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The Government Accounting Office (GAO) was created by the Budgeting and Accounting Act of 1921 as a nonpolitical, independent arm of the Congress. GAO has become increasingly involved in the Federal automatic data processing (ADP) procurement process. Under its audit function, GAO has reviewed individual ADP procurements and general policies and procedures to test their efficiency and economy. An active role was taken in the consideration of the Brooks Act which authorized and directed the General Services Administration (GSA) to coordinate and provide for the economic and efficient purchase of ADP equipment by Federal agencies. Centralization of the ADP management and procurement authority in the GSA under the Brooks Act resulted in significant savings and improvements. Full implementation of the Brooks Act has been hampered because the Office of Management and Budget has neither approved nor disapproved GSA's plan for full capitalization of the ADP fund and has placed limitations on ADP expenditures. Much of the ADP equipment is purchased by procuring agencies from schedule contracts. Many of these purchases have been made without seeking competition or determination of lowest overall cost. The need for standardization in ADP management is stressed and bid protest procedures are reviewed. (RRS)

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GAO AND FEDERAL GOVERNMENT ADP PROCUREMENT  
by  
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I. BACKGROUND

A. The genesis of the General Accounting Office lies in Article I of the United States Constitution which provides that:

No money shall be drawn from the Treasury  
but in consequence of appropriations made by  
law \* \* \*

The design of this provision as explained by Alexander Hamilton, was "to secure these important ends-- that the purpose, the limit, and the fund of every expenditure should be ascertained by a previous law."

Under the Constitution, then, control over the public purse was placed in the hands of the Congress.

After a history of fiscal responsibility lodged in the executive branch, the Congress enacted the Budget and Accounting Act of 1921. This Act created the General Accounting Office as a nonpolitical, independent arm of the Congress headed by a Comptroller General of the United States, who is appointed for a term of 15 years by the

President with the advice and consent of the Senate. He is not eligible for reappointment and can be removed from office only by impeachment or by joint resolution of the Congress for specified cause.

When the General Accounting Office was created in 1921, two broad separate purposes were subserved. The first was to achieve independence of the executive branch with respect to the function of administering oversight of the expenditure of public funds and the settlement of public accounts.

The second broad purpose was to provide the Congress an arm with which to probe the manner in which executive branch financial responsibilities were being discharged-- a means for developing information needed in the legislative process. The Act requires the Comptroller General to investigate all matters relating to the receipt, disbursement, and application of public funds and to make reports to the Congress, containing recommendations for legislation and recommendations looking to greater economy or efficiency in public expenditures.

Over the years, many statutes have been enacted providing for GAO to study the efficiency, effectiveness, and economy of Government activities.

B. We in the GAO have long recognized that the Congress, if it is to legislate intelligently regarding complex programs calling for large expenditures, must have available to it meaningful information on administrative performance under existing laws and sound analyses of executive branch proposals.

In this era of \$400 billion annual budgets the Congress confronts information needs of unprecedented proportions in carrying out its responsibilities. The Members of the Congress recognize this need for more information and increased capability to make independent analyses not only of new executive branch proposals but also the effectiveness of programs, that is, whether the objectives sought by Congress are or are not being achieved.

C. During the past decade we have experienced a tremendous growth in practically all major Government functions. Between 1950 and 1970 expenditures by the Federal Government increased almost fourfold. From 1960 to 1976, the budget quadrupled from \$98 billion to \$395 billion. Since we are here concerned with the field of automatic data processing, some relevant numbers may be of interest.

It is predicted that, in the United States alone over 566,200 computers will be in operation by 1979, assuming

an annual growth rate of 27.98 percent during the next 5 years. At present our country's total capital investment in computers is approximately \$38 billion. An additional \$22.8 billion is spent to install, operate, and maintain the 209,800 computers that are calculated to be in use. By 1979, these costs are expected to exceed \$28.8 billion.

The growth in the Government's use of the computer is expected to keep pace with industry trends. Seventeen years ago the Government reported an inventory of only 121 computers. Today, that number is over 7,800. By 1979, it is expected that over 15,000 computers will be in use throughout the Government. The Government now spends over \$10 billion annually to install, operate, and maintain these devices. By 1979, these costs are expected to exceed \$15 billion.

## II. INTRODUCTION

GAO is becoming increasingly involved in the Federal ADP procurement process. In the last few years, we have increased the scope of our audit activities in an attempt to improve procurement and management of the Government's ADP resources. In addition, our Office has received a steadily increasing number of bid protests involving ADP procurements. Today, I hope to summarize our role in the ADP procurement process by discussing a number of recent

significant audit reports, a number in process, and bid protest decisions.

