that there is no fine dividing line between what should be R&D-funded versus procurement-funded was presented. Table I

was provided to provide a general basis for determining how a task should be funded. To further expand on this subject, some additional consideration will be given to the instance when the production contract starts prior to completion of all test objectives. This can result from such items as long procurement lead times or the procurement full funding concept. Before releasing the production contract, a standard product configuration based on the Functional Configuration Audit (FCA) will have been established. This, in effect, specifies the items to be procured as standard production items even though they may be subject to engineering changes and/or minor modifications due to system growth or improvement incorporation. As long as the item is designated a standard production item, the procurement appropriation is used even though the procured items may be used by R&D agencies in support of their tasks. However, if the procured item must be changed for R&D efforts and then restored to its original configuration, the R&D appropriation will pay for this modification-demodification effort.

The next area for discussion on usage of procurement funds is component/product improvement. Component/product improvement includes the engineering effort required on systems/equipment in production, scheduled for production, or out of production to accomplish any or all of the following:

1. Improve the function or performance of the equipment.

2. Effect the redesign of equipment to increase its producibility.

3. Improve reliability or durability of the equipment.

The procurement appropriation finances the task, if it is undertaken, to provide solutions to specific problems surfaced, after qualification tests, in operational usage or testing. Improvements within the established performance envelope of the system, or specification requirements of the production contract for in-production hardware, are funded by the procurement appropriation; while the 3600 appropriation funds performance improvements outside the specification requirements in the production contract. If the system/item in question is out-of-production, the operation and maintenance (3400) appropriation funds the performance improvements which the procurement appropriations fund for in-production hardware.

Modifications and maintenance of procured items comprise another area in which the procurement appropriation is used. As defined in Reference 6:

> "Modification is the alteration, conversion, or modernization of a major end item or equipment which changes or improves the basic character, purpose, or operational capability in relation to effectiveness, efficiency or safety. Maintenance is the routine, recurring work conducted to maintain a major end item or equipment at its intended capability or designed performance."

AFM 172-1, Volume I, specifies which appropriations (R&D, procurement, or operation and maintenance) will fund modification engineering, kits, and kit installation for modernization, update modification, or other type modification to a system. Of special interest to the Program Manager of an AFSC space program is the cost of modifying or reconfiguring a missile. When the modification or reconfiguration is to a missile no longer in production to meet a mission requirement, other than that for which the last missile was initially procured, the 3020 appropriation (subsidiary fund account 21 0000) is used for funding. If this modification/reconfiguration program results in the missile being placed into the acquisition phase, AFSC will program and budget for the modification. Further, when a missile is modified for use as a space booster requiring removal of unnecessary hardware for reliability, the using organization will provide the funds.

Several areas of lesser, but important concern remain to be discussed under the procurement appropriation subject. These items will be presented briefly here, while details on each of the subjects are in AFM 172-1, Volume I.

One topic of increasing concern to the Program Manager now is missile propellants, due to the tremendous increase in cost of these propellants. The 3020 procurement appropriation

funds the cost of missile propellants (liquid or solid) used in the production or initial loading of production missiles at the contractor's plant during system acquisition and/or at the launch base during launch operations.

A Program Manager may find that some items of Government Furnished Equipment (GFE) procured by his program require return to the producing GFE contractor or Air Force depot for rework/repair prior to installation in the end item of equipment. If the end item of equipment has not been accepted by the Air Force, the repair of the defective GFE will be funded from the same appropriation as the end item of equipment, i.e. 3020 if the end item is 3020 procured. If the end item of equipment has been accepted by the Air Force, the O&M appropriation (3400) funds the GFE repair.

Technical data is another item with which the Program Manager is concerned. When the technical data is procured with a system end item, it is funded from the same appropriation, e.g. 3020, as is being used to procure the end item. Follow-on procurement of technical data, however, is funded with the 3400 (O&M) appropriation.

Although this section has presented specific data on use of the 3020 appropriation, the data is equally applicable to the Aircraft Procurement (3010) and Other Procurement (3080)

appropriations.

Obligation

The 3020 appropriation is a multiple-year appropriation, as defined in Chapter II; and is available for new obligations for a period of three fiscal years. At the end of three fiscal years it becomes an expired appropriation and follows the sequence of events outlined in Chapter II. Even though the 3020 appropriation has a new obligation lifetime of three fiscal years, AFSCR 27-6 defines financial milestones for obligation of a program year's 3020 appropriation such that 100% obligation is achieved on systems procurements at the end of the second fiscal year from the start of the fiscal year for which the funds were appropriated. For non-systems procurement, the milestones call for 100% obligation at the end of the sixth quarter from the start of the fiscal year for which the funds were appropriated. AFSCR 27-6 also defines derived quarterly commitment and expenditure percentages for system program and non-systems procurements leading to 85% and 100% points.

While the 3600 appropriation-funded tasks are incrementally funded, programs funded by procurement appropriations are fully funded. The underlying concept of the full funding principle was explained in Chapter II, but some amplification

is presented here. AFM 172-1, Volume I, lists tests to determine that an item being procured in one fiscal year meets the full funding criteria. Although a procurement, production, and delivery of systems/equipment is financed by one fiscal year's procurement appropriation (full funding), four or more years may actually be required to complete these actions. There are certain allowable deviations from a total full funding concept which provide some flexibility to the Program Manager, and a discussion of these follows.

DODD 7200.4 and AFSCR 27-6 recognize that circumstances arise in which the lead time for procuring components is significantly longer than that required for procuring the end item itself. Under certain conditions, the procurement of these long lead time items is permitted in advance of the fiscal year in which the related end item is to be procured. Two general requirements must be met before long lead time items may be procured:

1. Procurement lead time of the component under consideration must be significantly longer than other components of the same end item.
2. Cost of the components procured as long lead time items must be relatively low as compared to that portion of the end item costs for which funding is deferred.

This procurement of long lead time components is referred to as "Advance Buy" in the prior fiscal year program. The dollar amount of the advance buy is subtracted from the following fiscal year program estimate (the year the related end item quantity is procured). While Congress has accepted the advance buy concept to facilitate certain procurement programs, each case must be specifically identified and justified on its merits.

A second type of flexibility is referred to as multi-year procurement, which uses "full funding" programming but actually contracts for more than one fiscal year's quantity to achieve a more economical buy. This contract is financed one year at a time as would be done for a single year procurement-type contract, and the quantity contracted for each fiscal year is at the same unit price. Funds programmed must include the cost of the item quantities for a given fiscal year, plus an allowance for cancellation costs should the succeeding fiscal year quantity be cancelled. Identification of contract end item must be separate for each fiscal year's order so that program integrity is maintained by fiscal year. When this procurement method is used and more than one program year funds are cited on the contract, each program year quantity and funds must meet the full funding principles.

The final flexibility made in the full funding concept relates to Aerospace Ground Equipment (AGE) and spares. These two categories of items do not have to be procured or budgeted in the same fiscal year as the system end item which they support. Instead, programming and budgeting of these items of support equipment is done to insure their availability consistent with the planned delivery of the major system end item.

In concluding the discussion on the full funding aspects of the procurement appropriation it must be noted that, to the extent that a specific full funded program cannot be obligated within the period for which the funds were justified and approved, any additional funding required for program completion must be recognized in future years as a new requirement.

