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by

Arthur Clarke Argue III

March 1979

Thesis Advisor: John Shiels

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This thesis will examine these rules and their affect on the Navy's automatic data processing equipment acquisition system. An attempt will be made to determine changes which the Navy can make to improve the system and make it more responsive to the user's needs. The study will focus on both the approval and the contracting portions of the acquisition cycle.

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Acquisition of Automatic Data Processing in the Navy

by

Arthur Clarke Argue III
Lieutenant, Supply Corps, United States Navy
B.S., United States Naval Academy, 1972

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

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ABSTRACT

In recent years government agencies have become increasingly reliant on the use of automatic data processing equipment for accomplishing their daily tasks. Without this equipment most agencies, including the Navy, would not be able to function. As spending on automatic data processing equipment escalated at rapid rates, various rules and regulations were published by agencies in an attempt to ensure the effective management of this equipment. These rules often conflict with each other and often hinder activities trying to accomplish their missions.

This thesis will examine these rules and their affect on the Navy's automatic data processing equipment acquisition system. An attempt will be made to determine changes which the Navy can make to improve the system and make it more responsive to the user's needs. The study will focus on both the approval and the contracting portions of the acquisition cycle.

TABLE OF CONTENTS

I. INTRODUCTION 7

II. BACKGROUND 9

III. REGULATIONS 17

A. GSA GUIDANCE 18

1. Federal Property Management Regulations .. 19

2. Federal Procurement Regulations 23

3. Federal Management Circular 74-5 (FPR Section 101-35.2) 28

B. DOD GUIDANCE 31

1. DOD Instruction 5100.40 31

2. DOD Directive 4105.55 32

C. NAVY GUIDANCE 35

1. SECNAV Instruction 5236.1A 36

2. OPNAV Instruction 5236.1 38

IV. PURCHASING ORGANIZATION AND PROCEDURES 41

A. GSA SCHEDULES 43

B. OPEN MARKET 44

C. NAVDAC 48

V. PROBLEMS AND DISCUSSION 52

A. DEVELOPMENT OF SPECIFICATIONS 52

B. TIME DELAY 54

1. Congressional Involvement 58

2. Requirement for Delegation of Procurement Authority 61

3. Centralization of Procurement 64

C. BIDDERS' MAILING LIST..... 67

D. CLASSIFICATION AND DEFINITION OF ADPE..... 68

E. ACQUISITION OPTIONS..... 70

F. DEFINITION OF COMPETITION..... 74

VI. CONCLUSIONS..... 76

VII. RECOMMENDATIONS..... 84

EXHIBIT 1 NAVY ADP APPROVAL AUTHORITIES..... 91

EXHIBIT 2 NAVY ADP APPROVAL THRESHOLDS..... 92

EXHIBIT 3 AUTOMATED DATA SYSTEMS DEVELOPMENT APPROVAL THRESHOLD..... 93

EXHIBIT 4 COMMANDS DELEGATED APPROVAL AUTHORITY BY CNO..... 94

APPENDIX A GLOSSARY..... 95

LIST OF REFERENCES..... 97

INITIAL DISTRIBUTION LIST..... 99

I. INTRODUCTION

Since the introduction of the first general purpose computer into the Federal Government by the Bureau of Census in 1951, government agencies have grown increasingly dependent upon computers to accomplish their missions. Without the aid of computers most agency operations would come to a halt. Welfare and pay checks could not be prepared, the Department of Defense (DOD) communication system would be in a shambles, and the Navy supply system would be incapable of processing requisitions. During the Vietnam War the computer center at Ship's Parts Control Center in Mechanicsburg processed over one million inventory transactions per day (1:25). These are but a few of the areas where computers have become indispensable.

Along with the increasing reliance on computers by the government, there has been a predictable increase in the number of regulations governing their use. Regulations originating from federal agencies control every phase of a computer's life-cycle in the government - from the initial planning stages, through acquisition of the system, to the eventual disposal of the unit. These regulations apply not only to the actual computer but also to peripheral devices such as tape drivers, terminals, etc. No less than one public law, eight Office of Management and Budget (OMB) Circulars, forty-four Federal Information and Processing

Standards (FIPS Pubs), twenty-eight Government Accounting Office (GAO) reports and studies, and a multitude of other directives and regulations have been published to guide the Federal automatic data processing (ADP) manager. Within each branch of the government additional guidance is provided to meet each agency's unique requirements. One of the areas which is most regulated is the approval and acquisition process for the hardware in an ADP system. This study will focus on the rules and regulations which affect the acquisition of general purpose, automatic data processing equipment (ADPE) in the Navy. The purchase of supplies, software, and services will not be discussed. The system will be analyzed from the viewpoint of a Navy contract activity to determine whether the rules governing acquisition of ADPE allow the contract office to be responsive to the requiring activity. The entire acquisition process will be examined to determine if there is a need for a better system which would be more responsive to customer (user) requirements. Only the acquisition of general purpose computers will be discussed since there is a seperate procedure for purchasing tactical computers. Also, the study will focus on the purchase of ADPE rather than leasing equipment. Contractor acquired computers are not subject to the same regulations and will also not be discussed.

II. BACKGROUND

Beginning with the installation of the first general purpose computer in the Bureau of Census in 1951, the use of automatic data processing equipment (ADPE) in the Federal Government has increased dramatically. In 1951 it was projected that about a dozen systems would be in use by 1970. However, by 1965 the government was spending $1.132 billion for data processing, and almost 2,200 computers had already been installed. The growth continued to the point that in 1977 there were over 11,000 systems in use in the Federal Government (2). It is estimated that at the beginning of 1978 the Navy alone had 1,397 general purpose computer systems in operation (3). These figures do not include computers which are built or modified to a special government design and are integrated into a weapon or space system. In Fiscal Year (FY) 1965 DOD accounted for 60% of the annual federal ADP costs of $1.132 billion. The next highest agency was NASA which accounted for 16.5% of the costs. By FY 1975 the percentage of DOD costs to the total had decreased to 50.5%, but the total federal spending for ADP had increased to $3.1 billion. Again, DOD was far ahead of the next largest agency which was the Department of Treasury, accounting for only 14.5% of the total spending (4:24-25). Current estimates of the money being spent on ADP run from $3-$15 billion annually. At this level ADP expenditures could account for up to 4% of the total federal budget. The wide

range of the estimates is the result of the inability of the government agencies to develop reliable cost figures.

At the same time that total spending is increasing, the actual cost of computer equipment is decreasing. In 1953 the average cost of a computer system was $3 million; by 1977 this cost had decreased by almost 90% to $350,000 (5:73). The cost of performing calculations has decreased even more rapidly. In 1952 it cost $1.26 to perform 100,000 calculations on the normal computer. By 1977 the cost to perform the same 100,000 computations was less than $.01 and closer to $.005. This decrease occurred in the same period that the cost of a pound of coffee had risen from $.87 per pound to $4.20 per pound, and the cost of a medium-sized family car had increased from $1,800 to $4,200. Thus while the cost of computers has been declining, and will probably continue to do so in the near future, the computing power of the units has increased.

In view of the dramatic increase in the dollars spent on ADP, it was inevitable that Congress would intervene and attempt to maintain control over the proliferation of ADP systems in the government. This intervention came about in 1965 with the enactment of Public Law 89-306, or the Brooks Bill as it is commonly referred to. This bill was sponsored by Representative Jack Brooks of Texas and was the first attempt to exert some type of central control over federal ADP spending.

Prior to 1965 various government agencies would purchase or lease equipment based solely on their individual needs and without regard to other government requirements. The Brooks Bill was an attempt to "provide for the economic and efficient purchase, lease, maintenance, operation, and utilization of automatic data processing equipment by Federal departments and agencies" (7). The enactment of this law made immediate and drastic changes in the method of acquiring ADPE. The General Services Administration (GSA) was tasked with the responsibility of being the sole procurement agent for the Federal government for all ADP acquisitions. GSA was authorized to delegate this authority when considered necessary to allow for the efficient implementation of a program. Additionally, GSA was tasked with managing a pool of equipment which could be transferred among the various Federal agencies. The bill established an ADP fund which was to be used to fund expenses "including personal services, other costs, and the procurement by lease, purchase, transfer, or otherwise of equipment, maintenance, and repair of such equipment by contract or otherwise, necessary for the efficient coordination, operation, and utilization of such equipment by and for Federal agencies" (7). The National Bureau of Standards, under the Department of Commerce, was tasked with developing uniform Federal ADP standards in an attempt to standardize, as much as practical, Federal ADP operations. A third agency was also tasked by

the Brooks Bill. OMB (formerly the Bureau of the Budget) was designated as the policy maker and also as a "referee" between GSA and the user agencies. The bill specifically stated that the authority given to GSA should not be "construed as to impair or interfere with the determination by agencies of their individual ADPE requirements including the development of specifications for the selection of the types and configurations of equipment needed. The Administrator (GSA) shall not interfere with or attempt to control in any way the use made of ADPE or components thereof by any agency" (7). Any disagreement between GSA and the user as to the necessity of a procurement is to be forwarded to OMB for resolution.

Many industry experts feel that this bill, by centralizing all decisions, was also an attempt to ensure total competition in contracting for ADPE and to avoid having one company dominate the market. In 1964 one company, IBM, accounted for over 42% of all ADPE systems installed in the Federal Government. By Fiscal Year 1977 this same manufacturer accounted for only 11% of the total computers (2:21). One of the effects of this bill then was to change the Federal government from a market dominated by a few major companies into a competitive market with the hopes of getting the lowest possible prices. In 1965 three companies (IBM, CDC, and Sperry Rand) controlled 73% of the market. By 1977 these same three only accounted for 30% of the market (2:21).

It is apparent that the bill has fostered competition but there is much disagreement as to the savings gained from this competition.

Thus with the passage of this bill on October 30, 1965, the basic structure of the present ADP organization was established. The intent was to insure that ADPE would be used efficiently within the government. From this basic law has come a flood of other guidance. GSA has issued procurement and management guidance in publications such as the Federal Property Management Regulations (FPMR), Federal Procurement Regulations (FPR), and Federal Management Circular 74-5 (FMC 74-5) to name just a few. NBS has issued forty-four ADP standards covering everything from something as simple as standardization of the rectangular holes in punched cards to much more complex subjects such as the standardization of synchronous signaling rates between data terminal and data communications equipment. Although theoretically these standards are voluntary, GSA has made the inclusion of FIPS mandatory in all Federal procurements. OMB has also been active in influencing ADP procedures. They have issued eight OMB Circulars in addition to various other "guidance" which affect ADP procurement. Also, the General Accounting Office has issued over twenty-five various reports and studies which affect the procurement of ADPE. In recent years Congress has also become an active participant in the decisions of many agencies to procure ADPE. In the past two

years Congress has issued thirty "holds" on major ADP procurements (8:1000). This intervention often comes two or three years into the procurement cycle. In previous years this intervention has come mainly from the House Government Operations Committee or the "Brooks Committee" as it is commonly known. This committee has emphasized competitive procurements in all ADP transactions. This emphasis has been so strong that when GSA issued Federal Management Circular 74-5, an entire section was devoted to defining what elements may be included in developing "overall costs" of a vendor's proposal. It states that costs associated with converting one system to another vendor's product line cannot normally be used as a justifying factor for a sole source procurement. Therefore, the Brooks Committee tends to emphasize competitive procurements regardless of the total procurement costs.