### III. AUDIT ACTIVITIES

A. Under our audit role, we have reviewed individual ADP procurements and general policies and procedures to test their efficiency and economy. In so doing, we have attempted to offer constructive criticism of the present process in the hope of improving the system.

From an early date GAO has been involved in the ADP procurement process. GAO took an active role in the consideration of the Brooks Act, Public Law 89-306, which authorized and directed GSA to coordinate and provide for the economic and efficient purchase of ADP equipment by Federal agencies. Prior to passage of the Brooks Act, GAO had issued about 100 audit reports revealing deficiencies in the acquisition and use of ADP. These reports in this area provided some impetus for enactment of the legislation.

B. Our report entitled "Further Actions Needed to Centralize Procurement of Automatic Data Processing Equipment to Comply with Objectives of Public Law 89-306 (Brooks Act)" B-115369, October 1, 1975, stated that centralization of the ADPE management and procurement authority

in the General Services Administration pursuant to the Brooks Act has resulted in significant savings and improvements. However, the report stated that additional savings could be realized by full implementation of the Brooks Act as intended by the Congress. The legislative history of the Act clearly indicates an intention that GSA eventually become the single purchaser of ADPE for the Government. GSA would delegate its procurement authority to the using agencies only in limited cases. Also, the revolving fund specially created by the Brooks Act to facilitate the financing of the acquisition of Government ADPE should eventually be fully utilized for Government ADPE purchases and leases and operation of Federal computer centers. Neither of these objectives has been achieved. Over 80 percent of the 1974 ADPE procurements were made by the ADP using agencies rather than by GSA. Only 1 percent of the procurement utilized the revolving fund. GAO found that the full implementation of the original intent of the Brooks Act had been hampered because the Office of Management and Budget: (1) neither approved nor disapproved GSA's plans for full capitalization of the ADP fund; (2) denied GSA's requests for resources to carry out its functions; and (3) placed limitations on capital expenditures out of the ADP revolving fund. We found

that significant savings could be realized if GSA were allowed to achieve this "single purchaser" status. ADPE acquisitions could then be more efficient and economical since GSA would have a greater ability to make volume purchases (and take advantage of the accompanying volume discounts), and could better utilize the information it has collected regarding the Government's ADP resources, e.g., by having the knowledge and ability to make "opportunity lease-purchase" buys of ADPE.

The House Government Operations Committee, in its recently issued report on the administration of the Brooks Act (House Report 94-1746, October 1, 1976) agreed with our position that the revolving fund should be more fully capitalized to allow for opportunity buys, multiyear leasing and to support Government data processing centers.

C. Much of the ADPE is purchased by procuring agencies from schedule contracts. In the ordinary case, any supplier who wants to can be listed on an ADPE schedule contract. In our audit report, "More Competition Needed in the Federal Procurement of ADPE," B-115369, May 7, 1974, it was found that, in many cases, agencies were placing orders or renewing leases or purchasing installed leased equipment from schedule contracts without seeking competition or making an adequate determination of lowest



overall cost. These actions violated GSA's Federal Property Management Regulations (FPMR) 101-32. On the other hand, in those cases where procuring agencies did make an effort to obtain competition significant cost savings were achieved.

The Federal Government is acquiring minicomputers at an accelerated pace. As discussed in "Uses of Minicomputers in the Federal Government: Trends, Benefits & Problems," B-115369, April 22, 1976, the use of minicomputers by Federal agencies can enhance productivity. User agencies and the computer industry have complained of administrative difficulties surrounding the acquisition of minicomputers and other relatively low cost ADP items. GAO recommended that Government-wide procurement requirements for minicomputers having a low aggregate dollar value be simplified.

The use of non-mandatory schedule contracts may be one way of solving these problems, so long as applicable procurement rules and regulations are complied with. We understand that this solution has been proposed by GSA. In its October 1 report, the House Government Operations Committee has recommended that new procedures be established whereby user agencies could procure ADP items below \$250,000 (except central processing units) without the need to obtain a delegation of procurement authority from GSA.

D. In a number of audit reports, we have stressed the need for standardization in ADP management to improve

on the economy and efficiency of Government ADP operations. This is related to congressional concern expressed in 40 U.S.C. § 759(f)(2) (1970), which requires the Secretary of Commerce to undertake studies in order to make appropriate recommendations relating to the establishment of uniform Federal ADP standards. In Executive Order 11717, Commerce was also given the power to promulgate ADP standards.