Reprogramming

For the 3020 procurement appropriation, the Below Threshold (B/T) reprogramming limit is a cumulative reprogramming increase of $5 million or more in a line item or the addition of a $2 million (or more) line item. Reprogramming increases which exceed these thresholds require DOD approval as well as notification to the appropriate Congressional committees. As before, all reprogramming action remains subject to the criteria under which prior Congressional approval is required. In the procure-

ment appropriations, AFSC may reprogram between or among "above-the-line" Material Program Codes (MPC) within a BPAC, but not between BPAC's (except for advance buys in aircraft and missile procurements and Force Modernization in the 3020 appropriation).

Chapter Summary

This chapter presented discussion of the items which can be procured with the 3020 appropriation, the new obligation lifetime of this appropriation, the concepts of advance buy and multi-year procurement, and the reprogramming threshold of this appropriation. To a large extent, the information presented in this chapter on obligation and reprogramming, as well as some usage information, applies not only to the 3020 but also the 3080 and 3010 appropriations. This information will be identified in the later chapter on the 3080 appropriation.

CHAPTER V

3080 APPROPRIATION; OTHER PROCUREMENT, AIR FORCE

Definition

The Other Procurement, Air Force, appropriation, designated the 3080 appropriation, finances the procurement of direct and indirect ground weapon support equipment, other industrial facilities (not provided by 3020 or 3010 appropriations), equipment modifications, investment-type spares, and first destination transportation. Included in this appropriation is the installation/emplacement of the equipment, production, product improvement, testing, and end item associated technical data and handbooks.

Efforts performed within the 3080 appropriation are collected, as for other appropriations, into different subsidiary fund accounts. For the 3080 appropriation the subsidiary fund accounts are:

81 0000	Munitions and associated equipment
82 0000	Vehicular equipment
83 0000	Crypto and other security equipment
84 0000	Electronic & Telecommunications equipment
85 0000	Other base maintenance and support equipment

86 0000	Other industrial facilities
87 0000	Procurement other than USAF
88 0000	Equipment modification
30 8000	First destination transportation
99 3000	Appropriation refunds on transportation of persons and things

The BPAC for a specific program element funded with 3080 funds will be within one of the above subsidiary fund accounts, with the first two digits of the BPAC indicating which subsidiary fund account the program element lies within.

Usage

Any discussion on the general usage criteria of the 3080 appropriation draws directly upon the discussion for the 3020 missile procurement appropriation. Table I remains applicable for use as a basis in determining whether a particular task should be R&D (3600) or procurement (3080) funded once a determination is made that 3080 is the proper procurement appropriation for the item. Similarly, the information presented in Chapter IV regarding beginning production before testing is complete (discussion on standard product baseline determination) and component/product improvements is as applicable to the 3080 appropriation as it was for the 3020 appropriation. This

material is not repeated here, but may be found in Chapter IV in the Usage section. Similary, except as specifically denoted as applying to the 3020 appropriation, the information in the Chapter IV, Usage section, on modifications/maintenance also . applies to the 3080 appropriation and is not repeated here.

Some special usages of the 3080 appropriation not common to the other procurement appropriations are briefly discussed in the following paragraphs. These usages are restricted to items with which an AFSC space program manager might be concerned.

In the area of the industrial facilities and equipment, the 3080 appropriation, as opposed to O&M funding, may be used to modify and/or maintain some equipment supplied as part of command installations, such as AC&W and/or DEW Line sites.

The 3080 appropriation is used in some instances in financing the procurement of Real Property Installed Equipment (RPIE) and portable equipment. AFM 172-1, Volume I, specifies the cases where the 3080 appropriation should be used dependant upon the circumstances under which the RPIE/portable equipment is procured and installed, as well as what type of equipment is actually being procured.

The final items of 3080 appropriation usage to be discussed are the repair of defective GFE and the procurement

of technical data. Both of these types of items are procured for the 3080 appropriation in the same manner as discussed for the 3020 appropriation in Chapter IV.

Obligation

The 3080 appropriation is also a multiple-year appropriation, as defined in Chapter II, and is available for new obligations for a period of three fiscal years. At the end of this new obligation lifetime period, it becomes an expired appropriation and follows the sequence of events outlined in Chapter II. The criteria/restrictions related to commitment, obligation, and expenditure financial milestones, and the full funding concepts (with flexibility considerations) discussed in Chapter IV for the 3020 appropriation, also apply to the 3080 appropriation. These criteria/restrictions are not discussed here to avoid repetition.

Reprogramming

As a procurement appropriation, the 3080 appropriation also has a Below Threshold (B/T) reprogramming limit identical to that for the 3020 appropriation. This reprogramming limit is a cumulative reprogramming increase of $5 million or more in a line item or the addition of a $2 million (or more) line

item. Reprogramming actions outside this threshold require DOD approval and notification of the appropriate Congressional committees. All reprogramming action, of course, remains subject to the criteria under which prior Congressional approval is required. As was the case for the 3020 appropriation, in the 3080 appropriation AFSC may reprogram between or among "above-the-line" Material Program Codes (MPC) within a BPAC but not between BPAC's (exception discussed for the 3020 appropriation does not apply for the 3080 appropriation).

Chapter Summary

This chapter presented specific information related to the 3080 appropriation, while relying heavily on use of material previously presented for the 3020 appropriation. The depth of discussion, however, was not as great as for the 3020 appropriation, since the Program Manager for an AFSC space program would be more likely involved with 3020 rather than 3080 funds.

CHAPTER VI

3400 APPROPRIATION; OPERATION AND MAINTENANCE, AIR FORCE

Definition

The Operation and Maintenance appropriation for the Air Force is designated the 3400 appropriation. The main purpose of this appropriation is to provide support and maintenance of Air Force operations and facilities. In support of this general purpose, the 3400 appropriation provides for operating and maintaining: aircraft and missile equipment, installations and facilities (depots, printing and reproduction plants, schools, hospitals, dispensaries, etc.). The budget structure within this appropriation is the major program/program element structure used in the FYDP, e.g. 01- Strategic Forces.

Within AFSC the 3400 appropriation is used to fund the operation and maintenance of key AFSC field organizations. AFSCR 27-6 lists organizations and activities within AFSC funded from the 3400 appropriation. Organizations of interest to the Program Manager of an AFSC space program which are funded from the 3400 appropriation include: the Air Force Eastern Test Range (AFETR), the Air Force Contract Management Division (AFCMD), and the Air Force Satellite Control Facility (SAMSO/

AFSCF). Also funded with the 3400 appropriation is the Titan III space booster launch operations support.

Usage

AFM 172-1, Volume I, provides policy and procedures associated with routine type items associated with operations and maintenance such as host-tenant relationships, temporary duty travel, medical support program, transportation of property, etc. While these items may seem routine, they may well claim a share of the Program Manager's attention.

Aside from the routine O&M-type efforts, the 3400 appropriation funds certain "non-routine" tasks. One example of this has been previously mentioned, i.e. funding of the Titan III space booster launch operations. Other items have been alluded to in the chapters on the R&D and procurement appropriations, and these will be discussed below.

For out-of-production hardware, the 3400 appropriation finances component/product improvement undertaken to provide solutions to specific problems which have been identified in operational usage or testing after military qualification tests. However, specifically excluded are efforts directed toward increasing the performance beyond specification requirements contained in the production contract.

Modification and maintenance of procured items was discussed in Chapter IV, based on criteria specified in AFM 172-1, Volume I. The installation of certain classes of update modification kits is funded with 3400 appropriation funds, dependent upon the use of and original appropriation funding for the update kit. Certain classes of labor, material, and data reduction for modifications other than modernization and update are also funded by the 3400 appropriation. AFM 172-1, Volume I, specifies when the 3400 appropriation is appropriate for the two types of modification mentioned above.