In the Fiscal Year 79 Appropriations Bill a contrasting view was put forth by the House Appropriations Committee. This committee emphasized that consideration should be given to recognizing the "lowest total overall costs when purchasing ADP equipment and services." In the committee's opinion this approach was not being taken when evaluating proposals, and significant cost factors were being ignored.

It is obvious that the procurement of ADPE is a complex and time consuming process. In addition to the guidance listed above, each agency has developed its own implementing

directives and instructions to insure compliance with the multitude of rules and regulations. Often times rather than clarifying or attempting to simplify procedures, the agency regulations only serve to confuse and complicate the procurement process. As a result, many activities having a bonafide requirement for a relatively minor piece of computer hardware become confused and resentful when faced with the tangled array of rules and regulations. For a large computer system it has been estimated that up to four years may be required from concept formulation until the commencement of the actual acquisition. Depending on the complexity of the system, an additional nine months to two years is then required to conduct the actual acquisition. This results in a total cycle of approximately five to six years from the concept formulation stage until the completion of the acquisition. With six to eight years being the generally accepted figure for the time between successive computer generations, equipment is often out-of-date before a new system is even operating. A salesman from Honeywell estimates that the Federal Government process takes four times as long as a commercial procurement (9:46). Peter F. McCloskey, a former president of the Computers and Business Equipment Manufacturers' Association, states that the Federal acquisition process "frequently results in procurement of technology that is obsolete because of the time it takes to implement purchase" (9:46). One

estimate claims that in 1977 68% of the DOD ADPE inventory was obsolete (equipment which is no longer in production). This compares to a 35% figure for private industry and represents an increase from 35% in 1970 (8:999). The cost of built-in obsolescence is often measured by excessive personnel expenses. The Federal Government expends 47% of its ADP money on personnel costs while private industry's personnel costs are only 33% of total spending (9:46).

The increasing reliance on computers, combined with their decreasing costs and the recognition of potential applications in new areas, makes the growth of computers in the Federal Government likely to continue. Even today, the majority of computers in the Federal Government are used mainly in roles of accumulating and manipulating figures. (Accounting, payroll, and inventory constitute a large percentage of use.) As the government and Navy become more sophisticated in their application of computers and increase the use of computers in the actual decision-making process, the growth should continue.

III. REGULATIONS

Although the passage of Public Law 89-306 (Brooks Bill) in October of 1965 marked the first concrete attempt to "provide for the economic and efficient purchase, lease, maintenance, operation, and utilization of ADPE by Federal departments and agencies," it was not the first time that attention was focused on ADPE procurement practices. As early as 1953 the House Appropriations Committee (HAC) stated that no increases for the rental or purchase of business equipment would be allowed until the General Accounting Office (GAO) and GSA had conducted a review of all government business machines. However, all current regulations concerning ADP procurement have been influenced by the Brooks Bill. The bill consolidated authority for the acquisition of automatic data processing equipment under GSA. The bill gave GSA the authority to acquire, operate, fund, and dispose of ADPE for the entire Federal Government. However, GSA was not given the authority to "impair or interfere with the determination by agencies of their individual ADPE requirements including the development of specifications for, and selection of the types and configurations of equipment needed." This authority remained with each individual agency.

As required by the Brooks Bill, OMB issued guidance concerning ADP in 1965. OMB Circular A-71 tasked OMB with

the overall leadership and coordination of the management of ADP. OMB was to issue guidance to assist agencies to achieve increased cost effectiveness by improving their methods of selecting ADPE. GSA was tasked to:

1) Provide technical information to users on the capabilities and performance of ADPE.
2) Provide Federal Supply Schedules for use by agencies in ordering ADPE.
3) Ensure the efficient utilization of ADPE.
4) Attempt to standardize purchase procedures whenever possible.

The Department of Commerce was instructed to improve the compatibility of Federal ADPE by recommending uniform Federal standards and to undertake research on computer sciences which are oriented towards government applications. Agency heads were charged with the responsibility of:

1) Agency-wide planning, coordination, and control of equipment utilization.
2) Determining ADPE requirements.
3) Merging data systems regardless of interagency or intraagency organizational lines when such action has been determined to be cost effective.

A. GSA GUIDANCE

Armed with the authority conferred upon them by this circular, GSA proceeded to issue guidance to all Federal

agencies on the acquisition and management of computers. The three basic regulations are the Federal Property Management Regulations (FPMR sections 101-35 - 101-36), Federal Procurement Regulations (FPR section 1-4), and Federal Management Circular (FMC) 74-5 (which has recently been incorporated into the FPR but will be discussed separately). The FPMR covers subjects ranging from the determination of requirements to the care and handling of magnetic tape.

1. Federal Property Management Regulations

It is in the FPMR that the first of many studies is required to justify an ADPE acquisition. A well documented general systems study must be submitted with each agency procurement request (APR) for systems costing over $100,000. This study must show that the functions to be performed are essential and readily adaptable to automation; that an attempt has been made to reduce the work load before proceeding with an expansion of capacity; that it has been determined that an interim upgrade, software modifications, or schedule changes cannot be made to improve performance; and that the new system has been designed to achieve the highest possible effectiveness. GSA does not require a study for systems under $100,000 but does state that agency files must be documented to show that one exists. A second study is also required in situations where a new facility is being established. As required by OMB Circular A-76, a cost analysis must be performed to verify

that it would not be more appropriate to contract out for commercial ADP service.

For competitive acquisitions FPMR states that the specifications must be designed to ensure complete competition. Data system specifications are desired for initial system installation, while equipment performance specifications are desired for equipment replacement. Selection of the equipment is to be based on both the capability of the proposed equipment to fulfill the system specifications and the overall cost of the system. In addition to the acquisition cost, other items such as installation costs and operating costs must also be considered. FPMR states that the costs associated with converting one system to another vendor's product line may not be used as a basis for justifying a sole source acquisition. (This statement is an important one and has become the center of a large controversy between the House Appropriations Committee and the House Government Operations Committee.) The regulation also states that all alternatives for acquiring equipment must be considered when evaluating the proposed items. Methods such as purchase, lease/purchase, lease to ownership, and straight leasing all must be evaluated.

The purchase method is to be used when the cost analysis shows that this method will provide the lowest cost over the system's life, and the agency's approved

budget contains funds intended for the purchase. The lease/purchase method may be utilized when it is necessary to proceed with the acquisition, but it is desirable to defer a decision on actually purchasing the equipment until a later date because the money to purchase the equipment is not available or a period of operational experience is necessary to validate the system. Lease to ownership is normally used when it is desirable to own the equipment but the large sum of money required to purchase the equipment is not expected to be available. The straight lease plan is to be used when the other alternatives are not advantageous.

If the using agency determines that purchase is the most advantageous method but does not have the funds available, FPMR details the procedures the agency must go through to request funding from the ADP fund. This fund was established by the Brooks Bill to fund expenses "including personal services, other costs, and the procurement by lease, purchase, transfer, or otherwise of equipment, maintenance, and repair of such equipment by contract or otherwise necessary for the efficient coordination, operation, and utilization of such equipment by and for Federal agencies."

When a lease/purchase evaluation determines that purchase of the equipment is most advantageous to the government and agency funds are not available, then the activity

is to forward a request for funding from the ADP Fund. If a decision is made by GSA to finance the purchase, then money from the fund will be utilized to acquire the equipment. This decision is based on the estimated savings to be realized by the government and the amount of capital in the fund at the time of the request. When the purchase of the equipment is accomplished through the fund, GSA will retain title to the equipment. Arrangements will be made between GSA and the agency to reimburse the fund. These arrangements are normally in the form of a lease with an administrative charge added.

Another program mentioned in the FPMR is the reutilization program. Once again, this program had its origin in the Brooks Bill. Section III (b) (1) of the bill authorizes transfers of equipment between Federal agencies. Before an agency is authorized to proceed with commercial procurement of ADPE, they are required to have an approved GSA Form 2068 certifying that the desired equipment is not available through the reutilization program. FPMR explicitly states that without GSA's approval on this form, commercial procurement is not authorized. However, this approval does not constitute authority for a sole source procurement. It also states that when a contract has been awarded for ADPE and the item later becomes available through excess, consideration must be given to terminating the ntract.

ADPE is defined by the FPMR to be:

> "Automatic data processing equipment" (ADPE) means automatic data processing components and the equipment systems created from them, regardless of use, size, capacity, or price, that are designed to be applied to the solution or processing of a variety of problems or applications. Whether general purpose or special purpose, Government-owned or -leased, ADPE includes:
>
> (a) Digital, analog, or hybrid computer equipment; and/or
>
> (b) Auxiliary or accessorial equipment such as plotters, communications terminals, tape cleaners, tape testers, source data automation recording equipment (optical character recognition equipment, paper tape typewriters, magnetic tape cartridge typewriters, and other data acquisition devices), etc., to be used in support of digital, analog, or hybrid computer equipment, either cable connected, wire connected, or self-standing and whether selected or acquired with a computer, or separately; and/or
>
> (c) Government-owned punched card accounting machines (PCAM) used in conjunction with or independently of digital, analog, or hybrid computers.
>
> (d) ADP supplies such as but not limited to electronic data processing tapes, cannisters, reels, control panels and wires, cabinets, tape storage and safes and racks peculiar to ADP operations.

2. Federal Procurement Regulations

The next set of regulations, also issued by GSA, are the Federal Procurement Regulations (FPR). Section 1-4 of FPR deals exclusively with contracting and procurement of ADP items - including equipment, software, services, and supplies. The provisions of the regulations are applicable to all Federal agencies including DOD. FPR varies the definition of ADPE somewhat from that included in the FPMR. ADPE is defined to mean "general purpose commercially available, mass produced automatic data processing components..." while in the FPMR the definition states

"whether general purpose or special purpose..." This is the first of several inconsistencies between the FPR and other guidance. Two other important definitions are the distinctions between competitive and noncompetitive procurements. A competitive procurement is defined to be one in which the specifications are structured to allow for full competition and are not biased toward either a specific product or vendor (10:1-4.1102-16). A noncompetitive procurement or "sole source procurement" is one in which the agency's requirements are written in such a way that there is only one supplier capable of meeting the specifications. Procurements based on specific make or model specifications are considered noncompetitive regardless of whether or not there is adequate price competition (10:1-4.1102-18). This is different from the standard definition of a competitive procurement as defined in FPR 1-3.807-1(b)(1). This section states that price competition exists if two or more responsible vendors respond to an offer with bids which have been independently developed. This latter definition of price competition is consistent with the Defense Acquisition Regulations.

Section 1-4.1103 sets forth the general provisions of when authority must be obtained from GSA prior to procuring ADPE and also provides several cases where no approval is required. Agencies may procure ADPE when a specific delegation of procurement authority (DPA) has

been issued by GSA or when the acquisition meets the conditions listed within this section. All procurements must follow the procedures outlined in FPR. ADPE may only be acquired without prior GSA approval if:

1) The ADPE is specially designed for a specific application. However, commercially available ADPE shall not be procured under this provision unless it is modified to such an extent as to preclude future use of the equipment for other purposes.
2) The procurement will occur by placing an order against a GSA requirements contract.
3) The value of the procurement does not exceed $50,000 (10:1-4.1103-1).

This section of the FPR has been modified by FPR Temporary Regulation E-46, which expires March 31, 1979. Agencies are now permitted to conduct procurements without prior GSA approval in the following instances:

1) The ADPE is specially designed as opposed to configured for a specific application. This has not been changed.
2) The procurement will occur by placing an order against a GSA requirements contract.
3) The procurement will occur by placing an order against a GSA schedule contract provided that:
   (a) The order is within the terms and conditions of the contract;

(b) The order is within the maximum order limitation of the contract;

(c) The total purchase price does not exceed $300,000.