1. For example, in a report titled, "Emphasis Needed on Government's Efforts to Standardize Data Elements and Codes for Computer Systems," B-115369, May 16, 1974, we found that significant benefits and improvements in the use of the Government's ADP resources could accrue from standardizing data elements and codes. This would facilitate information exchanges in machine readable form among various ADP systems. Data elements are information units having a unique meaning based on a natural or assigned relationship. A data code may be the number, letter, symbol, or any combination of these used to represent a data element or item. For example, the code for the data element "Alabama" may be "AL." Our review revealed that the National Bureau of Standards has assigned a high priority to data and code standardization which we believe is a step in the right direction. NBS is still considering this standardization problem. Necessarily, the cooperation of other agencies is required to effectuate any such standardization.

2. In a report titled "Improvements Needed in Documenting Computer Systems," B-115369, October 8, 1974, we found there was a lack of Government-wide policies, guidance or standards for the documentation of computer systems. "Documentation" is the information recorded explaining the pertinent aspects of an ADP system--including its purposes, methods, logic, relationships, capabilities and limitations. We found that there was a need for standard procedures to allow for maximum efficient management and use of the Government ADP resources. We again recognized that the National Bureau of Standards was in the process of formulating and issuing standards for the documentation of various aspects of computer systems. The standards, once compiled, should provide the guidance needed by using agencies not only to document their ADP systems but also to do so in a manner that will be readily usable by other Government organizations.

During the hearings before the House Government Operations Committee regarding the administration of the Brooks Act, GAO again voiced our concern over the lack of progress being made by the National Bureau of Standards in the development of ADP standards. In its report on the Brooks Act's administration, the Committee indicated that such standards would allow for fuller and more effective

competition and greater savings. The Committee recommended that the National Bureau of Standards "must develop necessary hardware and software standards." The Committee also recommended that OMB establish procedures to insure that user agencies would comply with the ADP standards set.

Recently we issued three reports concerning computer security in Federal Government ADP installations. In "Improvements Needed In Managing Automated Decisionmaking By Computers Throughout The Federal Government," B-115369, April 23, 1976, we identified a number of instances of incorrect unreviewed computer actions and decisions caused by software and data problems. We also found there are no Federal-wide policy, guidance or other instructions on how computers issuing unreviewed actions should be managed by Federal agencies. Also, there is little checking or monitoring of computer output by user agencies. Moreover, internal audit reviews of computer actions are only made sporadically, if at all. In the current imperfect environment the chances of continuing bad decisions by computers and resultant unnecessary costs are great. Consequently, we recommended that appropriate guidelines on reviewing computer actions be promulgated.

In "Computer Related Crimes In Federal Programs," B-115369, April 27, 1976, we identified a number of computer crimes committed by Federal ADP systems users.

Contrary to widespread belief, most of these acts were committed by persons with limited technical knowledge of computers, i.e., users of the ADP system rather than programmers, operators, or analysts. We recommended that the reviewed Federal agencies take various steps to improve the internal security of their ADP systems. For example, the agencies should establish for their ADP systems (1) an organizational plan segregating the duties of individuals to minimize the opportunity for misuse or misappropriation of the system's resources, (2) adequate system authorization and record procedures, and (3) an effective internal review system.

In the third report titled "Managers Need To Provide Better Protection For Federal Automatic Data Processing Facilities," B-115369, May 10, 1976, we noted catastrophic losses had occurred to Government sponsored ADP installations. Our review also indicated that the physical security of many installations to protect against such losses was inadequate. E. Where we have found it warranted we have recommended the cancellation of ADP procurements after a complete audit review. For example, we recommended cancellation of a GSA procurement to satisfy the ADP needs of the Department of Agriculture in "Improved Planning-- A Must Before a Department-wide Automatic Data Processing

System is acquired for the Department of Agriculture," B-115369, June 3, 1975. In that case, we found that Agriculture had not adequately analyzed its data processing or communications requirements for the computer system, even though proposals were received by November 29, 1974, and award of the contract was targeted for mid-June 1975. Agriculture only made an analysis of the ADP needs of one of its major subagencies prior to issuing the RFP. Agriculture had no basis for determining the optimum ADP system design and location, since it did not make the communications study required by GSA's regulations. In addition, Agriculture did not adequately consider security and privacy requirements to assure that personal or other sensitive data on the system would be reasonably protected from unauthorized access. Finally, we found that Agriculture did not make the economic studies required by Government regulations before it issued the RFP to assure the proposed procurement would achieve the highest possible degree of economy and effectiveness. There was no detailed comparative cost data for the existing and proposed ADP systems and there was no analysis of the benefits and costs of the proposed system design or consideration of possible alternatives to satisfy Agriculture's ADP needs. It was improper to have the "after the fact" justifications for the procurement, which were made here after the proposals had already

been received, since an informed judgment as to the most viable and economic alternative for this system should have been made prior to the RFP's issuance.