The 3400 appropriation is also used to fund some contractor engineering services after completion of acquisition. Among these engineering services which are funded with the 3400 appropriation are:

1. Engineering services required for establishing or revising operational or maintenance procedures.
2. Engineering services or studies required for some testing and analysis efforts.
3. Engineering services required subsequent to testing of a modification program.

Criteria for determining which engineering services are 3400 funded are in AFM 172-1, Volume I.

The repair of defective GFE was introduced in Chapter IV

for the procurement appropriation. Subsequent to Air Force acceptance of the end item of equipment in which the GFE is to be installed, the cost of repair of GFE components, including those not procured or required for initial installation into an in-production end item, is chargeable to the 3400 appropriation.

Procurement of follow-on technical data, as well as previously procured data that has become unavailable for use, is funded from the 3400 appropriation. Also funded by the 3400 appropriation are some items of Real Property Installed Equipment (RPIE) and portable equipment. AFM 172-1, Volume I, provides guidelines for determining when the 3400 appropriation should be used for procuring technical data and RPIE/portable equipment.

Obligation

The 3400 appropriation is an annual appropriation, as defined in Chapter II; and is available for incurring new obligations only during the fiscal year specified in the appropriations act. As an annual appropriation, the 3400 appropriation does not fall within the incremental or full funding concepts. Each year, the DOD Appropriations Act limits obligations

of annual appropriations during the last two months of the fiscal year to 20% of the amounts appropriated, with minor exceptions. AFM 172-1, Volume I, contains Air Force policy on the application of obligation limitation to Air Force appropriations.

At the end of the fiscal year, the appropriation becomes an expired appropriation and follows the sequence of events outlined in Chapter II.

Reprogramming

For the 3400 O&M appropriation, the Below Threshold (B/T) reprogramming limit is a cumulative reprogramming increase of $5 million or more in a budget activity. Reprogramming actions outside this threshold require DOD approval and notification of the appropriate Congressional committees; but, in any case, reprogramming is subject to the requirement for prior Congressional approval. AFSC has authority to adjust allocated O&M funds between program elements within budget activities.

Chapter Summary

This chapter presented specific data related to the usage, obligation, and reprogramming of the 3400 O&M appropriation.

Examples of uses of this appropriation in support of AFSC space programs were presented, as were the general class of O&M support items.

CHAPTER VII

3300 APPROPRIATION; MILITARY CONSTRUCTION, AIR FORCE

Definition

An appropriation of potential significance to an AFSC Program Manager in space programs is Military Construction Program for the Air Force, designated the 3300 appropriation. This appropriation provides for acquiring, constructing, installing and equipping temporary or permanent public works, military installations and facilities for the regular Air Force. Included in this appropriation are: planning and design, major construction inside and outside the United States, minor construction, and support activities. Each of these items is reflected in one of the following 3300 appropriation subsidiary fund accounts:

310 Project planning and design.

320 Major construction inside the U. S.

330 Major construction outside the U. S.

340 Minor construction.

350 Support activities.

993 Appropriation refunds on transportation of persons and things.

The difference between major and minor construction should be addressed at this point, as there are separate subsidiary fund accounts for each type construction. Major construction projects are (for the 3300 appropriation) all those construction projects for the active forces except those that qualify under 10 U.S.C. 2674 as minor construction projects. Minor construction projects are fast amortizing (within 3 years) and urgently required construction projects not otherwise authorized by law, and having a funded cost of $300,000 or less for the active forces.

Usage

Military construction programs include all acquisition of land; acquisition and/or construction of facilities; additions, expansions, extensions, conversions, alterations, or replacement of existing facilities; the relocation of facilities from one installation to another; and all equipment installed in and made a part of real property structures and improvements except for associated production and movable equipment. The primary objective here is to assure that the military construction appropriation finances all cost of military construction program.

Two categories of military construction projects are

identified in AFSCR 27-6: support/technical projects and systems support/special project. Within the support/technical projects are base support and RDT&E facilities not directly attributable to a specific system. The systems support/ special projects, documented and justified by the AFSC field organization responsible for the program, involve facilities required for a specific program, such as space, ballistic missile, electronic, etc. Technical support requirements (TSRP) peculiar to a system and non-technical support requirements (NSRP) directly related to a system make up system facilities.

Obligation

The 3300 appropriation is a continuing (no-year) appropriation as defined in Chapter II. As such, it does not expire for obligation purposes. However, there is a more distinctive characteristic of the 3300 fund, in that it requires separate Congressional authorization and appropriation bills from the other appropriations, i.e. R&D, procurement, O&M, and military personnel. Further, specific Congressional authorizations are required for work to be performed under major construction programs; while separate legislative authority is required for other construction programs. AFM 172-1, Volume I, specifies

certain restrictions on beginning and funding military construction projects within the general restriction that no approved project can be started unless it can be financed to completion from the initially available appropriated funds. Also specified are the conditions under which substitution of one authorized project for another may be done.

Reprogramming

The basic reprogramming restrictions in Chapter II do not apply to the 3300 military construction appropriation, as most funds appropriated in this appropriation are major construction budget activities authorized a percentage change by the appropriation language. As the 3300 appropriation bill is separate from the appropriation bill for procurement, R&D, O&M, and military personnel, funds in the 3300 appropriation cannot be reprogrammed to other appropriations. AFSC does, however, have the authority to move project planning and design funds (313) in only the current and two prior years. AFSC may use funds older than two prior years with Headquarters, USAF approval.

Chapter Summary

This chapter presented a very brief summary of pertinent

facts related to the usage, obligation, and reprogramming of 3300 military construction funds. It must be noted that while the discussion was limited to the 3300 appropriation, other military construction appropriations for the Air Force also exist. These other military construction appropriations were not considered to be of significant interest to a Program Manager of an AFSC space program to warrant their inclusion.

CHAPTER VIII

SUMMARY

This paper was prepared to serve as an overview to funds management of an AFSC space program. While the material contained in this paper was extracted from the regulations and other documents listed in the Bibliography, this paper in no means is a substitute for those documents in determining authority, requirements, and restrictions regarding appropriations. This paper should make new program management personnel conversant in the general features of each appropriation, as well as possibly triggering them to look further into some of the flexibility features of each appropriation.

Only the appropriations listed as subjects for Chapters III-VII were presented in this paper. Other specific Air Force appropriations exist in O&M, procurement, military construction, and military personnel; but these were not felt to be of significant concern to an AFSC space Program Manager to include in this paper.

The Program Manager who masters the information contained in this paper will find himself better able to cope with the dynamic financial environment he is likely to encounter in his job.