4) The value of the procurement does not exceed $300,000 for a competitive procurement or $50,00 for a sole source procurement.

Any action which does not meet the requirements above must be forwarded to GSA for approval. GSA then has the option of conducting the procurement itself or delegating the authority to the agency. The following information must be forwarded with the agency procurement request (APR) (10:1-4.1104):

1) Copies of the proposed solicitation document.
2) Estimated dollar value of the procurement.
3) Estimated system life.
4) Location of the data processing facilities involved.
5) The fiscal quarter during which the solicitation is expected to be released to industry.
6) A listing of any unique support requirements.
7) A statement that an evaluation has been made to ensure that the proposed procurement represents the lowest overall cost alternative to meet the need.
8) Evidence whether or not site construction is required.
9) Statement that the need to acquire ADPE has been documented as required by FMC 74-5.

10) Statement that all available ADP resources have been screened and none are available to meet the agency's need.

11) A thorough and complete justification, if applicable, of the requirement for a sole source acquisition.

Upon receipt of the APR, GSA has three courses of action. They may delegate the authority to conduct the procurement to the agency, delegate the authority with GSA participation, or conduct the procurement themselves. Action must be taken within twenty working days. If there is no response from GSA within this time period, the requesting agency may assume that a DPA has been granted. The responsibilities of the agency are also detailed and include administration of the contract.

Section 1-4.1107 contains procurement guidance which must be followed regardless of whether or not a DPA has been granted. All acquisitions must be conducted on a competitive basis to the maximum extent possible. To ensure that the maximum amount of competition is obtained, there are certain requirements for publicizing solicitations. A synopsis of the proposed acquisition must be published in the Commerce Business Daily (CBD). Each vendor listed on the GSA centralized Bidders' Mailing List (BML) for Federal Supply Classification (FSC) Group 70 must be informed of the pending acquisition and advised to request a copy of the solicitation if he desires to compete. Copies

of the solicitation document must be forwarded to all known active bidders and those who indicate a desire to compete.

Temporary Regulation E-46 has included an additional paragraph which permits the use of small purchase procedures for acquiring ADPE when the total procurement does not exceed $10,000. Items available on FSC Group 70 schedule contracts are exempted from this paragraph (11:1-4.1107-4). This temporary regulation allows the use of ADP schedule contracts for the initial acquisition of ADPE subject to the following limitations:

1) A purchase/delivery order may be placed against the ADP schedule contract provided the agency has the necessary ordering authority.
2) The dollar value of the order does not exceed $300,000 and is within the maximum order limitation of the schedule.
3) The acquisition is properly synopsized (11:1-4.1107-6(b)).

The FPR places tight control on any sole source procurements for ADPE. A copy of any contract or purchase/delivery order placed against a GSA ADP schedule contract must be forwarded to GSA if the value is between $10,000 and $50,000. Often times GSA will take a sole source procurement to the Brooks Committee to obtain their concurrence.

3. Federal Management Circular 74-5 (FPR Section 101-35.2)

The third major document containing procurement

guidance published by GSA is Federal Management Circular 74-5. The purpose of this circular is to establish policies for the management, acquisition, and utilization of ADPE. It was the intent of GSA to update and consolidate previous ADP policy into one directive. Most of the guidance contained in the circular has already been discussed, but there are several areas which are emphasized and clarified.

When selecting equipment under a competitive acquisition, two main factors should be used in evaluating the proposals:

1) The equipment's capability for fulfilling the system specifications and
2) The "overall cost" of the system.

"Overall cost" is defined as including "but not limited to such cost elements as personnel, purchase price or rental, maintenance of purchased equipment, site preparation and installation, programming, training, and conversion costs." The circular clarifies the apparent inconsistency between this and the FPR by stating, "In considering conversion costs, care must be taken to avoid undue biases or predispositions which are prejudicial to free and open competition. Conversion costs may be considered only to the extent that such costs can be shown to be clearly essential to continuing agency needs..." This requirement is further clarified by the statement, "The mere availability

of equipment within the existing vendor's product line which is compatible with installed equipment and which may offer a better cost-performance ratio is not a sufficient basis for deviating from C(1) and (2) above (requirement for competition). Any associated cost burdened with conversion of existing systems to other vendor product lines is not normally considered the conclusive factor in justifying such sole source or single product-line procurements. However, where potential conversion costs and/or operational impact are substantial and the requesting agency regards them as essential in a determination of 'best interests of the Government,' such conversion factors should be clearly and fully justified and documented" (11). Thus it is apparent with this guidance that software conversion costs may only be considered in evaluating bids in extreme situations.

A second important clarification is made concerning interim upgrades. When the feasibility study required by FPMR is made, it must contain a statement that an investigation was made into improving system performance through system modifications or an interim upgrade. If this method is determined to be most advantageous and the request is for sole source procurement of equipment to accomplish this interim upgrade, the approval will only be granted for two years. The agency must commit itself to replace the system or the equipment acquired via the sole source contract within two years.

The GSA guidance discussed provides the framework within which DOD and the Department of the Navy (DON) must conduct all computer acquisitions. There is much additional guidance provided by OMB and the Department of Commerce's National Bureau of Standards. However, GSA is the major agency which affects acquisition procedures.

B. DOD GUIDANCE

Within DOD there are a multitude of regulations governing ADP management and procurement. However, the two major instructions are DOD Directive 4105.55 (dated May 19, 1972) entitled "Selection and Acquisition of Automatic Data Processing Resources," and DOD Instruction 5100.40 (dated August 19, 1975) entitled "Responsibility for the Administration of the DOD Automatic Data Processing Program."

1. DOD Instruction 5100.40

DOD Instruction 5100.40 designates the Assistant Secretary of Defense (Comptroller) as the administrator of the DOD ADP program. As such, he is responsible for developing overall ADP program policies and criteria and assuring to the maximum extent possible uniformity of ADP throughout DOD. The Secretaries of the Military Departments are required to designate a Senior ADP Policy Official; to ensure that ADP systems are thoroughly evaluated prior to implementation; and to assure the effective selection, acquisition, and reutilization of ADPE. The definition of

ADPE contained in the instruction is the same as the definition contained in the FPR.

2. DOD Directive 4105.55

DOD Directive 4105.55 supplements 5100.40 and provides much more specific guidance on the acquisition of ADPE. This directive states that any decision to acquire ADP resources must be based upon a well documented study demonstrating that:

1) A valid requirement for the equipment exists.
2) Use of the ADPE is the most cost-effective method of meeting the requirement.
3) The system will be designed to provide the highest practicable degree of effectiveness.
4) The lowest overall cost alternative for satisfying the requirement is determined prior to selection and acquisition of the ADPE.

Consideration of redesigning the ADP system must be made prior to acquiring replacement ADPE. Acquisition of ADPE from commercial sources cannot be made unless it is first determined that the capability cannot be met by sharing existing equipment or utilizing excess equipment. In discussing the development of selection specifications and requirements, the directive requires that they be developed independently of a specific vendor's product to avoid restrictive specifications which limit the vendors who are able to respond. Also, all specifications must comply

with the Federal Information Processing Standards (FIPS) which are published by the National Bureau of Standards.

In an attempt to promote effective and efficient selection and acquisition of ADPE, this directive requires each military department to develop a professional, full time office to "develop solicitation documents, evaluate vendor responses, and competitively select digital ADPE." These activities are to be organized to procure high cost ADPE systems with a suggested lower limit of $500,000. Below this threshold it is suggested that procurement might be accomplished more efficiently at using activities or commands.

This instruction also specifies various responsibilities of the Service Secretaries. The Secretaries are responsible for approving the selection of ADP resources. This authority may be delegated with the following exceptions:

1) The acquisition of specified make and model ADPE with a purchase cost exceeding $500,000.
2) The acquisition of specified make and model ADPE when the total requirement exceeds the MOL of the applicable Federal Supply Schedule.

A copy of each approved sole source acquisition listed above must be forwarded to the Assistant Secretary of Defense (Comptroller) along with the justification for the action.

The definition of ADPE in this instruction is the same as previously defined, with the exception that it clarifies the type of computer equipment which is excluded from the definition. Computer equipment which is integral to a combat weapons system is excluded. Integral to a combat weapons system is defined as "being dedicated to and essential in real time to the performance of the mission of the weapons system in combat." Computer equipment which is utilized in support of a weapons system or can be procured directly from a commercial vendor and is independent of the weapons system is not excluded. A second important term is "specified make and model" which is defined to mean the "designation of a specific manufacturer's name and model number regardless of the source from which it is to be obtained." This definition is consistent with the definition of a noncompetitive ADPE procurement contained in the FPR, but not consistent with the normal definition of price competition.

It is with DOD Instruction 4105.55 that it first becomes apparent that there are actually two approval cycles required when purchasing equipment for a new ADP system. The first approval which must be obtained is the approval of the system concept. This document, often called the ADS Plan (Automated Data System Development Plan), is an economic analysis and justification of the proposed system. The actual requirement for the system must be justified to the

operational commander. Then the cost effectiveness of the system and its ability to satisfy the stated requirement must be justified to various higher level management reviews. Captain Jan Prokop in his book, Computers in the Navy, describes the ADS Plan as follows:

> The ADS Development Plan is designed to answer these fundamental questions: (1) Where are we? (2) Where do we want to be? (3) What specific steps are we going to take? (4) Who is responsible? (5) What resources are required? (6) Is the trip worth-while? As such, each ADS must be specifically defined with the impact on mission related objectives quantifiably identified, costed, and proven beneficial in terms of effectiveness with which it will satisfy the objectives of the functional operations to be supported (13:30).

The level of approval required is dependent on the estimated cost of the system. The development and approval of the ADS Plan is a complex and time consuming project and often, depending on the complexity of the proposed system, takes two years or more. However, this is only the first step in the acquisition cycle. The second approval required is the approval by the appropriate office of the actual acquisition.

C. NAVY GUIDANCE

The next level of authority is the Secretarial level. The Assistant Secretary of the Navy (Financial Management) has been designated as the Navy Senior ADP Policy Official (SPO). The ultimate responsibility for ADP in the Navy lies at this level. This is also the level at which most

important ADPE decisions are made. NAVDAC (Naval Data Automation Command) Instruction 5230.2 lists well over 40 current SECNAV (Secretary of the Navy) instructions dealing with ADP management. Therefore, although procurement personnel should be familiar with the contents of most of them, only the major instructions will be discussed.

1. SECNAV Instruction 5236.1A

Probably the most important instruction for procurement personnel is SECNAVINST 5236.1A entitled "Specification, Selection, and Acquisition of Automatic Data Processing Equipment" (ADPE). ADPE is defined in this instruction as it was in DODINST 4105.55 and contains the same basic discussions concerning equipment being integral to a weapons system. However, this instruction goes one step further and defines non-ADPE as "equipment classified on GSA FSS in FSS Classes other than 70." As will be pointed out later, this distinction has caused several problems when trying to determine if an acquisition is subject to ADP constraints. The instruction delineates the responsibilities of the Director, Department of the Navy Automatic Data Processing Management (DIR DON ADPM) and the Automatic Data Processing Equipment Selection Office (ADPESO), which has since been renamed ADPSO. ("Equipment" was dropped from the name.)

DIR DON ADPM is directly responsible to the SPO for preparation and accomplishment of Navy ADP objectives.