After the issuance of our report, Agriculture canceled this procurement in October 1975.

Also, in December 1975, after GAO recommended that the Air Force Logistics Command Advanced Logistics System (ALS), a very large complex computer system, be terminated, the House and Senate Committees on Appropriations instructed the Air Force to terminate ALS. The termination of this effort was made after 9 years and about \$250 million in expenditures because software, computer equipment and system design problems prevented the Air Force from achieving the system's original design objectives, notwithstanding numerous modifications to the original contract. See "Problems in Developing the Advanced Logistics Systems," B-163074, June 17, 1976.

#### IV. BID PROTESTS

A. In the past few years we have received an increasing number of bid protests against procurements of ADP equipment or services. As you probably know, disappointed bidders can obtain fair unbiased review of a procurement by filing a bid protest in the GAO. A primary role of our Office in this regard is to protect the integrity of competitive bid system. We have had a wide array of interesting issues presented to us in bid protests involving ADP procurements, which I would now like to discuss as illustrative examples of another role we play

in the procurement process. I have brought along copies of a pamphlet "Bid Protests At GAO: A Descriptive Guide" which has just come off the press.

B. In 51 Comp. Gen. 509 (1972); 51 Comp. Gen. 613 (1972), IBM protested a number of GSA procurements in which GSA declined to consider IBM's proposals which contained a provision disclaiming implied warranties of merchant's ability and fitness for a particular purpose and excluding IBM from liability to the Government for consequential damages. We denied IBM's protest since we regarded GSA's position as a matter of procurement policy and since there was no statutory or regulatory provision prohibiting such an arrangement. While we had reservations regarding the policy, we concluded that it was within GSA's discretion to adopt and therefore we could not find the awards to be illegal. However, we recommended that GSA restudy its position particularly since lower prices could result if the contractor's possible liability were eliminated.

1. GSA subsequently modified its position. Its ADPE contracts now exclude any implied warranty of fitness for a particular purpose and the contractor is not liable for consequential damages. However, the implied warranty of merchantability has been retained.

2. Recently in Kenneth R. Bland, 54 Comp. Gen. 930 (1975), we recognized that in a procurement of ADPE under \$50,000 (where procuring agencies ordinarily need not receive a delegation of procurement authority from GSA)



The Federal Power Commission could formulate its own policy with regard to the type and extent of warranty provisions included in the contract, in the absence of other standard clauses in the FPMR and FPR applicable to ADPE procurements.

C. In Comdisco, Inc., 54 Comp. Gen. 196 (1974), involving the Army's ALPHA program, the Army utilized a long-term contractual arrangement with IBM to acquire additional ADP systems. The Army entered into modifications of this contract to purchase several additional systems at a reduced price. These modifications were protested as being in violation of the Brooks Act and implementing regulations since the Army did not receive prior authorization from GSA for the acquisition of the ADPE. GSA agreed with the protester and indicated that it did not authorize the procurement. We concluded that this procurement was unauthorized because the Army did not obtain the prior approval of GSA pursuant to FPMR 101-32. We found these provisions to be applicable because the Army was acquiring ADPE albeit through the guise of an existing schedule contract. Although we did not feel justified in taking any action with respect to installed systems, we concluded that no additional systems for the ALPHA program should be acquired without a delegation of procurement authority for these procurements from GSA.

Subsequently, IBM and the Government modified the arrangement to significantly reduce the cost to the Government of the additional systems already installed by IBM. The remaining three ADP systems to be procured for the ALPHA program were to be bought on the open market.

D. In PRC Computer Center, Inc., 55 Comp. Gen. 60 (1975), a number of interesting issues were involved which entailed an in-depth review of the entire procurement. In so doing, we utilized the technical assistance of ADP specialists at GAO as we have done in a number of bid protest cases. This procurement by the Federal Energy Administration called for a facilities management services contract to cover FEA's ADP needs for an 18-month period.

1. One of the major issues raised was FEA's compliance with the Brooks Act and implementing regulations. It was contended that FEA had not received a proper delegation of procurement authority from GSA. We recognized that the facilities management "services" contracts, especially where there is an option to purchase the installed equipment, could well be used as a ploy to avoid the Brooks Act's coverage. That is, a much greater scope of review and justification and GSA involvement is ordinarily necessary to receive a delegation of authority

for the purchase of ADPE (as opposed to services). However, while we recognized that this type of services contract could be used as a "loophole" in the regulations, we could not object to the FEA procurement because FEA was entitled to rely upon the GSA and OMB authorizations to proceed with the procurement which were only given after complete reviews.