APPENDIX A

LIST OF FIGURES

RELATION OF MISSION AREAS TO APPROPRIATION

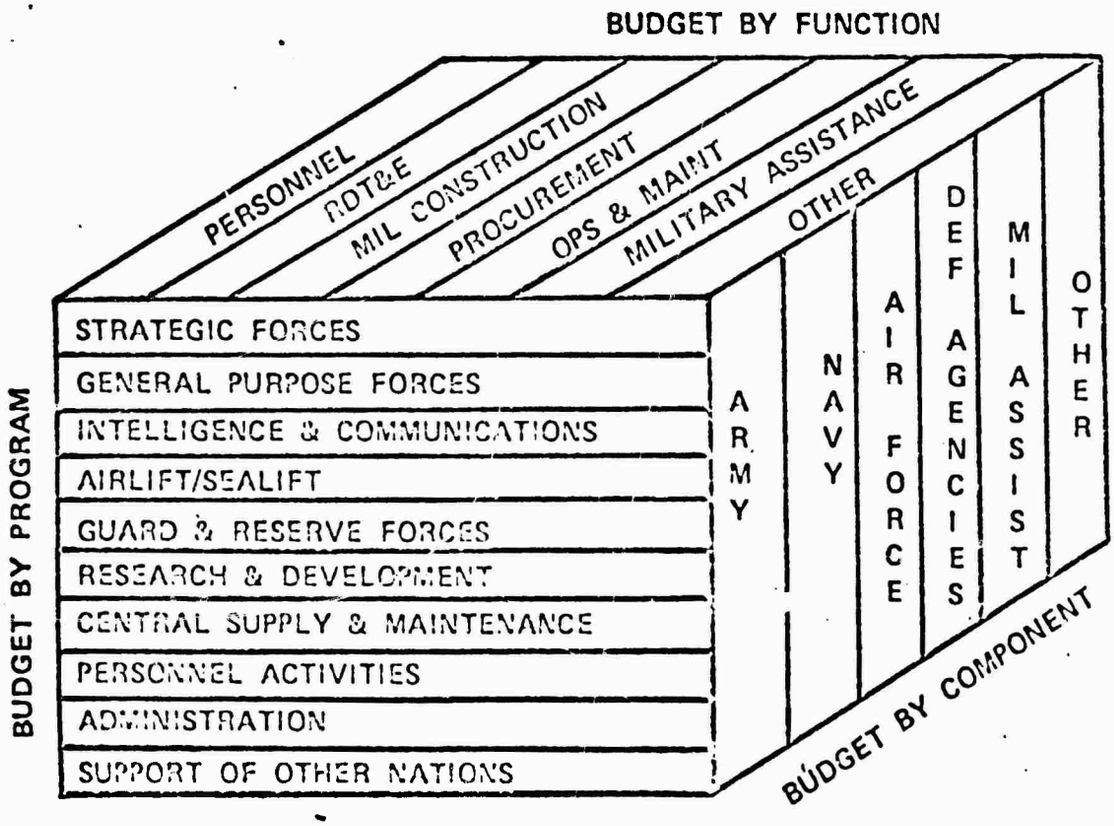


FIGURE 1

PROGRAM/APPROPRIATION/BUDGET RELATIONSHIP

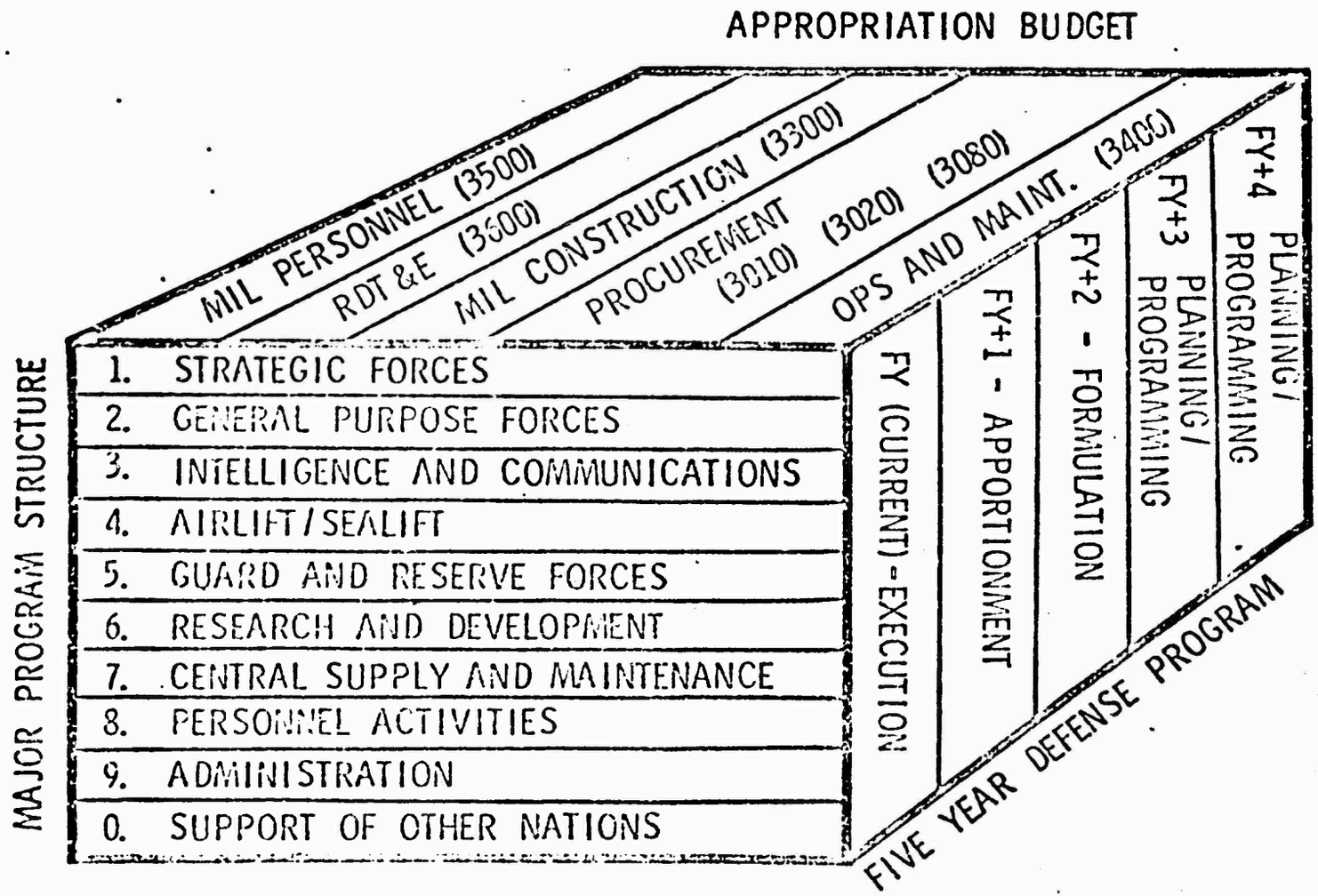


FIGURE 2

PROGRAMS VERSUS APPROPRIATIONS										
PROGRAMS / APPROPRIATIONS	I STRATEGIC FORCES	II GENERAL PURPOSE FORCES	III INTELLIGENCE & COMMUNICATIONS	IV AIRLIFT/SEALIFT	V GUARD AND RESERVE FORCES	VI RESEARCH & DEVELOPMENT	VII CENTRAL SUPPORT & MAINTENANCE	VIII TRAINING, MED, & OTHER GEN PERS. ACTVS.	IX ADMIN & ASSOC. ACTIVITIES	X SUPPORT TO OTHER NATIONS
3010, 3020, 3080										
3300 MIL. CONST.						X				
3400 O&M,AF										
3500 MIL. PERS.						X				
3600 RDT&E	X	X	X	X	X	X	X	X	X	X
3700 RESERVE PERS.										
3800 NAT. GUARD										
0700 MIL.FAM.HOUS.						X				

Definition: R&D resources consist of the resources scheduled in Program VI plus the RDT&E funds scheduled in the other programs. Only the four appropriations indicated may be scheduled in Program VI. The remaining appropriations may be scheduled in all programs except Program VI. The "X" in the above matrix indicates possible distribution of R&D resources.