These responsibilities include, but are not limited to:

1) Developing and promulgating plans, policies, and procedures with respect to ADP review and evaluation.
2) Serving as the Source Selection Authority (SSA). However, this authority may be delegated.

In response to the requirement in DODINST 4105.55 for a professionally staffed organization to conduct ADPE procurements, ADPESO was established. Originally the office was concerned only with acquisition of ADPE but since has been charged with the added responsibility of acquiring all ADP items including software, services, and supplies. This resulted in changing the name to ADPSO. This instruction directs ADPSO to "evaluate and select for approval by the SPO, ADPE... to be acquired by the DON, to act as the DON contracting office for the procurement of ADPE..." They are also tasked with being the primary interface between DON, GSA, and vendors on acquisition matters. The instruction stipulates that the procurement of any new ADPE must be accomplished by ADPSO unless procurement authority has been specifically delegated to another activity. Administration of the contract will normally remain with ADPSO.

The instruction emphasizes, as has been the case with all previous guidance, that all procurements of ADPE must be conducted on a competitive basis to the maximum extent possible. The existance of an ADP Federal Supply Schedule does not waive the requirement for competition.

The Source Selection Authority (SSA) is defined as a DON official who is authorized to approve ADPE acquisitions subject to specified constraints. SECNAV NOTICE 5230 (dated April 12, 1977) modifies the ADP approval thresholds contained in the instruction. Exhibits 1 and 2 illustrate the current approval levels required for various ADP procurement actions. It should be noted that different levels of approval are required depending on whether the acquisition is sole source or whether it involves procurement of a Central Processing Unit (CPU). Further delegation of approval authority is encouraged. This notice also designates the Director, Command, Control and Information Systems Division (OP-942) as the Director, DON, ADPM.

Once again the distinction is made between the system concept approval (ADS Development Plan) and the acquisition approval. Exhibit 3 provides the levels of approval required for ADS Development approval. Prior to submitting actions for approval to the appropriate level, the ADS Development Plan must be approved, functional specifications must be validated, and the intent to provide funds for the program must be certified. As noted in Exhibit 2, actions greater than $1 million require certification at the ASN (FM) level.

2. <u>OPNAV Instruction 5236.1</u>

The next tier in the ADP hierarchy is the CNO (or OPNAV) level. Once again there is a multitude of guidance

available to "assist" in the management of ADP. Over 35 OPNAV Instructions currently contain information regarding the management of ADP. The most important of these instructions is OPNAVINST 5236.1. As encouraged by SECNAV NOTICE 5236, this instruction further delegates approval authority to organizations under the Chief of Naval Operations. Type Commanders and various other commands (see Exhibit 4) are granted approval authority for competitive actions less than $100,000 and sole source actions less than $100,000 provided they do not involve a CPU. The Chief of Naval Material is granted additional authority to procure ADPE which is designated "exclusively scientific." However, these approval levels are subject to the following GSA maximum order limits:

1) Acquisitions via the FSS are limited to one CPU or ten peripheral units of the same type. The value of the ten units may not exceed $500,000 (which would require higher level approval) or the MOL of the applicable schedule.
2) Non-FSS acquisition authority is limited to ADPE with a cost of $50,000.

All information concerning any ADPE acquisition over $2,000 must be forwarded to CNO at least twenty days prior to issuance of the order. Approval authority granted by the instruction may not be further delegated.

The above instructions are the major ones providing guidance on ADP approval and acquisition authority. However, none of the activities listed in the instructions as having approval authority are authorized to actually procure ADPE. Their authority is for administrative approval of the procurement request only. The authority to actually procure ADPE in the Navy is severely limited. Once the approval has been obtained to acquire the equipment, the request must be forwarded to an activity designated to conduct ADPE acquisitions.

IV. PURCHASING ORGANIZATION & PROCEDURES

Once the ADS Development Plan has been approved, the requiring activity must then commence the actual acquisition process. As mentioned previously, activities having approval authority do not necessarily have procurement authority. In recognition of the complexities involved in ADPE acquisitions and in an attempt to centralize ADPE procurement, the Navy Supply Systems Command (NAVSUP) has authorized a limited number of activities to procure ADPE. GSA may purchase equipment if it does not desire to delegate procurement authority. ADPSO also may purchase ADPE. Normally this office is responsible for large scale, complex procurements. SECNAVNOTE 5230 (dated April 12, 1977) states that ADPSO will normally be responsible for procuring ADPE requiring echelon one or two approvals. The Naval Supply Manual (NAVSUPMAN), Volume II, designates other activities which may procure ADPE. These activities are limited to the Navy Regional Contracting Offices (NRCO's) in Washington, D.C. and Long Beach, California; Naval Supply Center in Pearl Harbor, Hawaii; and local purchasing offices of NAVMAT RDT&E activities as designated by NAVMAT. No other offices within the Navy procurement system are authorized to procure ADPE. Prior to submitting a purchase request to a procurement activity, the approvals required by SECNAVINST 5236.1A must be obtained from the appropriate Navy command and GSA if required. GSA approval is required

except in the following situations:

1) The procurement will occur by placing a delivery/ purchase order against a GSA requirements type contract.
2) The value of a competitive acquisition does not exceed $300,000 purchase price. This limit does not include maintenance costs. It should be noted that this $300,000 level was only recently raised from $50,000 by FPR Temporary Regulation E-46.
3) The value of a sole source acquisition does not exceed $50,000 purchase price. Again this limit does not include maintenance.

If these conditions are not met, then a DPA from GSA is required before the purchase request is forwarded to the appropriate purchasing office. SECNAVNOTE 5230 assigns the responsibility for obtaining the DPA to the official designated as having final approval authority. Once a DPA has been obtained or it has been determined that a DPA is not required, the procurement request should be forwarded to the appropriate contracting office by the approving authority.

NAVSUP requires that compliance with reutilization programs, sharing programs, and required processing standards be certified on the procurement request by the activity providing technical support. Additionally, the contracting officer is to rely on the written certification of the ADP

approval official that various portions of the FPMR and FPR are not applicable to the specific acquisition.

A. GSA SCHEDULES

There are basically only two methods available to purchase ADPE. Equipment can be procured either competitively or sole source on the open market or from GSA schedule contracts. These GSA schedule contracts are administered by two different branches within GSA and are essentially divided into two types - mandatory and non-mandatory. A mandatory schedule requires that an agency attempt to satisfy its requirements from vendors on the schedule. Only if the requirement cannot be met by the schedule vendors can the agency acquire the item from another source. The mandatory schedules are administered by the Federal Supply Service (FSS) of GSA. Non-mandatory schedules are provided by GSA as a convenience only, and agencies are free to satisfy their needs on the open market if they so desire. As a matter of practice, agencies have been encouraged to open their requirements to competition rather than use these schedules.

The FSC Group 70 ADP schedule is a non-mandatory schedule. This schedule covers computer hardware and is administered by the Automated Data and Telecommunications Service (ADTS). Since non-ADPE is defined by SECNAVINST 5236.1A as equipment classified in "FSC Classes other than

70," the schedule on which an item is listed becomes very important. Equipment not listed in FSC Group 70 is not subject to the administrative controls required for ADPE.

Both the ADTS and FSS schedules are normally awarded to multiple vendors. This provides the using activity with the maximum flexibility to satisfy its requirements. There is one exception to this statement and that is a requirements contract. These contracts are competitively awarded to a single vendor. The advantage of this type of contract is that the government usually receives a low price. The solicitation results in keen competition among vendors since the winning vendor becomes the government's primary source of supply for the duration of the contract. Requirements contracts are an exception to the guidelines given above. Although they are considered FSC Group 70 items and are administered by ADTS, they are mandatory. There are currently fifteen contractors functioning under requirements contracts. However, in FPR Temporary Regulation E-46, GSA states that all current requirements contracts will be allowed to expire, and most will not be renegotiated. Contracts which are renegotiated will no longer be mandatory.

B. OPEN MARKET

If the user's requirements cannot be met by sources on the requirements contracts or Federal Supply Schedules, the contracting office may proceed with a "standard" advertised

or negotiated procurement. The "standard" ADPE procurement is significantly different than a procurement for other commodities. It is important that the contracting officer be aware of these differences. Some of these differences have already been mentioned, but they will be incuded here:

1) ADP is the only commodity in which DOD does not have unlimited procurement authority.
2) Not only is there a requirement that procurements be synopsized in the CBD, but notifications must be forwarded to all known active bidders plus all vendors listed on GSA's Bidders' Mailing List for contracts over $50,000. Copies of the solicitation must be forwarded to all requesting vendors.
3) Two copies of the solicitation must be forwarded to GSA eight days prior to release of the solicitation to industry.
4) Make and model specifications are considered to be sole source procurements rather than competitive actions, regardless of price competition.
5) When determining costs for proposed systems, a true total systems cost cannot be developed since GSA prohibits including the cost of converting system software.
6) DAR, the standard procurement reference for all DOD contracting, has only minimal guidance on ADPE

procurement. The guidance which is available deals principally with contractor acquired ADPE. Section 1-201.29 does contain a short definition of ADPE which is more specific than the definition in SECNAVINST 5236.1A.

7) For most complex acquisitions the agencies must develop a representative sample of the workload which will be run on the new system. This sample program is called a benchmark and is used to verify that the equipment proposed by the vendors meets the requirements in the solicitation. Development of a benchmark is an expensive and time consuming process for the agencies.

8) Selection of a vendor requires evaluation of four different methods of acquisition: purchase, lease with option to purchase, lease to ownership, and straight leasing. Each plan proposed by the vendors must be evaluated as a separate proposal. The proposal and method offering the lowest cost to the Navy must then be selected, provided the appropriate funding is available.

If the SSA for the acquisition is an echelon one or two command, then the requisition would normally be forwarded to ADPSO. The purpose of ADPSO, which was established in 1967 as ADPESO, is to provide a full time organization with expertise in the areas of specification development and

ADP selection and acquisition. ADPSO normally becomes involved quite early in the acquisition process. ADPSO will often help the requesting activity determine their requirements prior to approval of the ADS Plan. Upon approval of the plan, the Source Selection Evaluation Board (SSEB) is appointed by the Director, ADPSO. The board is comprised of a team leader from ADPSO, a technical representative from ADPSO, and representatives from the user organization. The SSEB's functions are preparation of the specifications, preparation of the selection plan, determination of the required and desirable features, and the conduct of vendor liason. Development of the selection plan is an important process since it provides the guidelines by which all proposals will be evaluated. Additionally, the SSEB is responsible for evaluating vendor proposals and recommending a vendor to receive the award.

A second committee which becomes involved with the acquisition is the SSAC or Source Selection Advisory Council. The members of this council are appointed by the ASN(FM), and it is chaired by the Director, ADPSO. In addition to the chairman, the council is composed of the contracting officer, an ADPSO representative, a CNO representative, and two or three members of the user organization. The SSAC is responsible for ensuring that the selection is carried out under current headquarters' policy and requirements. The council must review and approve the solicitation

document, selection plan, and the recommendation for the winning vendor made by the SSEB. The SSAC then recommends the selection to the appropriate selection authority.

Once the winning vendor is selected, another Navy activity becomes involved. The Navy Material Command (NAVMAT) must verify the award. This may require a survey of the vendor to determine his technical and financial competency. NAVMAT must also approve the selected system's reliability and maintainability. In addition to all of these reviews and approvals, the vendor must be cleared by the Equal Employment Opportunity Office, and in some cases the award must be approved by Congress. If the selection has survived all of these hurdles, it is then forwarded to the Senior ADP Policy Official for the final approval. Not until this point can the contract actually be signed. In recent years Congress has shown an increasing tendency to involve itself in this process and to delay acquisitions.

