

EXECUTIVE OFFICE OF THE PRESIDENT

BUREAU OF THE BUDGET

WASHINGTON, D.C. 20503

BULLETIN NO. 66-6

May 24, 1966

TO THE HEADS OF EXECUTIVE DEPARTMENTS AND ESTABLISHMENTS

SUBJECT: Improvement of financial management

1. Purpose. This Bulletin requires each agency to take prompt and vigorous action toward modernizing its financial management system in accordance with existing laws, requirements, and administrative regulations.

2. Background and need.

a. Need for action. An analysis of information submitted by agencies in response to Bulletin No. 65-9--which covered accomplishments and the status of their financial management improvement programs--indicates that more expeditious action is needed to achieve identified goals in the financial management field. Comparisons of plans, target dates, and accomplishments in the annual agency reports of the last few years reveal delays and deferments in needed and planned improvement work. More positive and effective action is required.

b. Specific areas. In particular, revitalized efforts are needed by many agencies in three major areas: (1) the development of accounting systems in accordance with the provisions of the Budget and Accounting Procedures Act of 1950, as amended, and the principles and standards prescribed by the Comptroller General, and the submission of such systems to the Comptroller General for approval; (2) the use of cost-based budgets internally for purposes of administration and operation as contemplated by Public Law 84-863; and (3) the use of statistical sampling techniques in the administrative examination of vouchers as authorized by Public Law 88-521.

The planning, development, and installation work under (1) and (2) above should be closely coordinated with agency efforts toward installation of the Planning-Programming-Budgeting system required under Bulletin No. 66-3 and supplemental instructions. It should give recognition to the data demands of the Planning-Programming-Budgeting system on the agency accounts, and the agency cost-based budget execution practices should be properly related to and be made consistent with the longer range program and financial plan prepared in response to instructions issued under Bulletin No. 66-3.

3. Development of accounting systems. The Budget and Accounting Procedures Act of 1950, as amended, places responsibility in the head of each agency for developing accounting systems that are designed to meet the internal management

needs of the agency, satisfy external requirements, and conform to the principles and standards prescribed by the Comptroller General. In June 1965, the Comptroller General issued a restatement of accounting principles and standards for the guidance of executive agencies. The purpose of that restatement was to furnish a more useful and meaningful consolidated statement that would stimulate the development of improved and more effective accounting systems throughout the Federal Government.

Each agency is requested to reexamine the adequacy of its accounting system(s) against current published requirements, review the status of developmental work, and take action to speed up needed improvements. These efforts should be organized in firm projects for completion of necessary developmental work within specified time periods, and coordinated with plans for submission of accounting systems to the Comptroller General for approval as soon as practicable.

4. Use of cost-based budgets internally. Public Law 84-863 provides that for purposes of administration and operation, cost-based budgets will be used by all departments and establishments, and that administrative subdivisions of appropriations or funds will be made on the basis of such cost-based budgets. This involves the use of high level allotments for fund control and more detailed cost targets for program management; the preparation and approval of internal operating budgets that incorporate fund limitations and cost targets to govern the conduct of the work; and the use of reports that show performance against approved operating budgets for effective control of budget execution.

Agencies should reexamine the adequacy of present practices in relation to these objectives, and take action to bring about needed changes. Such changes should be made as soon as practicable, through time-phased projects that are realistically scheduled in relation to the developmental work on the accounting system(s).

5. Use of statistical sampling techniques. Public Law 88-521 authorizes the use of statistical sampling techniques in the administrative examination of vouchers for less than \$100. Prior to the enactment of this legislation, studies by two agencies indicated that sizeable savings were possible by the application of statistical sampling. Reports in response to Bulletin No. 65-9, however, did not show effective progress.

Agencies are requested to expedite action in this area. Feasibility studies should be made to determine where the use of statistical sampling for voucher examination is appropriate. These studies should then be implemented as soon as possible wherever this approach is practicable, in order to achieve the inherent savings at the earliest possible date. The time schedule for such actions should be firmly established as part of the overall improvement program.

6. Other improvements. Prompt action should also be taken to bring about needed improvements in other functional areas, in accordance with the goals and objectives that have been established under the Joint Financial Management Improvement Program.

7. Reports of action. Although no immediate report is required under this Bulletin, the specific items herein discussed will be covered in the annual call for reports of agency accomplishments under the Joint Financial Management Improvement Program for fiscal year 1966. Firm target dates for needed improvements and accelerated progress are to be reflected in each agency's report under that call.

The need for more aggressive improvement action in this field requires that the agency reports for fiscal year 1966 should not reflect any deferral of target dates beyond those that were furnished by the agencies in response to Bulletin 65-9. Instead, every effort will be made to move the targets to an earlier date, with a firm commitment for attaining the desired objectives within the specified time periods.

CHARLES L. SCHULTZE
Director

~~CONFIDENTIAL~~

3 March 1966

MEMORANDUM FOR: DD/I Planning Officer
DD/S&T Planning Officer
DD/S Planning Officer
DD/P Planning Officer

SUBJECT : Supplement to BOB Bulletin 66-3

1. Attached are copies of a supplementary issuance by the Bureau of the Budget to Bulletin 66-3. The noteworthy features of this supplement are the emphasis on "Program Outputs", i. e., quantitative expressions of what is produced as a result of a given activity over a period of years and an example of what a Program Memorandum might cover. As you know, Bulletin 66-3 calls for the submission of Program Memoranda on each Program Category to BOB in May.

2. After you have had a chance to look this supplement over, it would be worthwhile for us to discuss it either directly with each directorate planning element or in a meeting.

151

[Redacted Signature]

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Chief, Planning and Programming Division
O/PPB

Attachments: (3) As stated

PPB/PPD [Redacted] jh (3 Mar 66)

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66-8791

EXECUTIVE OFFICE OF THE PRESIDENT

BUREAU OF THE BUDGET

PPB

66-0146

WASHINGTON, D.C. 20503

February 21, 1966

MEMORANDUM TO HEADS OF EXECUTIVE DEPARTMENTS AND PREVIEW
AGENCIES

Subject: The Planning-Programming-Budgeting System

Attached is a supplement to our Bulletin No. 66-3 which describes in detail the two documents basic to the new Planning-Programming-Budgeting system: The Program and Financial Plans, and the Program Memoranda. There are three points that I particularly want to emphasize.

First, the basic documents must reflect decisions made as to priorities, and choices made between programs on the basis of these priorities. The Budget Bureau is not specifying overall fiscal guidelines within which to make choices, but it is quite clear that the resources available to the Federal Government over the next several years will not be adequate to fund all desirable programs. Your current planning and programming, therefore, should not assume that a large overall increase in funds will become available for program expansion. In laying out programs for future years program expansion may be proposed, but equal attention should be devoted to the reduction and modification of relatively ineffective, obsolete or low priority programs. It is out of such reduction that the bulk of additional funds for new programs will have to be found.

Second, while these particular documents are confidential, much of the substance of the analyses and the background data can appropriately be used in preparing your budget justifications and testimony before congressional committees in support of the President's 1968 budget.

Third, your preliminary Program and Financial Plans and Program Memoranda will constitute your submission to us for the Spring Preview of the 1968 budget. These documents should be submitted no later than May 1, 1966, to assure the proper scheduling of the entire 1968 budget process.

Charles L. Schultze
CHARLES L. SCHULTZE
Director

Attachment

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EXECUTIVE OFFICE OF THE PRESIDENT
BUREAU OF THE BUDGET
WASHINGTON, D.C. 20503

66-879

SUPPLEMENT TO BULLETIN NO. 66-3

February 21, 1966

TO THE HEADS OF EXECUTIVE DEPARTMENTS AND ESTABLISHMENTS

SUBJECT: Planning-Programming-Budgeting

1. Purpose. Bureau of the Budget Bulletin No. 66-3 outlined the concept of an integrated Planning-Programming-Budgeting system. Pending the consolidation of all instructional materials on the Planning-Programming-Budgeting system in a circular issuance, this Supplement is being issued to provide necessary details on two of the central documents in this system, the Program and Financial Plans (PFP) and Program Memoranda (PM). Both the Financial Plans and the Program Memoranda are to be forwarded by May 1, 1966, to the Bureau of the Budget by the agencies listed in Part A of Exhibit 1 of Bulletin 66-3. These documents will form the basis for this year's Spring budget preview.

2. Constraints. No explicit financial guidelines or constraints are provided to agencies. Each agency head is to recommend the mix and level of programs for his agency. However, the basis of program decisions is choice among alternatives, and assessment of priorities. Future Federal budgets, as past ones, cannot provide unlimited resources - choices will have to be made. It is important that the Program and Financial Plans and Program Memoranda be prepared with as much attention paid to reducing and modifying obsolete and low priority programs as expanding others and introducing new ones.

3. Program and Financial Plans.

a. Composition. Each Program and Financial Plan should consist of three parts:

Part I will tabulate program output.

Part II will tabulate program costs and other financial data, in a format paralleling that of Part I.

Part III will include special tabulations.

The Plan will consist only of these tables, together with such brief explanatory notes as may be necessary. All descriptive and analytic material will be included in the Program Memoranda.

(1) Part I. Tabulation of Program Output. The Program Output tabulation will consist of tables showing agency physical outputs. Stub headings of the tables are the program categories, subcategories and elements of the agency's program structure. All categories, subcategories and elements approved by the agency head should be shown. Activities requiring legislation should be so noted. The column headings should be fiscal years - FY 1965 through FY 1967, plus FY 1968 through the last fiscal year of the planning period (FY 1972 in the case of those agencies developing five-year plans).

One principal indicator of physical output or services rendered will be shown for each program element. The output measure chosen should be that which is the most important single quantitative measure of program performance. For urban highway construction, for example, output might be number of lane-miles of highways built. For an on-the-job training program, it might be number of workers trained.

Using the on-the-job training example, the program output table would look as follows, assuming that the program category was "Manpower Development Assistance," the subcategory, "Manpower Training," and the element, "On the-job Training":

	FY								
	65	66	67	68	69	70	71	72	
I. Manpower Development Assistance									
A.									
B. Manpower Training									
1.									
2. On-the-job training									
(No. of workers trained - 000)	XX	XX	XX	XX	XX	XX	XX	XX	XX

In the majority of cases no single measure of output is satisfactory. In the case of the urban highways, for example, some measure of traffic-handling capacity might be needed as well as a statement of lane-mileage. Similarly, in the case of Manpower Training, some measure of the number of hours of training per worker, or training costs per worker, or the intended effect of training on earning capacity might be shown. In all such cases, the agency should submit, as part of the special tabulations in Part III, additional tables showing these supplementary measures of output.