FIGURE 3

PROGRAM ELEMENT STRUCTURE

1	F	STRATEGIC FORCES–AIR FORCE
11	F	OFFENSIVE FORCES
111	F	AIRCRAFT
112	F	MISSILES
113	F	COMMAND CONTROL & COMMUNICATION
11316	F	SAC COMM
12	F	DEFENSIVE FORCES
121	F	AIRCRAFT
122	F	MISSILES
123	F	COMMAND CONTROL & COMMUNICATION (C^3)
124	F	DEFENSE SUPPORT
12417	F	CONUS OTH RADAR SYSTEM
2	F	GENERAL PURPOSE FORCES–AIR FORCE
21	F	COMMANDS
27	F	SQUADRON
274	F	TACTICAL SYSTEMS
27412	F	TACTICAL AIR CONTROL SYSTEM
28	F	JOINT CHIEFS OF STAFF
3	F	INTELL AND COMMUNICATIONS–AIR FORCE
310	F	INTELLIGENCE AND SECURITY
320	F	COMMAND SYSTEMS
331	F	COMMUNICATIONS
34	F	SPECIAL ACTIVITIES
35	F	MISSION
35111	F	WEATHER SERVICE
35114	F	TRAFFIC CONTROL, APPROACH & LANDING SYSTEM

Program Element Structure

FIGURE 4

PROGRAM	6	RESEARCH AND DEVELOPMENT
R&D	61	RESEARCH
CATEGORY	62	EXPLORATORY DEVELOPMENT
	63	ADVANCED DEVELOPMENT
	64	ENGINEERING DEVELOPMENT
	65	MANAGEMENT AND SUPPORT
BUDGET	0	R&D Sup From Other Appropriations
ACTIVITY	1	Research (Military Sciences)
	2	Aircraft and Related Equipment
	3	Missiles and Related Equipment
	4	Military Astronautics
	5	Ships and Small Craft
	6	Ordinance and Combat Vehicles
	7	Other Equipment
	8	Management and Support
SERIAL NR	00	Serial or Identification Number
COMPONENT	A	Army
	B	Defense Mapping Agency
	C	Defense Civil Prep Agency
	D	Office Sec of Defense
	E	Def Advance Research Proj Agency
	F	Air Force
	G	National Security Agency
	H	Defense Nuclear Agency
	J	Joint Chiefs of Staff
	K	Defense Communications Agency
	L	Defense Intelligence Agency
	M	Marine Corps
	N	Navy
	R	Defense Contract Audit Agency
	S	Defense Supply Agency
	T	Defen[illegible] Security Admin Agency
	V	Defense Investigation & Security

Program Element Structure

FIGURE 4 (CONT'D)

FIGURE 5

I. THE Five Year Defense Program is made up of these major force programs:

A. Strategic Forces
B. General Purpose Forces
C. Intelligence and Communications
D. Airlift/Sealift (Sometimes referred to as Mobility Forces)
E. Guard and Reserve Forces
F. Research and Development
G. Central Supply and Maintenance
H. Training, Medical, and Other General Personnel Activities
I. Administration and Associated Activities
J. Support of Other Nations

FIVE YEAR DEFENSE PROGRAM

Outline of Program Structure
(with selected *examples* of program elements)

1. STRATEGIC FORCES
  11XXX. *Offensive Forces*
    11113F: B-52 Squadrons
    11213F: Minuteman Squadrons
    11221N: Fleet Ballistic Missile System
  } Program Elements
  12XXX. *Defensive Forces*
    12114F: F-106 Squadrons
    12214A: Sentinel System
    12427N: SPASUR
  13XXX. *Civil Defense*
    13111C: Shelter Survey

2. GENERAL PURPOSE FORCES
  21XXX. *Unified Commands*
    21114O: PACOM
  22XXX. *Forces (Army)*
    22113A: Infantry Divisions
    22122A: Mechanized Brigades
    22222A: Helicopter Companies (Medium)
    22233A: Hawk Battalions
    22313A: Construction Engineering Battalions
  23XXX. *Other Support (Army)*
    23196A: Base Operations (Europe)
    23296A: Base Operations (Pacific)
    23613A: Redeye (Operational Systems Development)
  24XXX. *Forces (Navy)*
    24114N: A-6 Squadrons
    24141N: Attack Carriers
    24221N: P-3 Squadrons
    24231N: ASW Carriers
    24311N: Submarines
    24411N: Fleet Escort (Major)
    24514N: Coastal/River Patrol and Assault Forces
    24611N: Mine Countermeasures Ships
    24711N: Underway Replenishment Ships
  25XXX. *Fleet Support*
    25196N: Base Operations
    25613N: Phoenix Missile System (Operational Systems Devel.)
  26XXX. *Fleet Marine Forces*
    26122M: CH-53 Squadrons
    26211M: Divisions
    26311M: Force Troops (Combat Support)
    26496M: Base Operations
    26612M: Helicopter Avionics (Operational Systems Devel.)
  27XXX. *Forces (Air Force)*
    27129F: F-111 Squadrons
    27213F: RF-4 Squadrons
    27241F: Special Air Warfare Forces (SAWF)
    27311F: MACE
    27412F: Tactical Air Control System
    27596F: Base Operations
  28XXX. *Other*
    28011O: JCS Directed and Coordinated Exercises
    28015N: Deepfreeze

FIGURE 5 (CONT'D)

3. INTELLIGENCE AND COMMUNICATIONS
- 31XXX. *Intelligence and Security*
  - 310110: Cryptologic Activities
  - 310130: Defense Attache System
- 32XXX. *National Military Command System*
  - 32011F: National Military Command Center
- 33XXX. *Communications*
  - 33111A: STARCOM
  - 33115K: DCA Satellite Project
- 34XXX. *Special Activities*
  - 342110: National Activities
- 35XXX. *Activities (Other)*
  - 35110F: Satellite Control Facility
  - 35112N: Oceanography
  - 35120A: Combat Development Activities

4. AIRLIFT/SEALIFT
- 41XXX. *Airlift*
  - 411180: C-141 Airlift Squadrons (IF)
  - 41119F: C-5 Airlift Squadrons (IF)
  - 41214F: Air Cargo Materiel Handling (463L)
- 42XXX. *Sealift*
  - 42115N: Fast Deployment Logistics Ships (IF)
  - 42117N: Tankers (IF)
  - 42121N: Cargo-Vehicle(RO/RO)-(Commercial) (IF)
- 43XXX. *Traffic Management and Water Terminals*
  - 431110: Port Terminal Operations (IF)
  - 431670: MTMTS Headquarters (IF)

5. GUARD AND RESERVE FORCES
- 51XXX. *Strategic Forces (Defensive)*
  - 51211A: Nike-Hercules (Army NG)
- 52XXX. *General Purpose Forces*
  - 52122A: Division Forces (Reserve)
  - 52412N: Fighter (VF) Squadrons
  - 52422N: Cruiser-Destroyer Forces
  - 52511M: Divisions
  - 52512M: Wings
  - 52615F: F-105 Squadrons (ANG)
  - 52663F: C-130 Tactical Airlift Squadrons (Reserve)
- 53XXX. *Intelligence and Communications*
  - 53112F: Weather Service (ANG)
- 54XXX. *Airlift and Sealift*
  - 54212F: Aerial Port Squadrons
- 57XXX. *Central Supply and Maintenance*
  - 57111F: Maintenance and Supply Squadrons (Mobile)
- 58XXX. *Training, Medical & Other General Personnel Activities*
  - 58111A: Recruit Training (NG)
  - 58134N: NROTC
  - 58152F: Individual Training (ANG)
  - 58212F: Aeromedical Evacuation Units
- 59XXX. *Administration and Associated Activities*
  - 59198A: Command (NG)
  - 59311F: Mobilization Assignees
  - 59711M: Augmentation Units