C. NAVDAC

Another activity which has not been discussed is the Naval Data Automation Command (NAVDAC). Having only been established on January 1, 1977, this activity is just beginning to make its presence felt in the ADPE procurement field. NAVDAC was established as an echelon-two activity under the command of the Chief of Naval Operations, with a mission to:

"Administer and coordinate the Navy non-tactical automatic data processing program. This responsibility includes collaboration on ADP matters with all ADP claimants; development of policy and procedures; approval of systems development; acquisition/utilization of ADP equipment and service contracts; sponsoring of ADP technology; and career development and training of ADP personnel." (14:1-1)

NAVDAC's functions for accomplishing this mission include:

1) Management of the ADP Computer Acquisition Program (CAP) for the Navy.

2) Reviewing and approving ADPE specifications and providing the single point of contact for tasking ADPSO to accomplish the selection and acquisition of ADP resources. This approval extends to the following types of actions:

   (a) Purchase of general purpose ADPE (sole source) up to $500,000.

   (b) Purchase of general purpose ADPE (competitive) from $100,000 to $1,000,000.

   (c) ADS Development Plans with costs from $500,000 to $1,000,000 for development through prototype installation.

Within the NAVDAC organization is the ADP Acquisitions Directorate (Code 20) which is tasked with the responsibility for providing "ADP acquisition expertise to NAVDAC and ADPSO and other procurement offices and coordinating and monitoring the promulgation of all necessary ADP acquisition information throughout the Department of the Navy." To

accomplish this assigned mission, Code 20 performs the following functions affecting ADPE acquisition:

1) Reveives, interprets, and promulgates Congressional, OMB, GSA, and DOD policies relating to the specification, selection, and acquisition of ADPE.
2) Acts as NAVDAC's primary interface with ADPSO.
3) Assigns responsibility for solicitation, selection, and acquisition of ADPE to ADPSO or alternately to NRCO's.
4) Acts as review and approval authority for contract acquisition actions.

As is evident from the above listing, NAVDAC has a very large responsibility covering the acquisition of ADPE. However, the organization is only beginning to make its presence felt due to its relative newness. Once NAVDAC (especially Code 20) begins to assume its entire functions, it seems evident that there will be an overlapping of responsibility between NAVSUP and NAVDAC.

This then is the basic purchasing organization for acquisition of ADPE. There are three completely separate commands directly involved in acquiring ADPE. GSA; ADPSO, under the command of NAVDAC; and various NRCO's and an NSC, under the command of NAVSUP, are actually tasked with purchasing ADPE for the Navy. One of the activities, GSA, is not even in the Department of Defense. Additionally, Congress (not even a part of the executive branch of the government) has

become increasingly involved in various procurement actions. As a result, there are often problems coordinating and delineating lines of responsibility among the activities.

V. PROBLEMS & DISCUSSION

In any complex procedure there are certain to be various problem areas, and the Navy's ADPE acquisition process is no exception. In recent years as the requirements for ADPE have grown, the complaints concerning the acquisition process have also increased. In the past two years steps have been taken to alleviate these problems, but in many cases the problems persist or the solution has caused new problems to surface.

A. DEVELOPMENT OF SPECIFICATIONS

One of the first problems users experience when attempting to purchase new ADPE is in developing the specifications to ensure that the equipment they receive matches their requirements. The acquisition of ADPE involves two completely separate processes with the first step being the development and approval of the ADS Plan. Upon approval of the plan the actual procurement cycle starts. Each phase has its own problems. NAVDAC uses 600 days as the estimated time needed to process a requir ement through the various steps. This estimate appears to be overly optimistic when compared to many other estimates available. Often the most neglected portion of the process takes place in the beginning, when the determination of the requirements is being made. Failure to devote adequate time and resources to this phase will cause numerous delays and problems further along in

the cycle. Often times a requiring activity does not have the technical expertise necessary to develop specifications. The activity then turns to the vendor for help in developing the specifications. This often results in "wired" specifications which are written in a manner which effectively limits or excludes competition. In an attempt to prevent this from happening, GSA encourages the use of performance specifications rather than equipment specifications.

However, the use of performance specifications also has problems. Before an activity can state what characteristics are required from the system, they must be able to state their objectives for the system. This requires predicting future requirements so that a system is acquired which is not outdated before being installed. Although predicting future requirements and workloads should be relatively easy, this has not been the case. Due to the long acquisition cycle, activities often must plan five to eight years into the future before a contract for new equipment is even awarded. It could be another year or two before the equipment is installed and operating. Activities must therefore plan specifications for a system which will not even be operating for three to six years, and then they must predict future requirements beyond that time to allow for system growth. Needless to say, this is a difficult procedure and requires a high level of expertise

by the user. It is therefore important that this planning and specification development be accomplished by personnel with expertise in the ADP field and by those who are familiar with information technology.

Due to the difficulty of this phase, a lack of expertise, and an excessive lead time, many activities attempt to shorten the cycle by hastily developing specifications. This frequently does not save any time and often results in longer procurements caused by intervention of outside agencies. Congress has shown an increasing propensity in recent years to intervene in procurements which have not been fully justified or do not seem adequately defined. Therefore, it is important for the contracting personnel to become thoroughly familiar with the user's needs and to ensure that the technical experts are totally involved in developing the requirements.

B. TIME DELAY

Probably the most frequently heard complaint from both industry and users is that the ADPE acquisition process is not responsive to their needs. One of the most vocal activities regarding this lack of response has been the Navy research and development community. The world of research and development is one of constantly changing requirements and quick response. The ADP environment demands that all requirements be planned out in advance so that the need for

ADPE can be economically justified. This does not readily adapt itself to research and development where the requirement often times cannot be predicted in advance. Often there is no way to predict the amount of computer time or amount of memory which will be needed to solve a particular problem. The Navy Research Advisory Committee in its "Report of the Subcommittee on Utilization of Laboratory Computers" states:

> The increased centralization of procurement and management decisions relative to RDT&E computers is reducing the effectiveness and flexibility of computer operations in the Defense Laboratories. The acquisition of ADPE is rigidly controlled by regulations, procedures, and reviews that are superimposed upon normal procurement regulations. Because of these controls, the planning of time-phased R&D projects that depend upon the acquisition of ADPE becomes extremely uncertain. In laboratories, ADPE is a tool of research and development and, in a sense, is no different from such other tools as electron microscopes, major test instrumentation, and so on. (15:39)

SECNAV NOTICE 5230 (dated April 12, 1977) provided some relief for the laboratories by delegating approval authority to CNM; however, it did not help other activities. The acquisition of computers is probably one of the most regulated processes within the government. As indicated previously, NAVDAC estimates that the approval cycle can take up to two years or more.

This time delay can be attributed to the overcontrol of the ADP acquisition process. On one occasion a Navy requisition was reviewed by various agencies and officials a

grand total of fifteen times (1:35). The Commission on Government Procurement in their report in 1972 recognizes this problem when they state:

> It should be recognized that substantial savings in ADPE procurement must be realized to offset administrative costs that are now associated with it. Elaborate controls and approval processes that have been built up are stifling the use of computers in new applications and have stretched the acquisition cycle to well over two years (16:53).

Since there is not just one agency tasked with providing guidance, each agency involved with overseeing ADP acquisition pursues its own goal of efficient ADP management. Congress wants to protect the privacy of individuals and ensure effective operations and the effective use of dollars. OMB stresses greater centralization of ADP resources in an attempt to reduce the number of computer systems and increase their effectiveness. The goals of the House Committee on Government Operations are to maintain effective acquisition practices with particular emphasis on competitive procurements. GAO's main thrust has been for more reviews at higher levels to ensure that total agency requirements are considered in all procurements. The agencies themselves want more control for themselves and less oversight so they can be responsive to the users' demands. With so many diverging viewpoints of what is "the best" course of action, the net result is a long and involved acquisition process (17:54).

This time consuming process has created several problems. In an effort to shorten the time between the awarding of the

contract and delivery of the system, many activities convince a vendor to start developing the system before the contract is even awarded. Needless to say, this is a dangerous option and can ultimately cause additional problems. As was mentioned before, the length of the acquisition cycle has been blamed for the high percentage of obsolete equipment still in use in the government. Rather than face the administrative burden of attempting to acquire newer, more efficient equipment, many agencies continue using installed equipment which is no longer efficient. The National Security Team in its report for the Federal Data Processing Reorganization Study found that "there is a technical deterioration and obsolescense in much of the computing equipment in all three of the services (DOD)" (1:9). They concluded that the average age of ADPE within DOD is six years older than similar equipment in the civilian sector. With the time between successive generations of computers averaging between six to eight years, DOD equipment (on the average) is a generation behind its commercial counterparts. This indicates that "substantial reductions in operating costs are being missed" (1:9). One industry computer salesman who deals solely with the government estimates that the government procurement cycle could be reduced by 50% (17:51). There are also other reasons for the complex procurement cycle.

1. Congressional Involvement

As was already mentioned, Congress has been taking an increasingly active role in procurement procedures. Since the passage of the Brooks Bill in 1965, Congressional interest in ADPE acquisition has become stronger. One of the major goals of this bill was to save the taxpayers money by increasing the use of competitive ADPE acquisitions. In 1968 60% of all government ADP procurements were competitive. By 1975 this figure had fallen to 36%. In an attempt to rectify this the Brooks Committee forwarded a letter to GSA in 1976 requiring that they be informed of all procurements meeting the following criteria:

1) All procurements with a systems life cost exceeding $500,000.
2) All sole source procurements.
3) All specified make and model procurements.
4) All interim procurements where a CPU is being acquired (18).

These reviews by the Brooks Committee have often resulted in excessive delays in procurements or even outright cancellations of projects which have been under development for several years. The primary emphasis of the committee has been in obtaining competition, often to the exclusion of all other costs. The policy on conversion costs illustrates this problem. FMC 74-5 does not allow software conversion costs to be used as a basis for

justifying sole source procurements. This prohibition is obviously in response to the Brooks Committee's pressure for competitive procurements. In one procurement in 1975 the Army attempted to purchase twelve IBM 360/65's under a sole source contract. Nine of the computers had already been acquired under a contract which provided for $16 million in savings if the additional three machines were acquired. The Brooks Committee required that the Army compete the procurement of the last three machines, thereby forfeiting a large dollar savings. However, a contrasting point of view has been put forward by another Congressional committee, the House Appropriations Committee (HAC).

In the FY-1978 Appropriations Bill the HAC states that FMC 74-5 does not consider the "lowest total overall cost" when evaluating vendors' proposals. The Committee directed that DOD develop and implement procedures to ensure that the "lowest total overall cost" be used to evaluate competing proposals in the future. "Lowest total overall cost" was to include conversion, programming, and training costs, in addition to the factors already included.

In the FY-1979 Appropriations Bill the HAC reemphasized this opinion and expounded upon the "lowest total overall cost" concept. It was the opinion of the Committee that the "Federal Government appeared to be maintaining a policy which provided for competition of the hardware phase of these procurements only and thus was failing to take

cognizance of the 'lowest total overall costs' when purchasing ADPE and services." The Committee did not feel that DOD was managing their ADP resources in an "economic and efficient" manner. They felt that the constant emphasis on competitive procurements was not in the government's best interest since significant cost factors were being ignored. Specifically being ignored were the software conversion costs and the possible decline in performance while a system was being converted to another vendor's product line. The Committee felt that all valid cost factors must be considered "whether they contributed to competition or not."