(2) Part II. Financial Tabulations. The first tabulation in this Part should be a Program Cost tabulation which will have the same stub and column headings as the Program Output tabulation. The total Federal program costs shown for each year should be based on the system cost concept described in the Bureau of the Budget Bulletin No. 66-3. It should display the total agency costs, required to achieve the comparable output shown in Part I, whether funded through appropriations, trust funds, revolving funds, or otherwise. Where the accounting system of the agency is oriented towards the present appropriation and activity structure and is unable to produce program cost data with precision, costs should be estimated as closely as possible.

The cost tabulation for on-the-job training would appear as follows:

	FY (\$ rounded to tenths of millions)							
	65	66	67	68	69	70	71	72
I. Manpower Development Assistance								
A.								
B. Manpower Training								
1.								
2. On-the-job training. . .	XX	XX	XX	XX	XX	XX	XX	XX

Totals and subtotals should be shown for program categories and subcategories.

The services performed by one agency for another should be reflected in the Plan of both agencies. For example, administrative support services provided overseas to another agency by the State Department on a reimbursable basis would be shown as a cost in the serviced agency's Program and Financial Plan, and as a cost and an output in the State Department's Program and Financial Plan.

Data on the New Obligational Authority and Expenditure implications of the proposed programs need not be forwarded to the Bureau of the Budget, unless specifically requested. Such data should be developed in the form which is most convenient for each agency.

(3) Part III. Special Tabulations. Many agencies will be asked to tabulate revenues received, and to show major capital investment plans. For some agencies, tables on Federal manpower requirements and sources of financing may be required. As noted above, it will also be desirable in the case of some programs to identify measures of program output in addition to those listed in Part I. The Bureau of the Budget will work out with each agency the special tabulations to be included.

b. Other information. Other information may be required later. The schedule for developing this information will be worked out by the Bureau of the Budget separately with each agency. Some of the tables in this category are:

(1) Tabulations of state and local government programs (or in the case of some foreign affairs agencies, foreign programs) and in some cases activities of the private sector (including Federal corporations) where these are closely related to Federal Government programs.

(2) Program element data sheets - one for each program element - which will provide a brief factual description of each element.

(3) A crosswalk between the costs shown in program terms in Part II, and the agency appropriation accounts and other sources of financing, together with a reconciliation of total program costs under each source of financing to new obligational authority and expenditures.

4. Program Memoranda. Bulletin 66-3 provided that a Program Memorandum is to be prepared annually on each of the program categories shown in the Program and Financial Plan. Certain exceptions can be made, however. Unless specifically requested, Program Memoranda need not be submitted for any residual category; e.g., "General Support" or "Other." Additionally, where no major program choices appear to be open, or where a joint analysis of several program categories appears preferable, separate Program Memoranda may not be required. In each such case, however, the decision should be taken after consultation with the Bureau of the Budget.

The Program Memorandum for a particular program category provides the analytic backup for the programs described in the Program and Financial Plan. These Memoranda should serve as basic planning documents not only by agency top management and the Bureau of the Budget but throughout the agency. Moreover, they should be regularly updated so that at any given time they provide a current statement of agency objectives and programs. They will provide the focus for the Bureau of the Budget's Spring Preview.

On the basis of Bureau of the Budget comments and of continuing internal agency review, these Memoranda should then be modified as background to FY 1968 budget proposals. The Memoranda, as modified, together with the decisions taken in the President's budget recommendations, will form the point of departure for the Memoranda to be submitted in the Spring of the following year. The Memoranda will thus be the focal points for the continuous development, refinement, and change of concepts and programs.

Attached is a declassified Defense Department paper on Airlift and Sealift Forces. Though its format differs somewhat from that required in a Program Memorandum, this paper provides one example of the analytic method and level of detail required.

a. Format and content.

(1) Program Memoranda should be prepared in the form of Memoranda from the agency head to the Director of the Bureau of the Budget.

(2) Part I should (a) state the recommendations made, noting the relation of such recommendations to those

of the prior year; (b) summarize the Memorandum, including the alternatives analyzed, in not more than two pages; and (c) include a copy of the PFP for the program category.

(3) Part II should present the factual and analytic basis for the program proposals. It should be a hard, quantitative analytic document, not an essay, and not merely a budget justification. It should (a) specify national needs in the area covered by the memorandum; (b) define the agency's objectives with respect to those needs in precise and concrete terms; (c) analyze the probable effectiveness and the long-term costs of the programs proposed to attain those objectives; (d) outline and compare alternative programs for meeting the same objectives; and (e) make clear and precise the priorities within program subcategories and categories and state the relative emphasis among broad program categories. In the course of this presentation the assumptions and the criteria used must be made explicit. Where relevant factors have not yet been adequately analyzed, they must be identified, and an indication given of the nature of the data needed or the studies still to be performed.

Where special studies or other analyses of particular pertinence have been completed, they may be made appendices to the Program Memoranda.

b. Length. There is no fixed requirement as to length, but thorough coverage of an important program category, including tables, will ordinarily take from 20 to 50 pages, single spaced.

c. Method.

(1) In general, there are more important questions deserving analysis than there is analytic capacity available to do the work. The Program Memoranda should focus on the central questions. In some cases these have been identified in the program issues posed by the Bureau of the Budget. Choices on which subjects should be given highest priority should be decided after consultation with Bureau of the Budget staff.

(2) The Memoranda should be as specific and as quantitative as possible. Broad, general statements of national needs, such as the "development of a safe and efficient civil aviation system" or the "elimination of

poverty," though adequate for some purposes, cannot form a basis for analysis. The adequacy of specific programs cannot be assessed unless their goals are stated precisely - quantitatively wherever possible - and the time span for their accomplishment is specified. Correspondingly, specific goals should not be adopted until the costs of achieving them have been assessed. The Airlift-Sealift Memorandum, for example, does not start with an arbitrary lift capability as a goal. It starts with an examination of the relative value of various levels of lift capability, and it compares these with the various related costs.

(3) In many cases program analysis can be greatly assisted by a development of a formal program model. Such a model would show, usually on the basis of statistical data, the relationship of outputs to the program inputs. All such models are simplified versions of the phenomena being described, but they help clarify the effectiveness of existing programs, and of possible new programs.

(4) The Memoranda must carefully identify assumptions. Some assumptions will be about facts; for example, the level of economic activity or the rate of family formation. Others will be assumptions about values; for example, the specific level of health to which our Indian population should be brought. Some indication should be given of the degree to which alternative assumptions affect conclusions.

(5) It will often be desirable to analyze explicitly the effect on program choice of making alternative assumptions. The three cases described at pages 20-21 of the Airlift-Sealift paper provide examples.

(6) It is often useful to discuss program uncertainties about future programs. In general, the further into the future a program is projected, the greater the uncertainty about needs and objectives - but also the greater the range of options. For this reason it may be useful to outline a strategy in which certain actions are taken now which both keep open future options and help provide the data or analysis needed to eventually choose between them. The reduction of uncertainty by data gathering, by research or simply by the passage of time may then make possible wiser choices than could now be made, and those choices will still be open because the decisions made now were designed to keep them open.

(7) Where estimates of effectiveness or cost are uncertain, it is sometimes illuminating to do a "break-even analysis," that is, an analysis which compares the uncertain program with one on which there are adequate data. For example, an unproven mail sorting machine of known costs might be compared with existing mail sorting methods by calculating the performance which would make the new machine just competitive with the old methods. Conversely, if the mail sorting ability of the new machine were specified, one could calculate how much the Post Office could pay for it and be as well off as with existing methods.

(8) Quantification should not be attempted where it is inappropriate or meaningless. In many cases, the effectiveness of programs is difficult to quantify; for some activities, it is impossible. Even in these cases, however, cost can be estimated, and a more precise knowledge of program costs can provide a partial basis for the overall judgments which are made in any event. As in the case of the Program and Financial Plan, all costs shown should be systems costs; i.e., all costs incurred in the production of a given output or service.

d. Legislative implications. New programs proposed in the Program Memoranda will often require authorizing legislation. The Program Memoranda should, where possible, outline the essential features of the required legislation including timing.

5. Handling of documents. The Program and Financial Plans and Program Memoranda will be submitted to the Bureau of the Budget in 25 copies. These documents will be handled in accordance with Bureau of the Budget Circular No. A-10, "Responsibilities with Respect to the Budget."

6. Inquiries. Questions on format and substance that arise during the course of preparing agency Program and Financial Plans and Program Memoranda should be brought to the attention of Bureau of the Budget examining staff for assistance and advice.

CHARLES L. SCHULTZE
Director

Attachment

ATTACHMENT

SUPPLEMENT TO BULLETIN NO. 66-3

DRAFT

December 21, 1965

MEMORANDUM FOR THE PRESIDENT

SUBJECT: Recommended FY67-71 Airlift and Sealift Forces (U)

I. Summary and Recommendations.

I have recently completed my review of the airlift and sealift forces for FY67-71. The program recommended herein will form the basis for preparing the FY67 budget. This memorandum summarizes the main factors I have taken into consideration in determining United States requirements for these forces.

I recommend that you approve for inclusion in the FY67 budget development and procurement of the following aircraft and ships to augment our airlift and sealift forces.

	<u>FY67 TOA</u> (in millions)
Procurement of _____ C-141's	a/
Continued Development of C-5A	
Procurement of first _____ C-5A's	a/
Procurement of _____ Fast Deployment Logistic Ships	
Modernize _____ MSTs Tankers	
Activate _____ Victory Ships for Forward Floating Depot Use	

These development and procurement actions are in support of an overall program to enhance considerably our rapid deployment capability. The principal features of this program, which I recommend to you, are as follows:

a. Continue the development of the C-5A transport and plan an interim force objective of _____. The development and investment cost of _____ C-5A is estimated to be _____. The investment cost of the next _____ aircraft is estimated to be _____. A firm decision on ultimate force size can be made next year.

b. Terminate the C-141 program at _____ aircraft

c. Increase by approximately _____ personnel the manpower strength of the airlift forces in FY 1967 so that increased

a/ Cost includes flyaway cost, initial spares, ground support equipment and modifications less credits from previous year, if any.

utilization rates in both peace and war can be sustained. These manpower augmentations are being applied on a selective basis to the most productive aircraft: C-141, C-135, and C-130E in order to raise their peacetime flying hour rates. Together with the recommended force structure changes, increases in the military work week, and other ancillary actions, these added personnel will provide about _____ percent more capability in peacetime in FY 1967 and about _____ percent more strategic lift capability in wartime than previously available.

d. The overall improvement in wartime surge capability is summarized in the table below.