FIGURE 5 (CONT'D)

6. RESEARCH AND DEVELOPMENT

61XXX. Research
- 61101A: In-House Lab Independent Research
- 61101N: In-House Lab
- 61101F: In-House Lab

62XXX. Exploratory Development
- 62103A: Surface Mobility Studies
- 62505N: Shipboard Countermeasures
- 62602M: Marine Corps Ord and Combat Vehs
- 62201F: Aerospace Flight Dynamics

63XXX. Advanced Development
- 63203A: Heavy Lift Helicopter
- 63503N: Active Planar Array Sonar
- 63606M: Advanced Weapons Systems
- 63210F: Supersonic Combustion

64XXX. Engineering Development
- 64714A: Night Vision Developments
- 64303N: Advanced Surface Missile System (ASMS)
- 64606M: Weapons and Vehicles
- 64206F: F-4 Avionics

65XXX. Management and Support
- 65101A: Studies and Analyses
- 65102N: Center for Naval Analysis
- 65103M: Studies and Analyses
- 65101F: Rand

7. CENTRAL SUPPLY AND MAINTENANCE

71XXX. Supply
- 711120: Inventory Control Points

72XXX. Maintenance and Service Activities (IF)
- 72003A: Munitions Facilities (IF)
- 72028N: Ship Maintenance Activities (IF)
- 72208F: Depot Maintenance Activities (Non-IF) Reimbursements
- 728125: Defense Supply Agency - Headquarters

78XXX. Other
- 780110: Industrial Preparedness

8. TRAINING, MEDICAL AND OTHER GENERAL PERSONNEL ACTIVITIES

81XXX. Training, Medical and Other Activities
- 811110: Recruit Training
- 812110: Hospitals
- 816120: Transportation of Household Goods

88XXX. Other
- 880110: Military Family Housing Debt Payments

9. ADMINISTRATION AND ASSOCIATED ACTIVITI

91XXX. Command
- 911110: Office, Secretary of Defense
- 911120: Joint Chiefs of Staff
- 911140: Major Field Headquarters (Not otherwise accounted for)

10. SUPPORT OF OTHER NATIONS

01XXX. Support of Allies
- 010050: NATO Infrastructure

02XXX. Military Assistance Program
- 02001D: Military Assistance

FIVE YEAR DEFENSE PROGRAM

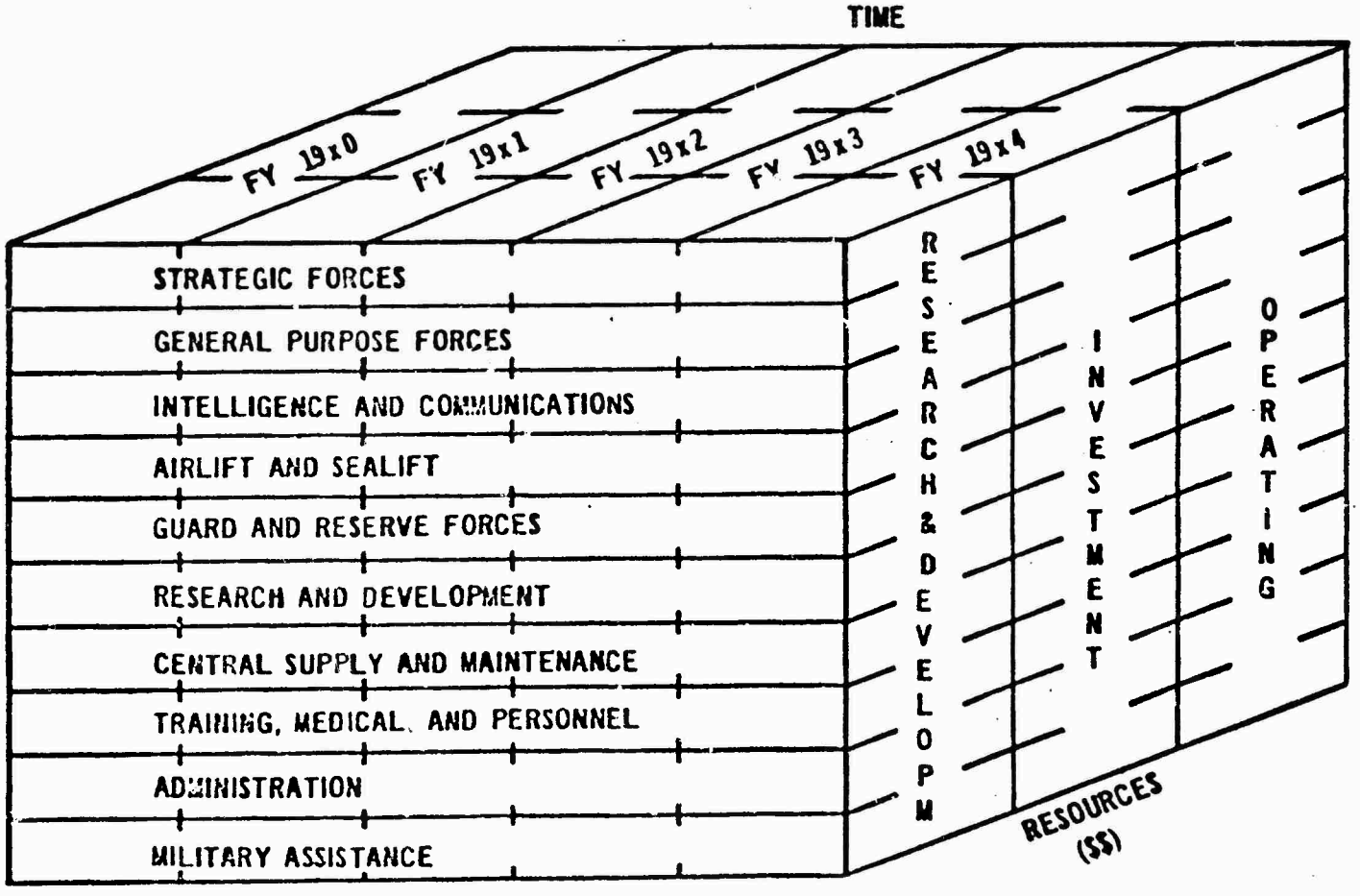
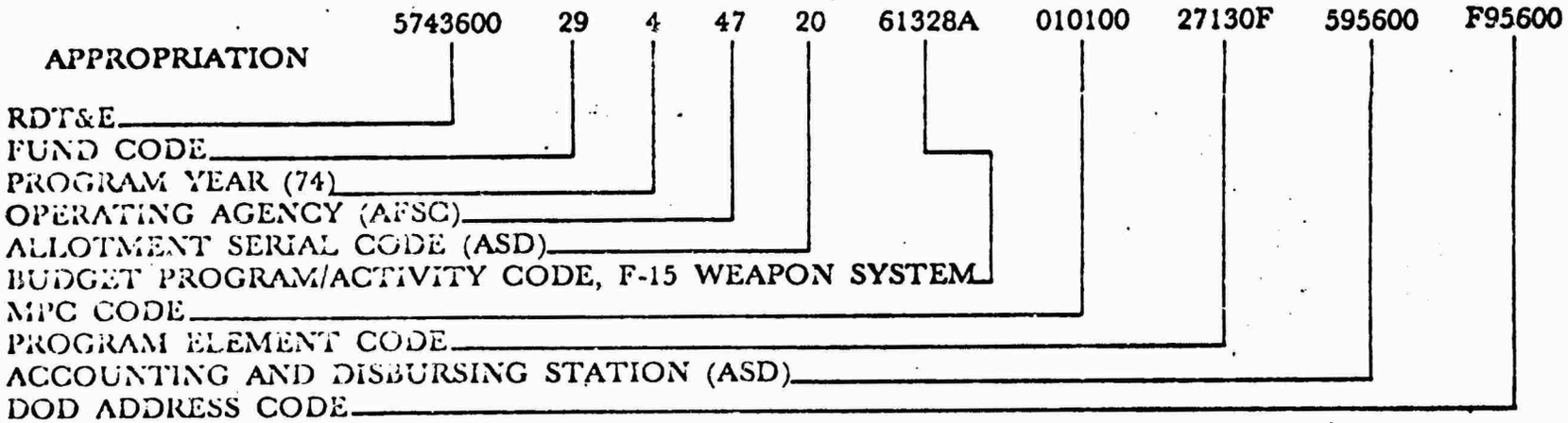