Representative Brooks' response to these charges was a reemphasis of the committee's dedication to full and open competition, which leaves DOD caught in the middle. Thus the field of ADPE acquisition is an area where the legislative branch has become involved in the day to day operations of the executive branch. This involvement frequently comes about well into the acquisition cycle and results in excessive delays and often outright concellations of requirements. These delays and cancellations promote feelings of anger and frustration among users who have a requirement which they cannot satisfy and also among vendors who often have made large investments in responding to solicitations and meeting benchmark requirements. This feeling of ill will and distrust among the vendors, users,

and approving agencies often results in users attempting to circumvent regulations or in actually reducing competition. Vendors become much more selective in determining which solicitations deserve response. Often vendors will bypass solicitations which do not have a very good profit potential.

2. Requirement for Delegation of Procurement Authority

A second area which has evoked a lot of controversy and has received partial blame for lengthening the acquisition cycle has been the requirement that DOD obtain a DPA for almost every acquisition. Temporary Regulation E-46 has eased this burden somewhat by granting a blanket DPA for any procurements less than $300,000 with the exception of sole source or specific make and model procurements. In these instances the limit is lowered to $50,000. If the purchase is being made against a requirements-type contract, no DPA is needed. Orders placed against an ADTS/ADP schedule contract are subject to the same dollar threshold as above with the additional restrictions that the order be placed under the terms and conditions of the contract and the maximum order limitation not be exceeded. If a request for a DPA is submitted and no response is received within twenty working days and an additional five days for mail lag, the agency is to assume that a DPA has been granted and proceed with the procurement.

The original purpose in requiring agencies to obtain GSA's approval prior to acquiring any ADPE was to enable GSA to determine whether the specifications were sound. It was hoped that GSA would be able to assist agencies in acquiring ADPE by providing technical expertise. Also, by having all requirements come to one agency, it was felt that requirements could possibly be combined or excess capacity in one activity could be utilized by another. In reality this has not been the case. The majority of the decisions of whether or not to grant a DPA are based upon GSA's workload at the time, the dollar value of the procurement, and the capability of the requesting agency. However, there are no definite guidelines, and a request which might be approved one month could quite easily be disapproved the next. Proficient agencies, such as DOD, complain that such case by case delegation makes planning difficult. By GSA's own admission they keep only 10% or less of the total DPA requests (19). This is a time consuming and expensive process to follow for the relatively small number of projects which GSA will keep. Of 96 contracts being administered by ADPSO in January 1979 only seven had been contracted by GSA, and of 35 contracts in various stages of work only two will eventually be contracted by GSA (20). Additionally, it should be noted that when GSA refuses a DPA and decides to conduct the procurement itself, the agency is required to furnish much support. FPR 1-4.1105-1

lists the following as agency responsibilities when GSA conducts the procurement:

1) Submit the required documentation;
2) Prepare the technical portion of the solicitation;
3) Provide necessary technical and contracting personnel as members of the negotiating team;
4) Prepare the selection plan;
5) Evaluate proposals from a technical point of view;
6) Determine technical capability of items offered to meet the agency's requirements;
7) Select the lowest overall cost item and transmit the information to GSA;
8) Assist GSA with any required debriefings of offerors;
9) Place the delivery order;
10) Administer the contract;
11) Accomplish any other task not listed above with GSA's concurrence which will expedite completion of the contract.

It is obvious from the list above that although the credit for awarding the contract goes to GSA, the majority of the work is still done by the using activity. Several study groups, including the Commission on Government Procurement and most recently the Acquisition Team of the Federal Data Processing Reorganization Study, have recommended that DPA thresholds be raised or, in the case of competent agencies, be eliminated. The Acquisition Team

recommends that agencies whose contracting expertise meets certain criteria be certified to conduct ADP procurements and be granted a blanket DPA.

3. Centralization of Procurement

The procurement system for ADPE within the Navy has also had a considerable effect on lengthening the acquisition cycle. With certain limited exceptions (NAVMAT laboratories) there are only four activities authorized to acquire ADPE within the Navy. These activities are ADPSO, NRCO Washington, NRCO Long Beach, and NSC Pearl Harbor. All internal Navy requirements must be purchased by one of these activities or by GSA. The determiniation of which procurement activity (NRCO's or NSC) gets a particular requirement is made solely on the basis of the requiring activity's geographic location. ADPSO normally assumes contracting actions on purchase requests requiring high level approval. However, there is no definite cutoff to determine what ADPSO will and will not accept. After a requirement has received the proper level of approval, the purchase request is forwarded to ADPSO who then determines whether they will procure the item or whether it will be delegated to one of the NAVSUP activities.

This procedure has caused problems at the NAVSUP activities since they do not know when items will be delegated. The determination by ADPSO of whether or not to delegate a requirement is normally based on their workload

at the time. The problem of delegation is further complicated by the fact that ADPSO and the NRCO's and NSC Pearl Harbor are not in the same chain of command. ADPSO works for NAVDAC which is under the Chief of Naval Operations while the other procurement activities work for NAVSUP which is in the NAVMAT chain of command. NAVSUP is tasked with the responsibility for "procurement of materials and services throughout the Department of the Navy for which no other procuring activity is otherwise delegated procurement authority" (21:1-3).

However, NAVDAC's mission includes "...development of policy and procedures;...acquisition/utilization of ADP equipment...." Thus there are two separate activities currently tasked with acquiring ADPE within the Navy. This overlapping of responsibility and crossing lines of authority has been the source of confusion among procurement activities. Separation of the acquisition function between two activities results in conflict between the two organizations. Two activities in completely separate chains-of-command should not both be responsible for the acquisition of ADPE. NAVDAC should establish guidelines and policy for ADPE acquisition, while NAVSUP should be responsible for the actual purchasing of the equipment.

In addition to the management problems, the centralization of procurement has resulted in large backlogs of work to be processed. At the end of December 1978 ADPSO

had 138 contract actions (contracts being negotiated, amendments to contracts, etc.) in process. They were responsibile for administering 96 contracts with a dollar value approaching $476 million. There also was a backlog of 35 additional contracts with an estimated dollar value of $800 million waiting to be processed (20). To handle such workloads ADPSO has a contracting staff consisting of two branch chiefs and thirteen negotiators. The typical workload for an ADPSO contracting representative is three to four projects and seven contracts for administration. This compares to an average GSA workload of two projects per negotiator.

At NRCO Washington the staffing situation is even worse. In FY-1978 the ADP branch wrote 278 contracts for the entire year. At the start of FY-1979 in October 1978 Washington had over 300 requisitions on hand. By mid-December this total had increased to 1400 requisitions, and in mid-January there were over 100 requisitions which had not even been assigned to a negotiator. Lead time for an important requisition was from six to nine months with routine requirements taking even longer. This workload was being handled by six negotiators. NRCO Long Beach had had a similar problem in the past, although not as drastic since they experience only 20% of the volume that NRCO Washington does.

Many of the actions being handled by the NAVSUP activities are rather routine and do not require much work to award a contract or delivery order. However, an action which could possibly be completed in three or four days must wait six to nine months before any action is taken. One of the drawbacks which is always listed when considering the pros and cons of a centralized activity is the potential lack of responsiveness to the requiring activity's needs. A six to nine month backlog appears to be unresponsive to the customer's needs. It must be recognized that the workload figures given are not only requests for ADPE but include all ADP requirements. This is considered a valid comparison, however, since all ADP requirements are normally handled in the same branch, and the total workload has a direct effect on processing time for ADPE requirements.

C. BIDDERS' MAILING LIST

Activities have been experiencing problems with GSA's requirement for publicizing ADPE procurements. Any procurement greater than $35,000 made from a GSA schedule must be publicized in the Commerce Business Daily (CBD). This allows vendors not on schedule an opportunity to compete for the procurement if they can offer a price lower than the schedule price. This allows activities to utilize GSA schedule contracts to meet their needs while still maintaining competition. However, for all procurements above

$50,000 an additional action is required. Each vendor listed on the applicable GSA Centralized Bidders' Mailing List (BML) must be forwarded a synopsis of the proposed acquisition and allowed time to request a copy of the solicitation. Most BML's are extremely voluminous with some having as many as 500 vendors listed. The vendors are located throughout the United States. One listing contained vendors from Amherst, New Hampshire all the way to Anchorage, Alaska. This procedure requires a large expenditure of time and money with minimal return.

In one sample NRCO Long Beach made three separate mailings utilizing the BML's. Two of the mailings were to 514 vendors and one to 430 vendors. A total of 85 responses to the synopsis were received, and 25 of them were from vendors who had already responded to the synopsis in the CBD. Thus a net increase of 60 additional vendors or a 4.1% response was obtained from the 1,458 mailings. This appears to be a minimal return for such a large administrative effort.

D. CLASSIFICATION AND DEFINITION OF ADPE

GSA has categorized its various commodities into approximately 77 groups. These groups are further subdivided into 604 classes. FSC Group 70 has been designated as the category for ADPE. The schedule contracts under which this equipment may be purchased are administered by ADTS. These

contracts are not mandatory, and as a matter of practice ADTS has encouraged agencies to compete their requirements rather than rely solely on the schedules. This has caused many vendors to have their equipment listed on other mandatory schedules under the control of the Federal Supply Service. Much ADPE was once classified in FSC Group 58-Communication, Detection, and Coherent Radiation Equipment; FSC Group 66-Instruments and Laboratory Equipment; and FSC Group 74-Office Machines and Visible Record Equipment. Agencies were not unhappy with this development since they could now satisfy their ADPE requirements by purchasing equipment from mandatory schedules. They also did not have to follow the administrative procedures required for ADPE since non-ADPE was defined by SECNAVINST 5236.1A as equipment classified in FSC Groups other than 70.

As time passed it became increasingly difficult to determine which items were really ADP and which were not. To further complicate matters, in 1976 GSA issued a blanket DPA to all agencies permitting them to acquire items with "inherent ADP capability" from FSC Groups 58, 66, 67, and 74. In August 1977 a GSA task force was formed to review the questionable products and determine their correct classification. In November 1978 the task force announced that it had found 9,506 items mis-classified. Reassignment of 9,316 of the items was made to FSC Group 70, and 190 were reassigned from Group 70. This listing of specific

equipment should help alleviate previous confusion over the classification of ADPE, provided the listing is kept up-to-date and vendors are not allowed to circumvent the classification system.

It must be recognized that while this list solves the problem of determining what equipment is classified as ADPE, it also creates other problems. Many items which previously did not require any approval must now be processed into the already overloaded ADP pipeline. Workloads, already at unacceptable levels at the designated ADP contracting offices, will continue to increase. Agencies which could once satisfy their ADPE requirements by acquiring equipment from GSA schedules other than Group 70 have had this flexibility reduced. Therefore, it is imperative that this change be combined with a reduction in the administrative effort necessary to acquire ADPE. Failure to drastically reduce the time required to acquire ADPE and failure to make the system more responsive to meeting the user's requirements will negate any beneficial effects from this change.