Airlift Capability (Thousands of Tons in 30 days - By Fiscal Years)											
Wartime Surge ^{a/}	<u>61</u>	<u>62</u>	<u>63</u>	<u>64</u>	<u>65</u>	<u>66</u>	<u>67</u>	<u>68</u>	<u>69</u>	<u>70</u>	<u>71</u>
Previously Approved											
SecDef Recommended											<u>b/</u>

e. Continue advanced development on a CX-_____ transport, but do not commence either full scale development or contract definition. Neither the cost-effectiveness analysis nor the technology are yet available which would make this system a preferred alternative for intra-theater delivery.

f. Procure _____ of the large, efficient, high-speed Fast Deployment Logistic (FDL) ships in FY _____ and raise the interim force objective from _____ to _____ ships at an investment cost of approximately _____.

a/ Strategic lift capability is computed on the basis of programmed active, guard and reserve forces excluding units deployed overseas and aircraft withheld for special missions.

In FY66 and beyond I assume the wartime utilization rates increase from _____ to _____ hours for the C-141 and C-5A and from _____ to _____ hours on the C-130E's _____ (plus some other small changes for other aircraft). The manpower and TOA augmentations associated with supporting our forces will insure these wartime rates through FY _____. I am asking the Air Force to determine the manpower requirements and peacetime flying hour program necessary to support these wartime rates in FY _____ and beyond.

b/ By end FY _____, the recommended program will produce a 30-day wartime surge capacity of _____ tons, _____ of which will be provided by the C-5A. If we bought _____ squadrons of C-5A, the FY _____ capacity would be _____ tons.

g. Raise the Forward Floating Depot (FFD) objective from _____ to _____ ships and hold this forward, sea-based prepositioned force on station during the _____ period while our much more efficient deployment mix of FDL's and C-5A's is being created.

Moreover, I recommend that we adopt for planning purposes the force structure summarized in Table I. Where they differ from my recommendations, the forces proposed by the Services are shown beneath mine in parentheses. The financial and procurement summary for these forces is shown in Table II.

These forces, together with programmed sea- and land-based prepositioned Army equipment and commercial sealift augmentation^{a/}, have tonnage movement capabilities as summarized in Table III.

This rapid delivery capability, however, does not take into account many other factors which affect our ability to close and support our combat forces. Such factors include our force readiness posture, the adequacy of the CONUS transportation system, the capacity of theater port facilities and lines of communication, and the ability of theater commanders to assemble and commit large forces rapidly. Recently completed strategic mobility studies indicate the necessity to incorporate such factors into an overall movement capabilities plan which is maintained on a current basis. Moreover, we must continuously devise specific programs to insure that our rapid deployment forces can be fully and efficiently utilized.

Two basic management tools are being developed: (1) a five-year program of balanced airlift, sealift, prepositioned stocks, and other mobility resources; and (2) a five-year plan showing our movement capability for typical forces to selected areas. These will be available in time for my next Memorandum on Airlift and Sealift Forces.

^{a/} Commercial airlift augmentation provided by the Civil Reserve Air Fleet (CRAF) is not included in the calculations. These aircraft will be utilized to carry troops and to replace diverted military aircraft in resupplying forces deployed in areas other than the theater of war. The present CRAF fleet consists of 140 international cargo aircraft, 120 international passenger aircraft and 83 domestic aircraft.

TABLE I
AIRLIFT FORCES
FISCAL YEAR 1961-74
 (Number of U.E. Aircraft at End FY)

FY61 FY74

Active Force

C-97
 C-118
 C-121
 C-123
 C-124

C-130

C-133

C-135

C-141

C-5A

CX-VSTOL

Total Active

Air Force Reserve

C-119
 C-123
 C-124

C-130

Sub-total Reserve

TABLE I
AIRLIFT FORCES
FISCAL YEAR 1961-74
(Cont'd)

FY 61 FY74

Air National Guard

C-97

C-121
C-123

C-124

C-130

Sub-total Guard

Total Guard + Reserve

30 Day Lift Capability in
Thousands of short tons to:

Trans Atlantic

Previously Approved
SecDef Recommended

Trans Pacific

Previously Approved
SecDef Recommended

TABLE I

SEALIFT FORCES
FISCAL YEAR 1961-1974
 (Number of Ships at End FY)

FY61 FY74

MSTS Nucleus Fleet

Transports

T-AP (Active)
 T-AP (RRS)

Sub-Total

Tankers

T-AO
 T-AOG

Sub-Total

General Cargo

T-AK (Large) (Cargo Ship)

 T-AK (Medium) (Cargo Ship)
 T-AF (Medium) (Store Ship)
 T-AF (Small) (Store Ship)
 T-AKV (Cargo/Aircraft Ferry)

T-AKL (Light Cargo Ship)
 T-LST (Tank Landing Ship)

T-LSM (Medium Landing Ship)
 T-AKD (Cargo Ship (Dock))
 T-APC (Small Coastal Transport)
 T-AKA (Attack Cargo Ships)

Sub-Total

Roll on/Roll off

T-LSV

Forward Mobile Depots and Rapid Deployment Ships

T-AG (FFD)

T-AG (FDL)

Sub-Total

TOTAL NUCLEUS FLEET

a/ Actual delivery schedule may vary from numbers shown, which should be regarded as planning figures only.

TABLE II
AIRLIFT AND SEALIFT FINANCIAL AND PROCUREMENT SUMMARY

Net Airlift and Sealift Costs
 (TOA in Billions of Dollars by Fiscal Year)

	<u>FY65</u>	<u>FY71</u>	<u>Total</u> 1967-1971
Previously Approved Program			
SecDef Recommended Program			
Service Proposed Program			

Number of Aircraft and Ships to be Procured by Fiscal Year

C-130

Previously Approved

C-135

Previously Approved Program

C-141

Previously Approved Program
 SecDef Recommended Program
 Service Proposed Program

C-5A

Previously Approved Program
 SecDef Recommended Program
 Service Proposed Program

C-X VSTOL

Previously Approved Program
 SecDef Recommended Program
 Service Proposed Program

Roll-on/Roll-off Ship

Previously Approved Program
 SecDef Recommended Program
 Service Proposed Program

Tankers (Conversion)

Previously Approved Program
 SecDef Recommended Program
 Service Proposed Program

Fast Deployment Logistic Ship

Previously Approved Program
 SecDef Recommended Program
 Service Proposed Program

Procurement Costs in Millions of Dollars by Fiscal Year

Total Procurement Cost of Aircraft

Previously Approved Program
 SecDef Recommended Program
 Service Proposed Program

Total Procurement Cost of Ships

Previously Approved Program
 SecDef Recommended Program
 Service Proposed Program

TABLE III

STRATEGIC DEPLOYMENT CAPABILITIES TO SELECTED AREAS,
 INITIAL THIRTY DAYS, FY 1966-1971
 (Thousands of Short Tons)

FY66 FY71

- I. Deployment Capability, Programmed
 Airlift Forces and Prepositioned
 Equipment
- A. Prepositioned Army Equipment
- Europe
- Department of the Army
 Forward Depot, Total
 Location A
 Location B
 Location C
- Department of the Army
 Forward Floating Depot
- B. Deployment Capability, Airlift
 Forces and Prepositioning
- II. CARGO SEALIFT CAPABILITIES
- A. Tonnage in Theater
- B. Tonnage Deployed Forward
- III. FDL CAPABILITIES
- IV. GROSS DEPLOYMENT CAPABILITIES:
 AIRLIFT, SEALIFT AND
 PREPOSITIONING
- A. Tonnage in Theater
- B. Tonnage Deployed Forward

See footnotes on following page. [Page deleted for purpose of
 this exhibit.]

II. General Basis for Force Level Recommendations

A. Introduction

Rapid deployment requirements are influenced by the location of an attack, the size and type of enemy forces, the friendly forces already on the scene, the amount of warning we have of the impending attack, and how well we utilize that warning. The possible variations in these factors add up to a wide spectrum of military contingencies: there are no unique specific deployment requirements against which we can program combat and lift forces. In our analyses we look for typical or likely cases, examine what appear to be peak requirements, and test all of these for their sensitivity to possible changes in the various relevant factors.

To determine the weight and speed of our response, we must answer questions such as the following: Do early and heavy deployments actually result in shorter and less costly wars? And assuming there are significant tactical advantages to early, heavy reinforcement of threatened friendly forces, what are the costs of achieving the necessary level of rapid deployment capability? Are these costs commensurate with the benefits? At what point do diminishing returns begin to operate strongly with respect to the costs and benefits of rapid deployment?

Even after approximate answers to these questions have been obtained, there is the further problem (which clearly interacts with the original one) of determining the mix of deployment modes which will accomplish any particular deployment strategy at least cost. But even here there are further uncertainties. While two different mixes of airlift, sealift, and prepositioning may provide "equal" gross capabilities for a specific deployment, and perhaps even the same delivery time profile, there will be different degrees of risk, flexibility, and spill-over effects associated with each of the mixes. These considerations have been difficult to quantify and to trade off against the more obvious direct cost differences, but much progress has been made over the past year.

B. What Kind of Deployment Strategies?

One way of attacking the problem of optimum deployment strategies is to set as an objective the restoration of the status quo ante following an attack on some allied nation, and to compare the alternative ways of achieving it: we can send U.S. reinforcements rapidly to the threatened point; or we can send larger forces on a slower schedule. Each strategy, if followed up in an appropriate manner, can be made to produce

the same effect -- driving the invading force out of the attacked country and restoring the pre-attack status -- but some can do this at less cost than others. Costs in this sense must be reckoned in terms of: (a) the peacetime cost of owning the rapid deployment capability; (b) the peacetime cost of owning the combat forces; (c) the actual out-of-pocket costs of fighting the war; (d) the duration of the resultant conflict; (e) the casualties suffered by both the indigenous forces and our own; and (f) the land and its assets -- human, material, political and psychological -- lost during the campaign. Analytically, of course, some of these costs -- e.g., the peacetime costs of the forces and of the deployment capability -- are certain, whereas wartime costs are incurred only if an attack actually occurs.

While we have not answered this problem to our complete satisfaction, we do believe this is the right way to pose the question. Furthermore, we now have completed a program of studies that give us answers which, although subject to further verification and refining, are a marked advance over our previous efforts.