FIGURE 6

(A) DEVELOPMENT SYSTEM:



(B) PRODUCTION SYSTEM:

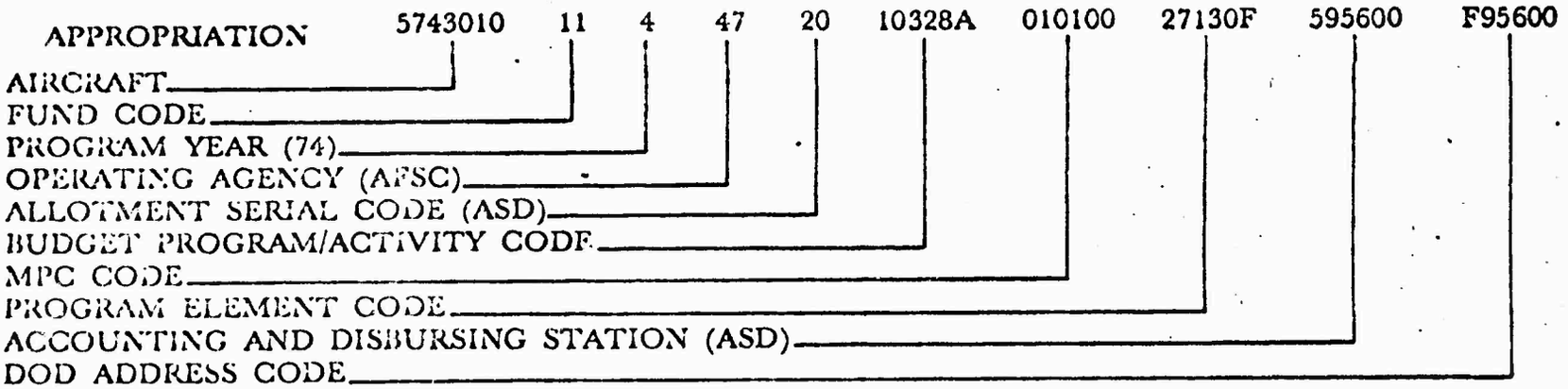
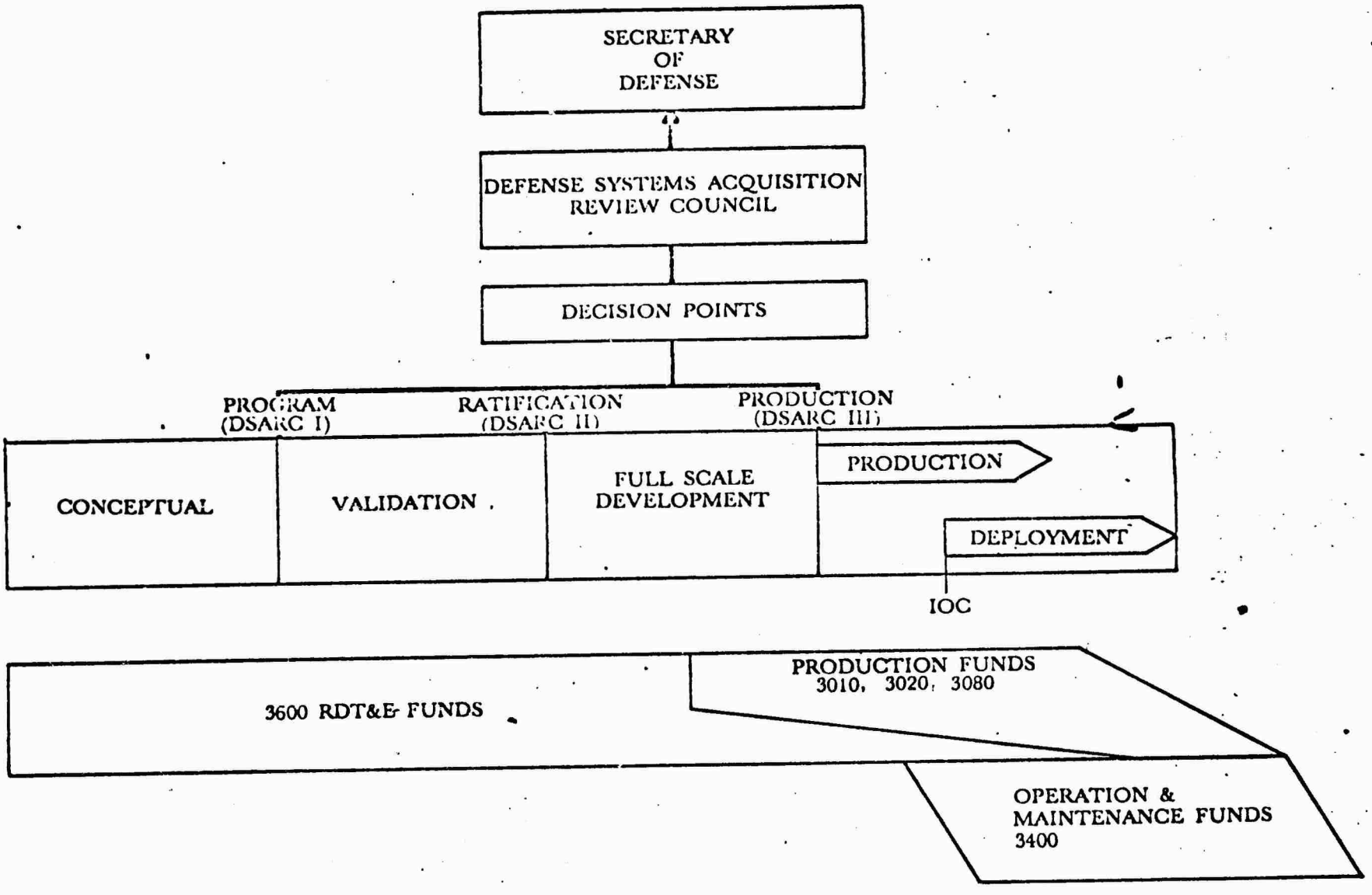


FIGURE 7

Accounting Classification.

FIGURE 8



Acquisition Cycle.