E. ACQUISITION OPTIONS

When evaluating vendors' responses to solicitations the negotiator must consider four methods of procurement and determine which method is most advantageous to the government. The four methods which must be considered are outright

purchase, lease-purchase, lease-to-ownership, and "straight" leasing. Each plan has its own advantages and disadvantages which further serves to complicate the process. In most acquisitions outright purchase of the equipment will be the most advantageous to the agency. However, often times the agency will not have the money necessary to buy the equipment. Purchase of any item over $1,000 must be accomplished through the use of the Other Procurement Navy (OPN) appropriation. This appropriation contains a subhead specifically for the purchase of ADPE. OPN money is tightly controlled and must be budgeted for well in advance. If an activity has failed to plan adequately, it often does not have the proper money available to purchase the equipment. Proper planning should prevent this, but often "emergency" requirements arise which have not been budgeted for and no money is available for reprogramming.

It was for this reason that 89-306 contains a provision for establishment of an ADP Fund to be "available without fiscal year limitation for expenses...and the procurement by lease, purchase, transfer, or otherwise of equipment,..." The fund is to enable agencies to purchase equipment when it is clearly advantageous to the government do do so. It is also to be used to fund the Opportunity Buy Program. The criteria for use of the fund varies according to the funding level and often times is so restrictive that many activities are not able to take advantage of the fund.

The Committee on Government Operations in its report in 1976 on the administration of Public Law 89-306 concludes that the fund has not been utilized to its full advantage due to its limited funding. It recommends that the fund be "adequately funded to support the...Opportunity Buys, Requirements Contracts,..." (22:16).

In Fiscal Year 1979 the ADP Fund contained only $14 million to finance the purchase of equipment which has a high cost savings for the entire Federal Government. The funds were already committed before the year was even half over. This means that many purchases which could potentially have even greater savings than those funded early in the year cannot be financed. The agencies end up leasing the equipment at significant expense to the government. Each year in the FPMR Bulletin series a minimum percentage of cost savings which must be realized is specified before the fund may be used. This year the percentage is 35%. In actual practice the savings must be much greater before approval will be granted. In Fiscal Year 1978 twenty-six written requests were received for use of the fund. Only 12 were approved. This does not include the many requests which were made over the phone and were told that no funds were available. If the ADP Fund were funded at a higher level, many more activities would be able to take advantage of potential savings through purchase of equipment.

The last three methods which must be evaluated are variations of a lease. All three of these methods are able to be funded from the activity's normal operation and maintenance funds. The straight lease method is simply an agreement between the user and vendor for use of the equipment for a specified period of time at an agreed upon price. The lease-to-ownership plan differs in that upon completion of a specified period of time (normally five or six years), the government assumes title to the equipment. No lump sum payments are required at the completion of the period. The third plan, lease-purchase, is similar to the lease-to-ownership method since periodic payments are made for the use of the machine. However, at any time the activity may convert to a purchase agreement, and a specified portion of the rental payments will be applied toward the purchase price. A lump sum payment is then required to fund the difference between the earned credits and the purchase price. The last two methods may only be funded out of operating funds provided the periodic payments do not exceed the straight lease cost, and the period of time does not exceed twelve months (exclusive of renewal options). Additionally, NAVCOMPT Manual requires that in the case of the lease-purchase method "payments to be made pursuant to the purchase features of lease-purchase agreements, either as a lump sum, periodic, or a combination thereof, must be made from investment funds (OPN) if aggregating

$1,000 or more and, once determined to be owned, preclude any further application of expense funding" (23:074060-2c(8)).

FPMR section 101-35.206 discusses when the various options may be appropriate; however, it is incumbent on the contracting officer to evaluate each option of all vendors to determine which alternative is most cost effective. This evaluation requires a thorough understanding of the methods and requires that the systems life of the equipment be firmly established to use as a basis for the calculations. Often one vendor will provide the lowest purchase price but a second vendor will have the lowest price for the other alternatives. If investment funds are not available, the lowest priced vendor will not receive the award. Vendors often use this process as a means of selling the government older models of equipment. The vendor will propose an extremely low purchase price coupled with inflated lease prices. This makes the purchase option seem much more beneficial, and the government is required to buy the equipment if funds are available.

F. DEFINITION OF COMPETITION

Specific make and model descriptions of ADPE requirements are not considered competitive even if adequate price competition has been obtained. Normally non-ADPE acquisitions which are specific make and model or "brand name or equal" descriptions are considered competitive provided

adequate price competition has been obtained. This differentiation for ADPE imposes additional administrative controls over these "non-competitive" acquisitions since they are then subject to all of the sole source requirements.

A second problem area concerning competition is GSA's policy on interim upgrades. FMC 74-5 requires that any procurement which is not fully competitive be classified as an interim procurement. This interim procurement will be authorized only with the understanding that the requirement be competed within two years. The House Committee on Government Operations has reemphasized the requirement that the acquisition be solicited competitively within two years, and it has also directed that interim procurements be allowed only when the requirement is caused by a new or increased workload which could not reasonably be predicted. These policies are unrealistic since the acquisition and approval of a new system often takes from six to eight years. Just the actual mechanics of competing the requirement can take over a year and a half. To require an agency to install an "interim" system and have it operate correctly, to develop the requirements and specifications for the new system, to conduct the procurement, to install the "competitive" system, and to have it operating all within the "interim" two year period is not feasible. The time limit imposed is unrealistic in view of the amount of work which must be accomplished.

VI. CONCLUSIONS

The acquisition of ADPE is an extremely complex and time consuming process. It is a process which has spawned an incredible amount of rules, regulations, and guidance in an attempt to both guide and regulate the user. It is a process which has drawn the attention of users and regulators from the smallest Navy activity all the way up to Congress. There are as many opinions as to what is wrong with the system as there are users of ADPE. However, it is obvious that there are serious problems surrounding the procurement process. Some of them are solvable within the Navy; others are externally imposed and until the outside agency can be convinced to modify their requirements, no improvements can be made.

A. DEVELOPMENT OF SPECIFICATIONS

This portion of the acquisition process is often neglected when evaluating ADPE procurement. The basis for a smooth and efficient procurement starts with the development of requirements and the translation of these requirements into specifications. Failure by a user to adequately define its requirements and develop specifications will virtually assure future problems. The contract will either be delayed while inadequate specifications are revised after being commented upon by industry, or equipment will be acquired which does not satisfy the user's needs.

Therefore, it is important that this phase of the process not be treated superficially. The contracting officer must become involved in helping the user develop the specifications so that they reflect the needs of the requiring activity. In an article entitled "How Not to Choose an EDP System," Tom Glib Scharf lists common mistakes made by buyers of ADPE. Several mistakes are noted in this area:

1. Failure to define your own needs clearly and in sufficient detail for the manufacturer.
2. Failure to design an efficient system before calculating needed hardware capability.
3. Failure of managment to:
   a. Explain their problems.
   b. Clarify their goals and their policies (24:73-74).

Development of specifications is an area which has traditionally been reserved for the user. However, due to the complexity of an ADP procurement, it is important that the contracting officer become involved in this process as early as possible. ADPSO demonstrates an excellent example of this philosophy. However, with only twenty individuals assigned to developing specifications, ADPSO can only become involved with the largest of projects. This leaves the vast majority of requisitions without any specific technical expertise assigned. The NRCO's and NSC Pearl Harbor do not have any technical ADP expertise to assist users. The negotiators must try to acquire this through their

day to day activities. Even if an individual does have an ADP background, his knowledge is soon outdated since his main function as a contracting representative does not allow the opportunity to keep abreast of technology. This lack of expertise often results in extensive reliance on vendors for technical guidance with the frequent result being "wired" specifications.

B. RESPONSIVENESS

It is undeniable that the ADPE acquisition process is not responsive to the user. Anytime an activity must wait six to nine months to have a minor piece of equipment purchased, the organization of the system must be questioned. Centralization of approval and purchase is convenient for control; however, the effectiveness of activities is being affected by the long lead time necessary to procure equipment. It is recognized that control must be maintained over ADP resources. However, when the method of obtaining this control results in agencies using outdated, uneconomical equipment, the method of maintaining this control must be changed. Less reviews and more accountability are required. There are too many activities involved in the management and acquisition of ADPE. The procurement process has been used in an attempt to achieve control over ADPE. This control should be inherent in the approval process rather than built into the procurement cycle.

The purchasing organization for ADPE must be changed. The current backlog of work is unacceptable and results in users circumventing the system in order to satisfy their needs. In FY 77 there were 1,683 ($122,378,000) hardware acquisitions (FSC Group 70 only) made by Navy field activities. Of this total only 786, or 47%, were made by authorized activities. The remaining 53% were made by 38 "unauthorized" acitivities. The dollar value of these unauthorized acquisitions was $81,598,000, or 66%, of the total dollars spent. These figures do not include ADPE purchased from other FSC Groups. The GAO report on the Navy's ADP program found that activities within NAVAIR and NAVSEA had purchased $4.2 million worth of minicomputer equipment from other than FSC Group 70. It is obvious that for one reason or another field activities are not going through the proper purchasing procedures. With no record of what is being purchased, the Navy cannot adequately manage its ADP resources. If the contracting system were more responsive to the users, then the requiring activities would be less inclined to try to circumvent the system.

C. GSA BIDDERS' MAILING LIST

The requirement that contracting activities forward synopses of ADPE procurements to all vendors listed on the appropriate BML is just an administrative drill. In the early days of the industry, when the government constituted

a large percentage of the ADP market, this requirement served a useful purpose. Today the government does not have the influence on the ADP market which it once did. Additionally, the ADP market has become an extremely competitive environment with the emergence of the manufacturers of "plug-compatible" computers and peripherals. Hardware costs, accounting for less than 40%, have been declining as a percentage of ADP budget costs. By 1985 it is estimated that less than 20% of the ADP budget will be for hardware. Thus the market place is significantly different than when many of the regulations were issued by GSA. In view of the changed environment for ADPE procurement, the administrative effort and cost involved in meeting GSA's BML requirement are not cost effective. This is one small area where some cost savings can be made and some delay in the system can be removed.

D. CLASSIFICATION AND DEFINITION

GSA's action to clarify the uncertainty regarding the definition of ADPE should help avoid many future problems. A list is not an ideal way to define a category since it requires constant updating and publicizing to be effective. Additionally, there are always items which are overlooked and not included. However, this appears to be the best solution, provided all other activities accept it and do not attempt to make changes to the list. Otherwise it

will become an almost impossible task just to keep up with the exceptions and additions. Internal Navy instructions must now be changed to conform to this definition.

Although this list solves the administrative problem of defining ADPE, the reclassification is detrimental to the using agencies. Activities have lost flexibility in meeting their requirements. Thousands of additional items are now classified as ADPE and must be processed through the ADP heirarchy. If this expanded definition of ADPE is not accompanied by a relaxation of the administrative controls over ADPE, the entire system could collapse. In an effort to satisfy bonafide requirements for ADPE to accomplish their missions, activities will out of necessity begin ignoring established controls and regulation, and the Navy will lose control over the management of ADPE.

E. ACQUISITION OPTIONS

The requirement to evaluate all options available to meet the needs of the requiring activity is a sound principle. However, in practice it cannot be carried out effectively. Most analyses will show that any system which does not have an abnormally short life will be most cost effective if purchased. However, the lack of an adequate supply of investment funds frequently prohibits this course of action. The paucity of funds results in restrictive criteria governing the use of GSA's ADP Fund. Agencies are

therefore unable to take advantage of potential dollar savings by purchasing required equipment.

F. COMPETITION

The constant emphasis on competition by the House Committee on Government Operations has failed to account for the changing ADP environment. From an industry which was once dominated by one supplier (IBM) and one buyer (the Federal Government), the ADP market has become extremely competitive. The Federal Government now accounts for only 7% of all ADPE procurements within the United States (25:17), and it can no longer influence the market as it could in prior years. This fact should be recognized by the House Committee on Government Operations and GSA, and the artificial rules used to create competition should be eliminated.