The first of these studies was completed in the summer of 1964 by the Chairman of the Joint Chiefs of Staff's Special Studies Group. One of their specific tasks was to determine the costs and advantages of various time phasings of forces required to implement alternative military strategies designed to meet limited war situations.

The results for one of the areas studied are presented in outline form in Table IV on the following page. Three strategies are examined, each divided into a containment phase, during which the enemy's advance is halted, and counter-attack phase, during which the status quo ante is restored. The forward defense strategy calls for a substantial rapid deployment capability in the containment phase, requiring that _____ personnel and equipment be in position well forward in the theatre by _____ days after D-day. The median defense strategy imposes a less demanding deployment schedule; the personnel and equipment requirements for the containment phase are unchanged, but they now need to reach defensive positions in the theatre only by _____ days after D-day. In the minimum defense strategy, the containment objective is merely to hold defensive perimeters around major population centers. This permits a still slower deployment rate but requires substantially larger ground and air forces, both for initial stabilization and for the eventual counter-attack.

TABLE IV

11

IMPLICATIONS OF VARIOUS DEPLOYMENT STRATEGIES IN SOUTHEAST ASIA

	Strategy		
	Rapid Deployment		Deliberate Deployment
	Forward Defense ("Alpha")	Median Defense ("Bravo")	Minimum Defense ("Charlie")
<u>U.S. Combat Force Requirements</u>			
Land Forces			
Containment			
Counterattack			
Fighter & Recon			
Aircraft			
<u>Duration of Combat</u>			
Days			
Force Unit-Days			
<u>Personnel Losses</u>			
<u>Territorial Losses</u> (Square Miles)			
<u>Cost of Fighting</u> the War <u>d/</u>	A	B	C

d/ Prediction of such magnitudes obviously involves very great uncertainty. However, the relative values of these estimates are probably reliable enough to support the conclusions that rapid deployment can reduce greatly the cost of restoring the status quo. Editors note: B is approximately three times as large as A and C is approximately twice as large as B.

There are a number of reasons why trading space for time results in larger force requirements. First, in the defensive perimeters around major population centers the lines must be continuously and deeply manned; the enemy has the ability to concentrate his forces and a break-through anywhere would be fatal. Second, the length of these defensive lines is long compared to the frontage which must be defended further forward where the task is one of blocking approach routes and lines of communication (LOCs) in a more fluid situation. Third, the indigenous units will have been badly attrited by a long campaign with very little augmentation by U.S. forces; and fourth, the constricted space within the defensive perimeter eliminates critically needed airfields for tactical fighter and transport operations. In fact, some of the tactical fighter units must be re-based some distance away with a consequent major degradation in their combat effectiveness.

There are other consequences of the various strategies and related rates of deployment. Table IV shows that there are major reductions in time, force unit-days of combat, casualties, and territory lost associated with the rapid deployment strategies. The estimates of the money costs of fighting the campaigns which result from the various strategies are subject to a wider range of uncertainty (as far as the absolute values are concerned) than the other portions of the analysis, but their values are in a correct relationship.

The CJCS/SSG study concentrated on developing scenarios for three theaters: _____ . The analysis serves as a useful basis for establishing tradeoffs among deployment forces and the implications of various force mixes using realistically derived requirements. The time phased force requirements for the forward strategy in Southeast Asia and Korea and for the median defense strategy in Iran were converted into 30-day tonnage delivery profiles.

Detailed analysis of rapid deployment requirements in other likely theaters of conflict is necessary in order for a completely satisfactory estimate of the demand for rapid deployment systems to be made. a/

Our analyses have been directed toward determining the rapid deployment posture which provides the capability to meet deployment requirements in any one of these pertinent theaters.

a/ Editors note: Details of pertinent theaters and their specific force and logistics requirements have been deleted.

C. Alternative Systems: Costs and Capabilities

A variety of transport aircraft, cargo ships and prepositioning sites was considered in determining the most economical mix of airlift, sealift and prepositioning which provides the capability to meet the rapid deployment requirements which I described in the preceding section. The costs and capabilities of the airlift and sealift systems are summarized in Table VI.

Up to ___ squadrons of C-130Es, ___ squadrons of C-141s, and ___ FFDs are considered to have their investment costs sunk in competing with the C-5A and the FDL. Their (undiscounted) costs consist of 10 years of annual operating costs. Additional C-130s, C-141s and FFDs can be procured at their procurement cost plus 10-year annual operating costs.

All C-5As and FDLs are considered on a new procurement basis, with systems costs including RDT&E, investment and 10-year annual operating costs. The FDL cost and capability are estimates for analytical purposes only. Current Navy studies will assist us in determining the optimum design for a fast deployment logistic ship configured to deploy and support Army forces. The Navy is also studying the desirability of series production of FDL ships using a standardized design in order to take advantage of economies of scale in ship production similar to those which we obtain in the procurement of aircraft. Studies are also underway concerning possible economies in FDL construction technology, including the use of automated flow-line production methods.

Additional information on the capabilities of these deployment systems is presented in the Appendix.

In addition to the transport aircraft and deployment ships, the desirability of prepositioning Army equipment at sites near potential theaters of conflict was considered. It is assumed in the analysis that the procurement costs of the prepositioned equipment shown in Table III above are sunk. ^{a/} Hence, the cost of existing prepositioning was assessed at the 10-year operating and maintenance cost of the facilities and equipment plus a five percent annual replacement allowance: \$3.0 million per thousand short tons.

^{a/} In addition to the European prepositioning shown in Table III above ___, additional materiel may be in place in Europe by FY _____. Hence, our analyses will consider cases assuming two different levels of prepositioning available in Europe.

TABLE VI

COSTS AND CAPABILITIES OF AIRLIFT AND SEALIFT SYSTEMS

<u>System</u>	<u>Investment Cost</u> <u>per Ship or U.E. a/c</u> <u>(Millions of Dollars)</u>	<u>10-Year Annual Operating</u> <u>Cost per Ship or U.E. a/c</u> <u>(Millions of Dollars)</u>	<u>Tons</u> ^{c/} <u>in 30</u> <u>days from</u> <u>CONUS to:</u> <u>Europe</u> <u>SEA</u>
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the communications zone. Account was also taken of the difference in on-hand stockage levels which would result from a more responsive all-air resupply system. The aggregate of these effects in one theater was that in the containment phase, a unit deployed and supported overland required the movement of about 40 percent more tonnage than the same basic unit deployed and supported by air. These tonnages were found to be a function of the length and condition of the ground LOC, or effectively, LOC travel time. Analysis of several theaters indicated that a general factor of _____ percent additional tonnage per LOC-day was appropriate where deployed units moved over and were supported by a ground LOC.

In our analysis, the large in-transit inventory associated with the ground LOC applied principally to ship-delivered forces which did not utilize the C-5A in a tandem operation. However, a similar increase was also applied to aircraft-delivered forces to account for the ground LOC from the terminal airfield to the points of commitment.

The extra tonnage that must be deployed when a force utilizes a ground LOC rather than an all-air LOC was explicitly accounted for in our analyses; the extra personnel costs were not. The extra tonnage and personnel in the ground LOC can be quite substantial, particularly in the counter-attack phase. To the extent that the C-5A makes an all-air LOC not only feasible but a standard operating procedure, these personnel, with a 10-year cost of about _____, would be available for elimination or to enhance the Army's readiness and combat power. The effective use of our rapid deployment capacity will require that a substantial part of these personnel be used to increase the readiness of combat units, although some net saving is likely to result.

c. Using FDLs and C-5As in Tandem

An additional mode of operation involved the tandem combination of ships and C-5As. Ship deliveries can be scheduled to major ports and beaches in or near the objective countries. Once unloaded, the Army units, instead of moving to the point of commitment over a ground LOC, can move to an airfield adjacent to the ship unloading areas to be picked up by C-5A and flown to the regular terminal airfields in the rear of the combat zone. In our analyses, ports and beaches in the objective countries were utilized, since that minimizes the demand for C-5A sorties. However, in the event of port congestion, or denial through sabotage or mining, the same operation could be carried out using transfer points outside of the theater.

The tandem FDL/C-5A operation provides an efficient combination of low-cost delivery of Army units from CONUS (in lieu of prepositioning) plus the flexibility, reduced support force requirements, and speed of in-country movement afforded by aircraft

delivery. In our analysis, the tandem operation was restricted to the C-5A for several reasons: transfer point airfields, particularly in the vicinity of beaches or smaller ports, would not accept C-141s; and even at the maximum daily sortie rates, C-130s simply could not clear away any substantial ship-delivered force. For example, 400 C-130 sorties would be required to haul away (leaving aside its inability to carry most items because of their size) what 40 C-5A sorties could do. Much of a ship delivered load is composed of equipment outsize to the two smaller transports. It simply would not be practical to split up the units involved and move the outsize fraction slowly up the ground LOC while the non-outsize fraction was flown to its destination, there to await a second marry-up with its slower-moving outsize counterpart.

2. The Economic Value of Peacetime Airlift Services

In the course of normal peacetime training, C-5As and C-141s generate the capability to provide logistical support to forces stationed overseas. An efficient utilization of this by-product capability can reduce the total costs of peacetime logistics activities as compared to reliance on alternative modes of cargo movement. Neglect of these spillover benefits would lead to an inefficient allocation of strategic lift resources.

Estimates of the peacetime economic value of the services provided to peacetime transportation users by both the C-141 and the C-5A were generated under a variety of assumptions. The marginal peacetime value for successive increments of either C-141 or C-5A capability declined and, for very large forces, finally disappeared altogether, since there is a finite amount of Departmental peacetime traffic available for movement by air. Conservative estimates (i.e., if anything, low) of the marginal value of the productive hours generated incident to normal training were subtracted from the basic C-141 and C-5A costs. The wartime rapid deployment mission was charged with the remaining costs. In this way, force mixes which minimize rapid deployment costs simultaneously minimize the sum of the costs of rapid deployment and peacetime resupply operations. (As a sensitivity test, however, analyses were conducted in which the aircraft competed without any credit for peacetime economic benefits.)

3. Limitations on Port, LOC and Airfield Throughput Capacities

A number of limiting constraints and other assumptions affect the productivities of deployment systems and modes of operation. These include limitations on the daily throughput capacities of ports, beaches, ground LOCs and airfields; time delays associated with loading and unloading ships and aircraft, marrying up troops and equipment at assembly areas near ship and aircraft unloading points, refueling, canal transit, and moving forces over-land to

points of commitment; and the necessity to deploy enroute support and airfield maintenance units for airlift systems. In computing the costs and productivities of alternative rapid deployment systems, estimates were made of these various factors. These are summarized in the Appendix tables. We also examined the sensitivity of our conclusions to changes in the basic assumptions.