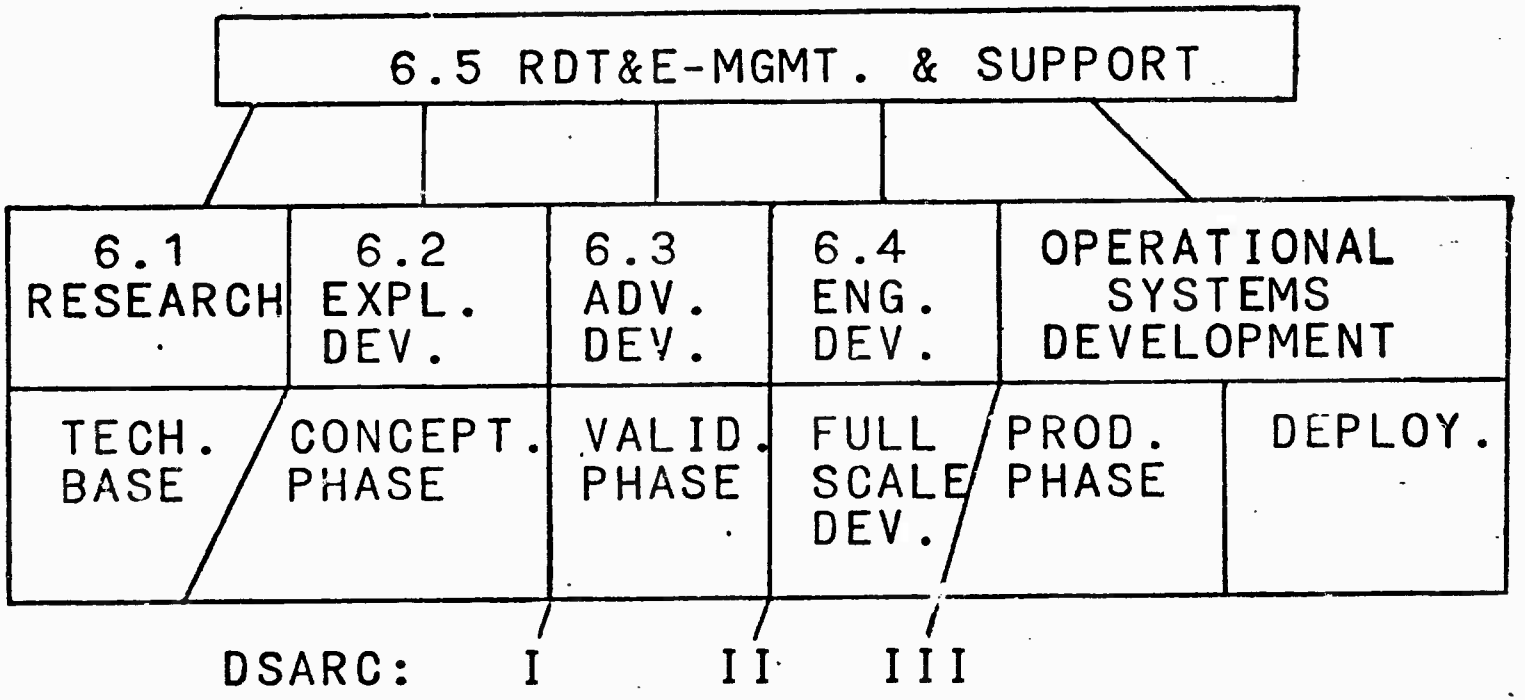


FIGURE 9

R&D PROGRAMS VERSUS ACQUISITION CYCLE PHASE

APPENDIX B

LIST OF TABLES

TABLE I

DETERMINATION CRITERIA FOR ASSIGNING FUNDING TO RDT&E OR PROCUREMENT APPROPRIATIONS

		RDT&E Appro	Proc Appro
1.	Research		
	a. Studies of all types to acquire fundamental knowledge, having anticipated application to the solution of development problems	X	
	b. Studies of techniques and skills for which there will be a military requirement	X	
	c. Studies to provide criteria and development of uses for new materials	X	
	d. Studies with respect to general sciences, medical sciences and military sciences	X	
	e. Studies in the field of military planning strategy, tactics operations, requirements, training and intelligence	X	
	f. Planning studies to provide definitions of specific weapon systems as well as time-phasing of parameters required	X	
	g. Studies to improve performance standards required in advanced material	X	
	h. Studies to provide design criteria	X	
	i. Studies to provide feasibility of new design concepts.....	X	

	RDT&E Appro	Proc Appro
1. Research (continued)		
j. Engineering necessary to provide a basis for proceeding with development	X	
k. The performance of laboratory testing and the data analyses required in order to provide necessary analyses of theories	X	
l. Tests and analyses of techniques, engineering principles and basic sciences with the following objectives:		
(a) Development and evaluate preliminary and prototype designs; and	X	
(b) Obtain and compile data for extension of the state-of-the-art	X	
m. Facilities for contractor use in performance of research contracts..	X	
2. Development, Test and Evaluation (DT&E)		
a. Program planning and preliminary design of systems; subsystems, components and ground-support equipment	X	
b. Fabrication of wind-tunnel models, mockups, and demonstrator engines	X	
c. Detailed design for experimental subsystems, components and ground-support equipment (and systems when required for the decision to produce for test and inventory)	X	

2. (DT&E) (Continued)	RDT&E Appro	Proc Appro
d. Detailed design of development models, prototype systems, subsystems, components and ground-support equipment	X	
e. Fabrication of experimental subsystems, component and group-support equipment (and systems) when required for the decision to produce for test and inventory	X	
f. Fabrication of development models and prototype systems, subsystems, components and ground-support equipment	X	
g. Fabrication of operational support items not identified with a weapon system, to be used in operational testing and evaluation	X	
h. Detailed design and fabrication of development models and of prototypes of aircraft and missile systems, subsystems and components	X	
i. Flight testing of experimental models	X	
j. Flight testing of development and prototype models at contractors at AF bases	X	
k. Fabrication of qualification and test engines and engine components through successful completion of Preliminary Flight Rating Test (PFRT).....	X	

2. (DT&E) (Continued)	RDT&E Appro	Proc Appro
l. Detailed design and fabrication of research test vehicles and data gathering equipment	X	
m. Tests and analyses of initial experimental models of equipment, components and supporting items in an actual or simulated environment, in order to establish feasibility and desired performance	X	
n. Tests and analyses of initial development prototype models of equipment, component systems, and supporting items in an actual or simulated environment with the following objectives:		
(a) Determine functional adequacy and insure that engineering specifications have been met; and	X	
(b) Determine compliance with performance and handling specifications exhibited in the contract	X	
o. Testing of items not standard to the Air Force, developed by other Governmental agencies, commercial or foreign sources	X	
p. Facilities at Contractors' plants:		
(a) Industrial facilities for contractors' use solely in performance of development contracts or to support production capacity reproduction capacity required for DT&E purposes, regardless of future followon procurement utilization	X	

	RDT&E Appro	Proc Appro
2. (DT&E) (Continued)		
q. Engineering, engineering changes and model improvements required to be performed on items in the experimental, development, test and prototype phase	X	
r. Boosters for all nonoperational missile and/or space systems and in support of DT&E of operational systems	X	
s. IOT&E of operational systems	X	
3. Production		
a. Production tool design and fabrication and production planning required for quantity production of items tooling required for producing DT&E test items		X
b. Production engineering for adaptation of design to economical quantity production and the choice and improvement of the manufacturing processes incident thereto ...		X
c. Procurement of materiel to provide materials, components, and parts required in the ultimate production items		X
d. Systems, subsystems, components, ground support equipment and any items required for the operational inventory		X
e. Manufacturing methods which require analyses of production line techniques, materials, etc.		X

3. Production (Continued)	RDT&E Appro	Proc Appro
f. Industrial facilities for contractor use in performance of production contracts		X

APPENDIX C

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