The policy of granting interim upgrades for only a two year period degrades the effectiveness and efficiency of agency operations. Forcing activities to install this new system within two years is wasteful. Most commercial firms purchase one brand of computer and then upgrade within that product line. This precludes having to retrain personnel and incur excessive software conversion costs. The House Appropriations Committee has adopted a much more reasonable approach to this problem. By requiring agencies to evaluate all costs, including software conversion, the HAC has realised that a competitive acquisition may not provide the

lowest cost just because the initial purchase price is the lowest. In this time of limited resources, this approach to acquisition of ADPE is crucial.

VII. RECOMMENDATIONS

A. REVISE ADPE PURCHASING ORGANIZATION

To be effective any organization must be responsive to its clients. As presently structured, the ADPE purchasing organization is not responsive. Centralization of the purchasing authority in the present manner has not been effective. The large backlogs of work at the designated contracting offices are signs of this problem. Purchasing authority for ADPE should be delegated to other contracting activities. However, the acquisition of ADPE is a complex and technical process and requires a high degree of expertise from the purchasing agency. Therefore, not all purchase authority should be delegated. ADPSO should continue to procure expensive and complex systems. ADPSO should be responsible for procuring all ADPE with a systems life cost exceeding $500,000, which is the threshold requiring ASN (FN) approval. All actions below this level should go to the NAVSUP field activities. The three currently authorized contracting activities should function as a middle level of contracting expertise. Subject to the limits of their purchasing authority, local contracting offices should be authorized to procure ADPE up to $10,000 on the open market and up to $50,000 from GSA schedules. The $50,000 threshold coincides with the limit designated by the Brooks Committee as one which cannot be exceeded without

their approval if the action is sole source. The $10,000 limit matches the separation between small purchase procedures and normal contracting methods. This delegation of authority would increase the responsiveness of the purchasing system by reducing the backlog at the three currently authorized contracting offices. Schedule contracts are relatively simple to use and do not require great expertise by the contracting office. Small purchase procedures also are relatively simple.

Delegation of these limits would reduce the backlogs at NRCO Washington, NRCO Long Beach, and NSC Pearl Harbor. They would then be able to concentrate on the more complex, large dollar value items. In calendar year 1976 NRCO Washington placed 97 orders totaling $1,386,487 against GSA schedules. Of these 97 orders, 68 (70%) were for under $10,000. In Fiscal Years 1977 and 1978 Washington negotiated 209 and 210 open market contracts respectively. Out of these totals 193 (92%) in 1977 and 187 (89%) in 1978 were under $50,000. Although the figures are not for the exact limits recommended, they illustrate the large volume of low dollar orders.

Additionally, a small staff of technical personnel should be assigned to NRCO's Long Beach and Washington and to NSC Pearl Harbor. This technical branch would assist requesting activities in developing their specifications and in evaluating vendors. The ADP branches at these

activities would be modeled after ADPSO with the size of the technical branch based upon the volume of requisitions which each activity handles.

B. RELOCATE ADPSO WITHIN THE NAVMAT ORGANIZATION

ADPSO should be moved from NAVDAC and placed under NAVSUP. NAVDAC should be responsible for the approval of ADPE requests; however, they should not be involved with the actual acquisition of the equipment. Having ADPSO within the same chain of command as the other activities which purchase ADPE will help maintain consistency among the contracting shops. A second alternative would be to place all ADPE contracting offices under NAVDAC; however, this would require the formation of an entirely new purchasing organization, unless ADPSO accomplished all ADPE acquisitions. It is more logical to relocate ADPSO and utilize the current NAVSUP field purchasing organization to do the less complex procurements.

C. REQUEST A BLANKET DPA FROM GSA

ASN(FM) in conjunction with the other services should request a blanket DPA from GSA for all ADPE acquisitions. The requirement that activities receive a DPA for each individual acquisition serves no useful purpose, especially in view of the low volume of requests which are denied. This procedure only lengthens the acquisition process and hinders workload planning by the contracting offices. The

recent increase in the DPA threshold to $300,000 is an indication that GSA might be responsive to such a request.

D. ELIMINATE THE REQUIRED USE OF GSA'S CENTRALIZED BML

ASN(FM) should forward a request to GSA to eliminate the required use of the centralized BML for all acquisitions over $50,000. The low response rate to the synopses forwarded to the vendors on the BML indicates that this procedure is an administrative burden and is required only to maintain the appearance of encouraging competition. A more effective and less costly method would be to require the publication of the requirement in the CBD, as is done now, and to supplement this through the use of a locally maintained mailing list. This local mailing list could be composed of local vendors, and it would not have the large number of vendors that the GSA list does. Additionally, it would be much easier to keep current.

E. PERMIT ACTIVITIES TO OBTAIN "AFTER THE FACT" APPROVAL OF ACQUISITIONS

There is a definite need to maintain centralized control over ADPE. However, this control should be exercised over the approval cycle rather than the procurement cycle. NAVDAC is the organization which is tasked with this responsibility. The process of control should not be structured so that it forces activities to circumvent the system to meet their requirements. A threshold should be designated

below which prior approval is not required to procure ADPE. After acquisition of the equipment a copy of the order or contract together with a brief summary of the justification would be forwarded to NAVDAC for review. If the acquisition was not justified, then appropriate administrative action would be taken against the local commander. ADPE should be treated as just another tool to be used in accomplishing a mission, and local commands must be given the authority to determine what tools are necessary.

This delegation of "after the fact" approval authority would only apply to equipment for established systems. Establishing a new ADP system would still require high level approval. The threshold could be established at $100,000. This would greatly simplify the procedures involved in gaining approval procurement of ADPE.

F. REDEFINE COMPETITION IN ADPE PROCUREMENTS TO COINCIDE WITH NORMAL PROCUREMENT PRACTICE

The classification of "brand name or equal" and "specific make and model" procurements as sole source is overly restrictive. With the existence of third party vendors in the plug compatible market, this restriction serves no purpose. The existence of adequate price competition should be the determining factor as to whether an award is competitive. This coincides with the definition of competition contained in FPR. DON should work with the House Appropriations Committee (which has already expressed this view)

in an attempt to influence GSA and the Brooks Committee to redefine competition.

G. ELIMINATION OF THE INTERIM PROCUREMENT CLASSIFICATION

Granting of interim procurement authority for a period of two years is counterproductive. Requiring replacement of the equipment within such a short period interrupts daily operations and results in additional costs. If procurements were evaluated on the basis of lowest total costs including conversion costs, then the need for interim procurements would be greatly reduced.

Changes must be made to the Navy's method of acquiring ADPE before the capability of the entire service is degraded. Prolonged operations under the current rules will result in continued use of outdated, inefficient equipment and possibly the breakdown of the entire ADPE acquisition system. Many changes cannot be made without the concurrence of GSA and Congress. However, as has been pointed out, there are many improvements which can be made unilaterally by the Navy. ADPE must be viewed as simply another tool available to activities for use in meeting their missions. GSA, NAVDAC, and NAVSUP must not lose sight of the fact that, although control over ADPE is necessary, it should not become the dominant force in shaping rules and regulations. Assisting field activities in accomplishing their missions must be the primary goal of these agencies. The regulations must

be structured so this goal is not subordinated to the goal of ADPE control. As these recommendations are implemented, continual evaluation must be made to monitor the effects of the changes and to ensure that other unanticipated problems do not arise.

EXHIBIT 1

NAVY ADP APPROVAL AUTHORITIES

A. Level 1

Assistant Secretary of the Navy (Financial Management)

B. Level 2

Chief of Naval Operations*
Director, DON ADP Management*
Commandant of the Marine Corps

*CNO and Director, DON ADPM have delegated certain approval responsibilities and authority to the Commander, NAVDAC and, for Exclusively Scientific Actions, to the Chief of Naval Material and the Chief of Naval Research, respectively.

C. Level 3

Deputy Comptroller of the Navy
Director of Civilian Personnel
Chief of Naval Research
Chief of Naval Material
Chief, Bureau of Medicine and Surgery
Commander, Navy Military Personnel Command
Commander in Chief, U. S. Atlantic Fleet
Commander in Chief, U. S. Pacific Fleet
Commander in Chief, U. S. Naval Forces, Europe

EXHIBIT 2

NAVY ADP APPROVAL THRESHOLDS

TYPE APPROVAL	APPROVAL LEVEL		
	Level 1	Level 2	Level 3
A. General Purpose ADP Equipment (Sole Source)			
Exceeds $500,000 purchase	X		
Up to $500,000 purchase		X	
Up to $100,000 purchase (non-CPU)			X
B. General Purpose ADP Equipment (Competitive)			
Exceeds $1M purchase	X		
Up to $1M purchase		X	
Up to $200,000 purchase (non-CPU)			X
Up to $100,000 purchase (including CPU)			X

EXHIBIT 3

AUTOMATED DATA SYSTEMS DEVELOPMENT
APPROVAL THRESHOLDS

TYPE APPROVAL	APPROVAL LEVEL		
	Level 1	Level 2	Level 3
Exceeds $1M for in-house development through prototype installation	X		
Up to $1M for in-house development through prototype installation		X	
Up to $500,000 for in-house development through prototype installation			X

EXHIBIT 4

COMMANDS DELEGATED APPROVAL AUTHORITY BY CNO

Commander in Chief, U.S. Pacific Fleet
Commander in Chief, U.S. Atlantic Fleet
Commander in Chief, U.S. Naval Forces, Europe
Commander in Chief, Pacific
Commander in Chief, Atlantic
Commander, Military Sealift Command
Commander, Navy Military Personnel Command
Commander, Naval Security Group Command
Commander, Naval Telecommunications Command
Commander, Naval Intelligence Command
Chief of Naval Material
Chief of Bureau of Medicine and Surgery
Chief of Naval Education and Training
Chief of Naval Reserve
Oceanographer of the Navy

APPENDIX A

GLOSSARY

ADPE	Automatic data processing equipment
ADPSO	Automatic Data Processing Selection Office
ADS Plan	Automated data system development plan
ADTS	Automated Data and Telecommunications Service
APR	Agency procurement request
ASN(FM)	Assistant Secretary of the Navy for Financial Management
Brooks Bill	Public Law 89-306
Brooks Committee	House Committee on Government Operations
CAP	Computer acquisition program
CBD	Commerce Business Daily
CNO	Chief of Naval Operations
CPU	Central processing unit
DAR	Defense Acquisition Regulations
DIR DON ADPM	Director, Department of the Navy, Automatic Data Processing Management
DOD	Department of Defense
DON	Department of the Navy
DPA	Delegation of procurement authority
EDP	Electronic data processing
FIPS	Federal information processing standards
FPMR	Federal Property Management Regulations
FPR	Federal Procurement Regulations

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FSC	Federal Supply Classification
FSS	Federal Supply Service
FY	Fiscal Year
GSA	General Services Administration
HAC	House Appropriations Committee
MOL	Maximum order limitation
NASA	National Aeronautical and Space Administration
NAVDAC	Naval Data Automation Command
NAVMAT	Naval Material Command
NAVSUP	Naval Supply Systems Command
NBS	National Bureau of Standards
NRCO	Navy Regional Contracting Office
NSC	Naval Supply Center
OMB	Office of Management and Budget
RDT&E	Research, Development, Test, and Evaluation
SPO	Senior policy official
SSA	Source selection authority
SSAC	Source selection advisory council
SSEB	Source selection evaluation board

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