E. Some Key Uncertainties Affecting Cost and Productivity

1. The Relative Vulnerability of Deployment Systems

The relative vulnerability of different deployment systems to enemy countermeasures has not been determined. Assuming a given enemy threat, the vulnerability of airlift deployments depends, among other things, on the distance of the terminal airfields from the FEBA, on the length of time during which the aircraft are exposed to attack and on the size or payload of the aircraft. The vulnerability of surface deployments depends, for example, upon the length and capacity of the LOC. The present analysis assumes that neither airlift nor sealift systems have significant disadvantages of vulnerability relative to alternative deployment modes. Some studies are being completed on the vulnerability problem which should resolve some of the major uncertainties. However, much additional study effort is needed.

2. The Value of Strategic Warning

The analysis summarized in this Memorandum assumes that deployment systems are activated simultaneously. However, if ships can be loaded and movement initiated prior to D-day on the basis of strategic warning, the productivity of sealift alternatives may be enhanced relative to that of quick reacting airlift systems. Unlike aircraft, ships and their loads can be moved significantly closer to the theater prior to D-day. The earlier arrival of deployment ships improves their capability to satisfy very early delivery requirements. In addition, the ships can achieve a greater number of round trips between prepositioning sites, or even CONUS, and objective areas. However, because of the complementarity between ships and aircraft associated with tandem operations, and because of the insurance value in owning more than one deployment system, a more detailed analysis of strategic warning is unlikely to affect sharply our conclusions concerning the preferred mix of deployment systems.

3. The costs of Deployment Systems

Additional analysis of system costs needs to be undertaken in some cases. Studies underway on the potential costs of FDL construction were mentioned above.

The analytical basis for charging rapid deployment systems with the costs of land-based and sea-based prepositioned Army equipment also needs to be refined. The present analysis charges the full costs of this equipment to the rapid deployment use. To the extent that this equipment also has a residual value as war reserve stocks, a different allocation of its cost is appropriate. Clearly, this will affect the cost-effectiveness of those deployment systems and operating modes which utilize prepositioned equipment. The desirability of forward basing FDL ships and the economies associated with land-based prepositioning are likely to be enhanced.

4. Operational Feasibility

Deploying forces rapidly and sustaining them in combat using new, efficient delivery modes can significantly reduce the duration and overall destructiveness of a conflict. Operational concepts and doctrine must be compatible with the attainment of this objective or else the value of owning a rapid deployment capability will be dissipated. Concepts such as force tailoring, for example, are designed to improve significantly our rapid deployment posture without seriously degrading the combat effectiveness of the deployed forces. Force readiness, all-air lines of communication, port/beach and air terminal operations, and post deployment re-supply of deployed forces, including bulk POL, must be examined in considerable detail using realistic scenarios to insure that the concepts employed in our rapid deployment analyses are practical and that their costs and risks are properly evaluated. The study program which the Services will undertake this year should greatly improve our understanding of how our deployment capability can be most efficiently utilized.

F. Least Cost Fleet Mixes^{a/}

Editor's note

The original text for this section occupied 9 pages. All of this text has been deleted due to the sensitive nature of the specific data used in the actual analysis. A general description of methodology used in this analysis is supplied below by the editor.

A very large number of possible combinations of land-based and sea-based prepositioning and airlift and sealift forces could be chosen. Of these possible combinations, many would perform rapid deployment missions efficiently. It was necessary, therefore, to search systematically among them to locate the "best" one or ones. Among these rapid deployment postures that would do the job more or less equally well, the "best" one was defined as that one which had the lowest total 10-year systems cost. As

^{a/} A linear programming model was used in performing actual calculations.

the footnote states, "A linear programming model was used in performing actual calculations." The word "model" here refers to a set of mathematical equations developed by the analyst and used to express the relationships between the mixes chosen and the 10-year system costs that characterized each of the mixes. The words "linear programming" refer to a mathematical technique employed in this particular analysis in order to examine alternative mixes systematically and insure that no low cost ones were omitted from the search for the best one, while at the same time avoiding the need to examine many combinations or mixes which could be ruled out without making actual calculations. In short, it was an efficient way to find the least cost mix. Use of such well defined mathematical techniques of analysis will not always be possible, since they demand thorough problem definition and good input data. What is important is that the analysis is systematic; it need not be highly sophisticated.

Several different assumptions as to on-hand land-based prepositioning were used during the analysis. For each case the "best" mix of airlift and sealift and new prepositioning was then calculated using the linear programming model. A more specific discussion of these basic postures follows below. As a second part of the analysis two of the major cost elements in the model were given different values in order to determine how sensitive the least cost solution might be to variation in the costs of various force elements. A discussion of some specifics of this "sensitivity analysis" also follows.

The least cost fleet mixes were determined using the linear programming model for the following cases:

(1) Base Case. The mix of airlift and sealift and prepositioned equipment, by type or location and by amount, required to meet the tonnage requirements for the multi-theatre system discussed in section B above constitutes the solution to this base case. The lower of two levels of on-hand prepositioning in Europe was used for this case. The ten-year systems cost of the resulting mix was also computed. This, and all subsequent total systems cost estimates, includes only the strategic lift forces, excluding the costs of tactical airlift, reserve and guard airlift units, and the non-FDL elements of the MSTS Nucleus Fleet.

(2) Case II. This case used the same input data as the base case except that a higher level of on-hand prepositioning in Europe was assumed. This higher on-hand prepositioning produces some reduction in 10-year systems cost. The resulting least cost mix shifted slightly from airlift to sealift forces as compared to the base case solution.

(3) Case III. This case eliminated one area as a possible prepositioning site. The mix of forces changed only slightly from the base case and the 10-year systems cost increased somewhat. The resulting increase in total systems cost can be interpreted as the value of the eliminated area as a prepositioning site over the 10-year period considered by the analysis. Such analysis can also be extended to include determination of the values of given routes, in particular the value of the overflight and transit rights, and of any site assumed to be available during a deployment.

(4) Non-availability of C-5A. The least cost mix was also computed assuming the C-5A was not a candidate for inclusion in the force. As a result, large numbers of C-141 aircraft were included in the force, and the total 10-year systems cost was nearly double that of the base case. The least cost mix also contained fewer FDL's than the base case mix. This result emphasizes the value of the efficient tandem C-5A/FDL combination. More emphasis is also placed on land-based prepositioning when a large, inter-continental airplane is not available.

It should be noted, however, that the C-141 was not used in tandem with FDL because of its limited forward area airfield landing capabilities, limited outsized capability and a much greater number of sorties required to clear ship-delivered tonnages from transfer point airfields. Before conclusions regarding the C-141 are accepted, however, a C-141 modified with a high flotation landing gear to allow its extended use in airfields close to the battle area should be evaluated.

(5) Case V. This case limits the airlift fleet to existing C-130E's and C-141's. The shortfall in deployment capability must be made good entirely by additional sealift forces. However, the total required deployment could not be accomplished with existing C-141's and C-130E's unless some of the constraints imposed on the previous cases were relaxed. The result showed that even when the C-5A is not available, the C-130E is not included in the least cost solution, constituting further evidence that the future value of this aircraft in strategic rapid deployment missions is negligible.

(6) Cases VI and VII. These two cases involved redoing the base case computations, each time with the elimination of the deployment requirements for one theater. The reduction in 10-year systems cost with a single theater omitted provides an estimate of the incremental cost of meeting the requirement of that theater. It was found that requirements in two of the theaters could be met at no extra cost with a force which could meet requirements in the other three theaters. Thus, the analysis can be used to reveal which "requirements" exert a drain on resources, and hence should be carefully evaluated, and which can be met at little or no extra sacrifice.

(7) Cases VIII and IX. Each of these two cases examined the solution for maintaining a rapid deployment capability to meet the requirements of only one theater. The resulting solutions show that if we know in advance where a contingency will arise, the best posture depends more heavily on prepositioning as near to the expected conflict as is practical. If, however, we desire to prepare to meet a variety of possible deployment requirements, distributed world-wide, as in the base case, we will rely more on flexible systems such as the C-5A and the FDL and less on land-based prepositioning.

All of the above cases include in the analysis an early tonnage requirement to be met in all theaters. Minimum requirements for tonnage delivered within a short period of time after D-day were specified beforehand for all theaters. In virtually all cases, however, the least cost mixes more than satisfied these early requirements. In other words, none of the deployment aircraft or ships were bought for the sole purpose of meeting these early requirements.

(8) Cases X, XI, XII. These cases constitute a sensitivity analysis on deployment requirements and the costs of forces. Case X repeats the analysis with the deployment requirements for three theaters reduced by two-thirds of their base case values. Case XI examines the effect of a reduction in the cost of FDLs. Case XII examines the effects on the least case mix of an increase in the cost of C-5As. The results of these three cases provide an opportunity to examine the implications of the estimates made for tonnage requirements and equipment costs on the least cost rapid deployment force mix.

G. Conclusions:^{a/}

As a result of all of the analyses that we have undertaken during the past year, I have concluded that:

1. A deployment force capable of rapid, world-wide response at least cost consists of a mix of aircraft and fast deployment logistic ships, plus limited land and sea-based prepositioned stocks at a variety of locations.

2. Under present assumptions as to optimal deployment strategies and requirements and the costs and capabilities of alternative deployment modes, the least cost mix of deployment systems consists of _____ to _____ C-5A, _____ - _____ FDL ships and _____ - _____ tons of new land-based prepositioning plus existing prepositioning.

a/ Editors comment: Because of the sensitivity of materials from which this document was derived, it was necessary to delete and alter some information. The result produces some conclusions which are less sharply drawn and less quantitatively supported than those contained in the original document.

3. Such a force has a 10-year systems cost of about _____ - _____ dollars after recognizing the value of the peacetime economic benefits which accrue as spillovers from normal training of the airlift portion of the force.

4. The precise mix of ships and aircraft in the total force is sensitive to system costs. However, it is apparent from C-5A/FDL trade-off analysis that the complementarity between C-5As and FDLs attributable to the efficiency of the tandem operation insures against single system postures. A posture relying on sealift cannot achieve rapid deployment objectives because of port and surface movement constraints in many areas of potential conflict, as case five indicated. The procurement of less efficient aircraft to serve as the backbone of an air line of communications is a costly alternative and requires extensive prepositioning in less developed areas. Moreover, the lack of an outsize cargo capability in these aircraft would necessitate dependence on a surface LOC for full TOE deployments.

5. Total systems costs are relatively insensitive to variations in individual system costs and to variations in other assumptions as well. Hence a number of rapid deployment postures are consistent with our objective of providing a deployment capability at least cost.

6. Whether it is more economical to base FDLs empty on the coasts of the U.S. or to base them forward with pre-loaded equipment depends upon whether the cost of the equipment represents an extra cost entirely chargeable to the rapid deployment mission or whether the equipment is available in whole or in part from war reserves.

7. Recognition of the peacetime and post deployment economic benefits of airlift forces is essential to an efficient allocation of resources among alternative deployment systems. However, even if these effects were ignored completely, C-5As would still be required in a least cost fleet mix.

8. Our present land-based prepositioning makes a valuable contribution to our rapid deployment posture.

9. In those cases where earlier studies came to different conclusions, the disagreement can be ascribed almost entirely to one or more of the following factors:

a. Use of the C-141 or an early version of the C-5A as the basic transport aircraft. Competitive procurement policies and explicit application of cost-effectiveness criteria during the Phase Zero and Contract Definition Phase work during the last year have resulted in an aircraft of sharply improved efficiency. The C-5A can compete successfully for a place in least cost fleet mixes that neither the C-141 nor the older

proposed version could manage. This is because, besides being able to carry 100 percent of the Army's equipment and its short field capability, the 10-year systems cost per ton deployed is X percent^{a/} of the C-141.

b. Neglect of the in-theater delivery problem. Substantial time penalties are involved and major increases in supporting forces are required to move combat forces into position and to sustain them over the long, primitive ground LOCs typical of underdeveloped areas.

c. Focusing on the requirements of a single theater or geographically proximate group of theaters. In these circumstances, least cost solutions appear to call for very large amounts of prepositioning and quite small deployment forces. However, if world-wide requirements are considered and the fleet mix is optimized over the entire range of potential theaters, then the sum of even two of the narrowly focused one-theater solutions becomes more costly than a more flexible aircraft/ship-rich mixture capable of world-wide response independent of extensive prepositioning. A deployment fleet broadly optimized to meet multi-theater requirements at least cost looks quite different than one narrowly focused on a single theater.

d. Neglect of the peacetime economic value of airlift services. Previous studies have not accounted for the value of airlift in moving cargos in peacetime. Neglect of this important spillover benefit leads to underestimates of the overall value of airlift to the Department of Defense.

It is clear that before proceeding to a still more ambitious program, it is essential to retest our conclusions with respect to ultimate force size and to reduce further residual areas of uncertainty. The major points which warrant additional study effort are as follows:

(1) Analysis of our capability to use our rapid deployment resources efficiently considering (a) the capacity of the theaters to receive and commit forces to combat, (b) the readiness of Army and TAC Air and Marine Corps units, (c) the adequacy of the CONUS transportation network. Such analysis is essential for the development of a five year movement capabilities plan and a five year program of airlift, sealift, prepositioned stocks and other mobility resources which can insure that our movement capabilities reflect an efficient use of the Department's mobility resources.

(2) A reevaluation of the original CJCS/SSG strategies with the particular objective of undertaking parametric sensitivity tests of key assumptions. The CJCS/SSG also needs to develop a

^{a/} Editor's comment: X is less than 100.

series of scenarios, strategies, and deployment profiles for other areas of interest for use with the least-cost fleet mix analyses. _____ are areas of particular interest.

(3) Studies and evaluation by the services of operational concepts and doctrine which employ large numbers of FDL ships and C-5A aircraft to deploy and assist in resupplying combat and support forces. Among these studies, which are necessarily inter-related, are the following:

(a) A comprehensive review of ground and air lines of communication during the deployment phase, to include evaluation of the operational procedure, costs, force requirements and risks associated with forward area air terminal operations, administrative over-the-beach deployments, and operations linking ports/beaches and airheads in an FDL/C-5A tandem operation.

(b) A thorough analysis of ground and air lines of communication in the post-deployment resupply phase, with special emphasis on force tailoring appropriate to each, in-theater stockage policies, out-of-theater facilities required, medical evacuation, resupply of high value war consumables, and a determination of the most efficient means of retailing supplies to field Army, corps, division and brigade levels under a variety of combat conditions (such as large scale redeployments) including an assessment of the effect of the C-5A/FDL combination on the required number and characteristics of future, intra-theater, retail delivery vehicles.

(c) An analysis of the relative vulnerability of airlift and surface deployments and resupply operations, the risks associated with particular operational concepts, and the critical parameters essential to evaluating vulnerability under a variety of combat conditions.

(4) Analysis of simultaneous contingencies and the denial of transit rights. An analysis of the reinforcement of NATO simultaneously with a deployment to other theaters is of particular importance.

(5) A study in detail of the costs and criteria for moving the Department's peacetime cargo by air and sea. A common data base on Army, Navy and Air Force cargo movements should be assembled to facilitate a line item analysis of the factors which govern transport costs. Analysis of this data should be used (a) to determine the economic value of the services provided by various mixes of organic airlift and sealift for the purpose of assisting in sizing the fleet and (b) as a basis for establishing tariffs for airlift and sealift services which accurately reflect the costs to the department of moving cargo by these modes.

(6) An analysis of the role, if any, of merchant shipping in performing rapid deployment tasks. This study should consider the costs and benefits of all alternatives available to the Department of Defense as well as the total costs and benefits of merchant shipping to the Federal government.

(7) A study of the costs and benefits of serial production and highly automated operation of standardized FDL ships.

(8) An examination of the new alternatives which become available in the context of a large, efficient airlift/sealift force.

TABLE A-1

AIRCRAFT CHARACTERISTICS

	<u>C-130E</u>	<u>C-141</u>	<u>C-5A</u>
Cruise Speed			
Penalty per Stop			
Utilization, Hours per day			
Allowable Cabin Load (s/t)			
Average Payload (s/t)			
En-route Support (s/t)			
Allowance for Differential Airfield Maintenance Effort (s/t)			
Net Effective Payload (s/t)			

TABLE A-2

AIRCRAFT DELIVERIES PER 30 DAYSDestinationOrigin

CONUS

C-5A
C-141
C-130E

OKINAWA

C-5A
C-141
C-130E

GUAM

C-5A
C-141
C-130E

PHILIPPINES

C-5A
C-141
C-130E

TURKEY

C-5A
C-141
C-130E

ITALY

C-5A
C-141
C-130E

HAWAII

C-5A
C-141
C-130E

Based on the following wartime hourly utilization rates and
cruise speeds (adjusted subsequently for wind and block times)

U.R.Cruise Speed

C-5A
C-141
C-130E

TABLE A-3

SAMPLE AIRCRAFT CAPABILITY COMPUTATIONS
C-5A AIRCRAFT FROM CONUS TO IRAN

<u>Base</u>	<u>Equivalent</u> <u>Air Distance</u>	<u>Ground</u> <u>Speed (Knots)</u>	<u>Time</u> <u>(Hours)</u>	<u>Time</u> <u>+0.25 Hr.</u>
Turner AFB to:				
Gander				
Chateauroux				
Cigli				
Hamadan				

Time for First Delivery

Abadan
Mildenhall
Turner AFB

Round Trip Time

Available time = _____ = _____
Minus time for First Delivery _____

Additional Round Trips = _____ = _____

Deliveries Per 30 Days = _____

McChord AFB to:
Hickam
Wake
Andersen
Clark
Korat

Time for First Delivery

Don Muang
Iwo Jima
McChord AFB

Round Trip Time

Available time = _____ = _____
Minus time for first delivery _____

Additional Round Trips = _____ = _____ = _____

Deliveries Per 30 days = _____ + _____ = _____

TABLE A-4

SHIP CHARACTERISTICS

<u>Item</u>	<u>FFD</u>	<u>FDL</u>
Average Payload, s/t		
Speed, Knots		
Delay Times, Days:		
Load (CONUS Based)		
Load (Shuttled)		
Marry-up		
Refuel, per 6,000 n.mi.		
Canal Transit		
Unload		

Available Locations:

TABLE A-5

ADDITIONAL TONNAGE REQUIRED
FOR GROUND LOC IN THEATERTheaterPercentage Increase

TABLE A-6

GROUND FORCE TRAVEL TIMES OVER SURFACE LOCs (DAYS)
(From Respective Points of Arrival in Theater to Point of Commitment)TheaterC-5A
AirfieldsC-141
AirfieldsC-130
AirfieldsShip
Ports & Beaches

TABLE A-7

DAILY THROUGH-PUT CAPACITIES
(Thousands of Tons)TheaterPortLOC

1 - Clarke
1 - Ecker
1 - Hildebrand

EXECUTIVE OFFICE OF THE PRESIDENT
BUREAU OF THE BUDGET
WASHINGTON, D.C. 20503

BULLETIN NO. 66-3

October 12, 1965

TO THE HEADS OF EXECUTIVE DEPARTMENTS AND ESTABLISHMENTS

SUBJECT: Planning-Programming-Budgeting

1. Purpose. The President has directed the introduction of an integrated Planning-Programming-Budgeting system in the executive branch. This Bulletin contains instructions for the establishment of such a system. It will be followed by additional instructions, including more explicit policy and procedural guidelines for use of the system in the annual Budget Preview.

2. Application of instructions. This Bulletin applies in all respects to the agencies listed in Section A of Exhibit 1. The agencies listed in Section B of that Exhibit are encouraged to apply the principles and procedures for the development and review of programs to the extent practical. (In this Bulletin, the word "agency" is used to designate departments and establishments; the word "bureau" is used to designate principal subordinate units.)

3. Background and need. A budget is a financial expression of a program plan. Both formal instructions (such as those contained in Bureau of the Budget Circular No. A-11) and training materials on budgeting have stressed that setting goals, defining objectives, and developing planned programs for achieving those objectives are important integral parts of preparing and justifying a budget submission.

Under present practices, however, program review for decision making has frequently been concentrated within too short a period; objectives of agency programs and activities have too often not been specified with enough clarity and concreteness; accomplishments have not always been specified concretely; alternatives have been insufficiently presented for consideration by top management; in a number of cases the future year costs of present decisions have not been laid out systematically enough; and formalized planning and systems analysis have had too little effect on budget decisions.

To help remedy these shortcomings the planning and budget system in each agency should be made to provide more effective information and analyses to assist line managers, the agency head, and the President in judging needs and in deciding on the use of resources and their allocation among competing claims. The establishment of a Planning, Programming,

and Budgeting System in accordance with this Bulletin will make needed improvement possible.

While the improved system is intended for year-round use within each agency, its results will be especially brought into focus in connection with the spring Preview. It should lead to more informed and coordinated budget recommendations.

4. Basic concepts and design.

a. The new Planning-Programming-Budgeting system is based on three concepts:

(1) The existence in each agency of an Analytic capability which carries out continuing in-depth analyses by permanent specialized staffs of the agency's objectives and its various programs to meet these objectives.

(2) The existence of a multi-year Planning and Programming process which incorporates and uses an information system to present data in meaningful categories essential to the making of major decisions by agency heads and by the President.

(3) The existence of a Budgeting process which can take broad program decisions, translate them into more refined decisions in a budget context, and present the appropriate program and financial data for Presidential and Congressional action.

b. Essential to the system are:

(1) An output-oriented (this term is used interchangeably with mission-oriented or objectives-oriented) program structure (sometimes also called a program format) which presents data on all of the operations and activities of the agency in categories which reflect the agency's end purposes or objectives. This is discussed in more detail in paragraph 5, below.

(2) Analyses of possible alternative objectives of the agency and of alternative programs for meeting these objectives. Many different techniques of analysis will be appropriate, but central should be the carrying out of broad systems analyses in which alternative programs will be compared with respect to both their costs and their benefits.

(3) Adherence to a time cycle within which well-considered information and recommendations will be produced at the times needed for decision-making and for the development of the President's budget and legislative program. An illustrative cycle which does this is described in paragraph 9.

(4) Acceptance by line officials (from operating levels up to the agency head), with appropriate staff support, of responsibility for the establishment and effective use of the system.

c. The products of the system will include:

(1) A comprehensive multi-year Program and Financial Plan systematically updated.

(2) Analyses, including Program Memoranda, prepared annually and used in the budget Preview, Special Studies in depth from time to time, and other information which will contribute to the annual budget process.

d. The overall system is designed to enable each agency to:

(1) Make available to top management more concrete and specific data relevant to broad decisions;

(2) Spell out more concretely the objectives of Government programs;

(3) Analyze systematically and present for agency head and Presidential review and decision possible alternative objectives and alternative programs to meet those objectives;

(4) Evaluate thoroughly and compare the benefits and costs of programs;

(5) Produce total rather than partial cost estimates of programs;

(6) Present on a multi-year basis the prospective costs and accomplishments of programs;

(7) Review objectives and conduct program analyses on a continuing, year-round basis, instead of on a crowded schedule to meet budget deadlines.

e. The entire system must operate within the framework of overall policy guidance -- from the President to the agency head, and from the agency head to his central planning, programming, and budgeting staffs.

and to his line managers. Fiscal policy considerations and other aspects of Presidential policy will be provided by the Bureau of the Budget in accordance with the President's program. Modifications will also have to be made from time to time to reflect changing external conditions, Congressional action, and other factors.

5. The program structure.

a. An early and essential step for each agency is the determination of a series of output-oriented categories which, together, cover the total work of the agency. These will serve as a basic framework for the planning, programming, and budgeting processes (including work on systems analysis, reporting, evaluation of accomplishments, and other aspects of management) and for relating these processes to each other. The following principles should guide the development of such output categories.

(1) Program categories are groupings of agency programs (or activities or operations) which serve the same broad objective (or mission) or which have generally similar objectives. Succinct captions or headings describing the objective should be applied to each such grouping. Obviously, each program category will contain programs which are complementary or are close substitutes in relation to the objectives to be attained. For example, a broad program objective is improvement of higher education. This could be a program category, and as such would contain Federal programs aiding undergraduate, graduate and vocational education, including construction of facilities, as well as such auxiliary Federal activities as library support and relevant research programs. For purposes of illustration and to aid understanding, Exhibit 2 shows some program structures as they might be applied to two organizational units within different agencies; the same approach, of course, applies to the agency as a whole.

(2) Program subcategories are subdivisions which should be established within each program category, combining agency programs (or activities or operations) on the basis of narrower objectives contributing directly to the broad objectives for the program category as a whole. Thus, in the example given above, improvement of engineering and science and of language training could be two program subcategories within the program category of improvement of higher education.

(3) Program elements are usually subdivisions of program subcategories and comprise the specific products (i.e., the goods and services) that contribute to the agency's objectives. Each program element is an integrated activity which combines personnel, other services, equipment and facilities. An example of a program element expressed in terms of the objectives served would be the number of teachers to be trained in using new mathematics.

b. The program structure will not necessarily reflect organization structure. It will be appropriate and desirable in many cases to have the basic program categories cut across bureau lines to facilitate comparisons and suggest possible trade-offs among elements which are close substitutes. It is also desirable to develop program formats which facilitate comparisons across agency lines (e.g., in urban transportation and in recreation).

c. Basic research activities may not be and frequently are not mission or output oriented. Whenever this is the case, such activities should be identified as a separate program category or subcategory as appropriate. However, applied research and development is usually associated with a specific program objective and should be included in the same program category as the other activities related to that objective.

d. To facilitate top level review, the number of program categories should be limited. For example, a Cabinet Department should have as many as 15 program categories in only a rare and exceptional case.

e. Program categories and subcategories should not be restricted by the present appropriation pattern or budget activity structure. (Eventually, however, it may be necessary and desirable for the "Program by Activity" portion of the schedules in the Budget Appendix to be brought into line with the program structure developed according to this Bulletin.)

6. The Multi-year Program and Financial Plan.

a. The entire process is designed to provide information essential to the making of major decisions in a compact and logical form. A principal product of the process will be a document, the Multi-Year Program and Financial Plan of the agency.

b. Thus, the process is concerned with developing for agency head review, and, after his official approval or modification, for Bureau of the Budget and Presidential review (as summarized in Program Memoranda, per paragraph 7c) a translation of concretely specified agency objectives into combinations of agency activities and operations designed to reach such objectives in each of the stated time periods.

c. The Program and Financial Plan will:

(1) Be set forth on the basis of the program structure described in paragraph 5, above.

(2) Cover a period of years, usually five, although the number will vary with the considerations pertinent to particular agencies; for example, a longer time span would be appropriate for timber production and for large multiple-purpose water resource projects. The multi-year feature is not to be compromised by the expiration of legislation at an earlier date, since extension or renewal, with possible modification, of the legislation should be reflected in the Plan.

(3) Include activities under contemplated or possible new legislation as well as those presently authorized.

(4) Show the program levels which the agency head thinks will be appropriate over the entire period covered by the multi-year plan.

(5) Express objectives and planned accomplishments, wherever possible, in quantitative non-financial terms. For example, physical description of program elements might include the additional capacity (in terms of numbers to be accommodated) of recreational facilities to be built in national forests, the number of youths to be trained in Job Corps camps along with measures of the kinds and intensity of training, the number of hours of Spanish language broadcasts of the Voice of America, the number of children to receive pre-school training, and the number of patients in Federally-supported mental hospitals. In some programs, it may not be possible to obtain or develop adequate measures in quantitative physical terms such as these but it is important to do so wherever feasible. In any case, objectives and performance should be described in as specific and concrete terms as possible.

(6) Where relevant, relate the physical description of Federal programs to the entire universe to be served. For example, a poverty program plan directed at aged poor should describe not only the numbers receiving specific Federal benefits but might well show what proportion of the entire aged poor population is being benefited.

(7) Associate financial data with the physical data to show the cost of carrying out the activity described. Cost data should be expressed in systems terms. That is, all costs -- such as capital outlay, research and development, grants and subsidies, and current costs of operations (including maintenance) -- which are associated with a program element should be assigned to that element. These component costs generally can be derived from existing appropriation and accounting categories. Where there are receipts, such as the collection of user charges or proceeds from sales of commodities or other assets, an estimate of receipts should also be included.

(8) Translate the costs and receipts used for analytic purposes, as described in the preceding subparagraph, into the financial terms used in Federal budget preparation, presentation, and reporting.

d. The Program and Financial Plan as approved by the agency head will be submitted to the Bureau of the Budget. The Bureau of the Budget will also be kept abreast of significant revisions and updatings (see subparagraphs e and f, immediately below).

e. The Program and Financial Plan, as approved or modified by the agency head in conformity with guidance received from the Bureau of the Budget and the President (usually following the annual spring Preview), will form the basis for the agency's budget requests. Therefore, it should not be changed except in accordance with a procedure approved by the agency head. Appropriate arrangements should be made for participation of the Budget Bureau in significant changes. #

f. Provision will be made for a thorough reappraisal and updating of the Program and Financial Plan annually. In this process, one year is added on to the Plan. Other changes to the Plan are to be expected from time to time and a procedure may be useful for making minor changes to the Plan without requiring agency head approval.

7. Analysis. An analytic effort will be undertaken to examine deeply program objectives and criteria of accomplishments. Whenever applicable this effort will utilize systems analysis, operations research, and other pertinent techniques. The analysis should raise important questions, compare the benefits and costs of alternative programs and explore future needs in relationship to planned programs. The sources of data used will be many, including most importantly, the Program and Financial Plan, special studies done throughout the agency, and budget, accounting and operating data. It is important to have continuity in the work of staffs doing this work and to build expertise in them over a period of years. As expertise is developed, more and more of the agency's activities can be subjected to these analytical techniques.

a. Special Studies on specific topics should be carried out in response to requests by the agency top management, the Budget Bureau, or at the initiative of the analytic staff itself. Suggestions should also be made by line operating managers. The special studies may involve intensive examination of a narrow subject or broad review of a wide field. The broad program studies envisioned here will often be hampered by a dearth of information and gaps in our knowledge which can be filled only by project studies and other micro-economic studies. Nevertheless, these broad studies should be assigned top priority in the agency's analytic effort.

b. Questions should be posed by the analytic staffs to other elements of the agency on program objectives, measures of performance, costs and the like.

c. A broad Program Memorandum should be prepared annually on each of the program categories of the agency. The Program Memorandum will summarize the Program and Financial Plan approved by the agency head for that category and present a succinct evaluation and justification. It should appraise the national needs to be met for several years in the future (covering at least as many years as the Program and Financial Plan), assess the adequacy, effectiveness, and efficiency of the previously approved Plan to meet those needs, and propose any necessary modifications in the previously approved Plan, including new legislative proposals. Thus, the Program Memorandum should:

(1) Spell out the specific programs recommended by the agency head for the multi-year time period being considered, show how these programs meet the needs of the American people in this area, show the total costs of recommended programs, and show the specific ways in which they differ from current programs and those of the past several years.

(2) Describe program objectives and expected concrete accomplishments and costs for several years into the future.

(3) Describe program objectives insofar as possible in quantitative physical terms.

(4) Compare the effectiveness and the cost of alternative objectives, of alternative types of programs designed to meet the same or comparable objectives, and of different levels within any given program category. This comparison should identify past experience, the alternatives which are believed worthy of consideration, earlier differing recommendations, earlier cost and performance estimates, and the reasons for change in these estimates.

(5) Make explicit the assumptions and criteria which support recommended programs.

(6) Identify and analyze the main uncertainties in the assumptions and in estimated program effectiveness or costs, and show the sensitivity of recommendations to these uncertainties.

d. In sum, the analytic effort will:

(1) Help define major agency objectives and subobjectives.

(2) Analyze and review criteria by which program performance is measured and judged, and help to develop new, improved criteria.

(3) Compare alternative programs, both in terms of their effectiveness and their costs, old as well as new.

(4) Develop reliable estimates of total systems costs of alternatives over the relevant span of years.

(5) Analyze the validity of cost data.

(6) Identify and analyze program uncertainties; test the sensitivity of conclusions and recommendations against uncertain variables.

(7) Carry out systems analyses to aid in making program choices.

8. Relation of the system to the budget process.

a. Two products of the system will be utilized in the spring Budget Preview: the Program Memoranda (which incorporate in summarized form the relevant portions of the Program and Financial Plan) and Special Studies.

b. All annual budget requests in the fall will be based on and related to the first year of the current multi-year Program and Financial Plan, subject to such modifications as may be required by changing circumstances since the Plan was last reviewed and approved by the agency head. Within this framework the detailed formulation and review of the budget will take place.

c. The introduction of the Planning, Programming, and Budgeting system will not, by itself, require any changes in the form in which budget appropriation requests are sent to Congress. Further, this Bulletin is not to be interpreted to set forth changes in the format of annual budget submissions to the Budget Bureau. Circular No. A-11 will be revised as needed to provide guidance on such budget submissions.

d. Over the next few years agency operating budgets used to allocate resources and control the day to day operations are to be brought into consistency with the Program and Financial Plan. Performance reports that show physical and financial accomplishments in relation to operating budgets should also be related to the basic plan.

e. The Planning, Programming and Budgeting functions are closely related and there must be close coordination in the work of the various staffs.

9. An illustrative annual cycle. Program review is a year-round process of reevaluating and updating program objectives, performance, and costs. The annual cycle described below is presented for purposes of illustration and will be refined and changed over time. It is intended to identify check-points to assure that essential steps are taken and that current reviews, revisions and recommendations are given consideration at appropriate times in the budget cycle. Insofar as this schedule affects internal agency operations and does not affect Bureau of the Budget scheduling, it may be modified by each agency head to suit his needs. The illustrative annual cycle shows in outline form how the system would work after it is established and operating for an agency participating in the Preview.

January. Changes are made by the agency to the prior multi-year program plan to conform to Presidential decisions as reflected in the budget sent to the Congress.

March. By March bureaus or similar major organizational units within the agency will submit to the agency head their current appraisals of approved program objectives and multi-year plans and their proposals for (a) needed modifications, including measures to meet new needs and to take account of changing and expiring needs, and (b) extension of plans to cover an added year (e.g., 1972). The Director of the Bureau of the Budget will advise the agency head of any change in the overall policies and objectives upon which the currently approved plan is based.

April. On the basis of instructions from the agency head following his review of bureau submissions, bureaus develop specific program plans.

May. Analytic staffs complete Program Memoranda. Agency head reviews program plans and approves Program Memoranda for submission to the Bureau of the Budget. He may want to assign additional studies on the basis of this review.

May-June. The budget preview is conducted by the Bureau of the Budget. The basic documents for this preview are the Program Memoranda prepared by agencies which are to be submitted to the Bureau of the Budget by May 1, and Special Studies to be submitted over a period of several months preceding this date. Presidential guidance will be obtained, where necessary, on major policy issues and on the fiscal outlook.

July-August. Appropriate changes to program plans are made on the basis of the guidance received and of congressional legislation and appropriations. Budget estimates, including those for new legislative proposals, are developed on the basis of the first year of the currently approved program plans (e.g., 1968).

September. Budget estimates and agency legislative programs are submitted to the Bureau of the Budget.

October-December. Budget Bureau reviews budget estimates, consults with agencies, and makes its recommendations to the President. Presidential decisions are transmitted to agencies, the budget is prepared for submission to Congress, and the legislative program is prepared.

January. Changes are again made by the agency to the multi-year program plan to conform to Presidential decisions as reflected in the budget sent to the Congress.

10. Responsibility and staffing.

a. Personal responsibility for the Planning, Programming, and Budgeting system rests with the head of each agency. Since planning, programming, and budgeting are all essential elements of management, line managers at appropriate levels in the agency must also take responsibility for, and participate in, the system. Responsibility should be so fixed that the agency head receives the recommendations of his principal managers (e.g., bureau chiefs) on program plans as well as on the findings and recommendations of centrally prepared analytical studies. Similarly, arrangements should be made for obtaining original suggestions, recommendations, and views from other echelons in a manner consistent with the assignment of responsibility and authority.

b. Specialized staff assistance is also essential in all but the smallest agencies. Such assistance will be especially useful in the preparation and review of Program and Financial Plans and in the preparation of the appropriate analytical studies. Each agency will, therefore, establish an adequate central staff or staffs for analysis, planning and programming. Some bureaus and other subordinate organizations should also have their own analytical planning and programming staffs.

c. No single form of organization is prescribed since agency circumstances differ. Planning-Programming-Budgeting activities are functionally linked but it is not essential that they be located in the same office so long as they are well coordinated. However, it is important that the head of the central analytic staff be directly responsible to the head of the agency or his deputy.

11. Initial action under this Bulletin. The head of each agency listed in Exhibit 1 should see that the following steps are taken by the dates indicated. It is recognized that this is a tight schedule. Nonetheless, the President's interest in the prompt establishment of the new Programming, Planning, and Budgeting system requires that each agency exert every possible effort to adhere to this schedule.

a. Within 10 days after issuance of this Bulletin -- the agency head should designate an official to be responsible for the development of the Planning-Programming-Budgeting system for the entire agency and inform the Bureau of the Budget of his choice.

b. By November 1, 1965 -- each agency head should have tentatively decided, in cooperation with the Bureau of the Budget, the broad program categories to be used initially in the system. Bureau of the Budget staff are prepared to make suggestions on these categories.

c. By December 31, 1965 -- agency instructions, procedures, or regulations for the Planning-Programming-Budgeting system should be issued, and a copy forwarded to the Bureau of the Budget. If it is not possible to have these in polished form by this date, they should be issued at least in such form as will allow the agency to proceed without delay on the steps necessary to produce the material required by May 1, 1966, with the more complete and polished instructions or regulations issued as soon as feasible but not later than March 31, 1966.

d. By February 1, 1966 -- each agency head should have approved the basic program structure (including program categories, program subcategories, program elements, and the nonfinancial units for measuring program objectives and accomplishments in quantitative terms) to be used in the program plan.

e. By April 1, 1966 -- a comprehensive, multi-year Program and Financial Plan should be completed for consideration and review by the agency head. The Program and Financial Plan, as approved by the agency head, will be forwarded to the Bureau of the Budget.

f. By May 1, 1966 -- for the spring Preview, Program Memoranda described above will be forwarded to the Bureau of the Budget. By this date or earlier, Special Studies will also be forwarded. More specific guidance and instructions will be provided by the Bureau of the Budget.

A. AGENCIES TO BE COVERED BY THE PREVIEW

Department of Agriculture
 Department of Commerce
 Department of Defense - separate submission for:
 Military functions (including Civil Defense)
 Corps of Engineers, Civil functions
 Department of Health, Education, and Welfare
 Department of Housing and Urban Development
 Department of Interior
 Department of Justice
 Department of Labor
 Post Office Department
 Department of State (excluding Agency for International Development)
 Treasury Department
 Agency for International Development
 Atomic Energy Commission
 Central Intelligence Agency
 Federal Aviation Agency
 General Services Administration
 National Aeronautics and Space Administration
 National Science Foundation
 Office of Economic Opportunity
 Peace Corps
 United States Information Agency
 Veterans Administration

B. OTHER AGENCIES FOR WHICH A FORMAL
PLANNING-PROGRAMMING-BUDGETING SYSTEM IS ENCOURAGED

Civil Aeronautics Board
 Civil Service Commission
 Export-Import Bank of Washington
 Federal Communications Commission
 Federal Home Loan Bank Board
 Federal Power Commission
 Federal Trade Commission
 Interstate Commerce Commission
 National Capital Transportation Agency
 National Labor Relations Board
 Railroad Retirement Board
 Securities and Exchange Commission
 Selective Service System
 Small Business Administration
 Smithsonian Institution
 Tennessee Valley Authority
 United States Arms Control and Disarmament Agency

PROGRAM CATEGORY EXAMPLES

Coast Guard

Present Appropriation Structure

General and Special Funds:

Operating expenses
Acquisition, construction and improvements
Retired pay
Reserve training

Intragovernmental Funds:

Coast Guard Supply Fund
Coast Guard Yard Fund

Present Activity Schedule

Vessel Operations
Aviation Operations
Shore Stations and Aids Operations
Repair and Supply Facilities
Training and Recruiting Facilities
Administration and Operational Control
Other Military Personnel Expense
Supporting Programs

Proposed Program Structure

Search and Rescue
Aids to Navigation
Law Enforcement
Military Readiness
Merchant Marine Safety
Oceanography and Other Operations
Supporting Services

PROGRAM CATEGORY EXAMPLES

Forest Service

Present Appropriation Structure

Forest protection and utilization
Cooperative range improvements
Forest roads and trails
Access roads
Acquisition of lands for national forests:

Superior National Forest
Special Acts
Cache National Forest
Wasatch National Forest

Assistance to States, tree planting
Expenses, brush disposal
Roads and trails for States
Other Forest Service permanent appropriations

Proposed Program Structure

Timber Production
Outdoor Recreation
Natural Beauty
Wildlife
Water
Forage
Minerals and Mining
Research
Other