GSA issued Amendment E-173 to its regulations governing procurements of ADP services, which would have the effect of increasing the GSA review role in agency procurements of ADP services, particularly where the Government will or may acquire title to ADP equipment through a "service" contract.

2. Our review of the protests found a number of procurement deficiencies by FEA, e.g., the existence of a predetermined cut-off point for establishing the competitive range, and the failure to indicate in the RFP the relative weight of cost in the evaluation scheme. Although these deficiencies were not in accordance with sound procurement practice, they were not prejudicial in this case. More seriously, we found failures to comply with RFP requirements in the contractor's proposal relating to the security of the FEA ADP system. In our review in this regard we utilized GAO ADP specialists and an independent consultant who specializes in computer security. Although we found that the contract

awarded generally complied with the solicitation requirements relating to the security of the computer system from access by persons not authorized to utilize the FEA computer, we did find that the contractor's proposal failed to comply to a solicitation requirement relating to the internal security of the computer system that the system provide protection from read access by FEA users to other FEA users' programs and codes and the computer's operating system located in its main memory. However, in view of several countervailing factors, e.g., lack of any indication of prejudice to the other offerors, prohibitive procurement costs, lack of further FEA funding, etc., we were compelled to conclude that the award should not be disturbed.

In December 1975, a former contractor employee successfully removed system software from the FEA system before being apprehended and subsequently convicted of the theft.

E. We also made good use of our technical experts in resolving the difficult technical issues involved in Sperry Univac, B-183182, November 6, 1975. In this case, Sperry Univac protested the rejection of its technical proposal for a large-scale Army scientific computer system. Sperry Univac had been declared technically unacceptable after approximately 3 months of intensive negotiations on the basis that it could not comply with

the RFP benchmark requirements, specifically a requirement for the use of ANS FORTRAN statements in the benchmark programs. The Army insisted that its requirements for ANS FORTRAN were necessary: (1) to preserve the concept of a uniform benchmark, (2) to promote the interchangeability of the resulting programs for use on a variety of ADP systems; and (3) to avoid the adverse impact which a system dependent on non-ANS FORTRAN might have on Army operations. Sperry Univac maintained that the Army's requirement was unduly restrictive of competition. Moreover, Univac argued that the other two offerors-- Control Data Corporation (CDC) and IBM--made changes similar to those made by Sperry Univac but were considered by the Army to have submitted technically acceptable proposals.

GAO's review involved a comparison by GAO ADP technical experts of the benchmark programs submitted by Sperry Univac, CDC, and IBM with those which were provided to the offerors in order to determine whether any changes were made. The benchmark provided to the offerors consisted of ten programs containing, by very conservative estimate, approximately 50,000 statements. From our review, we conclude that (1) only Sperry Univac had made changes to ANS FORTRAN statements in violation of the mandatory RFP requirements; (2) the requirement

that the benchmark be performed within the stated guidelines was justified since the benchmark guidelines legitimately reflected the agency's needs; and (3) that IBM had not violated the mandatory RFP requirements. Consequently, we denied the protest and upheld the award which had been made to IBM.

A more recent case, International Computerpring Corporation, 55 Comp. Gen. 1043 (1976), involved the Department of Commerce's procurement for the reduction of patent data to computer tapes. The invitation for bids contained a requirement that a pilot patent production demonstration be successfully accomplished by the prospective contractor to establish its technical ability to perform the work in a responsible manner. The low bidder's bid of \$9,947,224 was much lower than the only other responsive bid of \$17,829,317. However, despite repeated efforts, the low bidder was never able to accomplish successfully the demonstration in accordance with the IFB requirements. Nevertheless, Commerce proposed an award to the low bidder, since Commerce was convinced by the bidder's efforts to pass the pilot demonstration that the firm possessed the technical capability to perform the contract. The proposed award was protested by the high bidder to our Office. Ordinarily, absent fraud, GAO will not review protests against a contracting officer's affirmative determination of a bidder's

responsibility (i.e., its ability to perform a contract). However, we will consider such protests where the question of responsibility revolves around a bidder's meeting or failing to meet certain specific and objective responsibility criteria expressed in the solicitation. We considered the IFB demonstration requirement to be such an objective responsibility criteria. To waive such a requirement would be prejudicial to other bidders who bid under the IFB as issued or to prospective bidders who failed to bid because of doubts as to their ability to comply with the demonstration requirements. Consequently, we recommended that Commerce resolicit this requirement based upon its actual minimum needs. This requirement is the subject of various other protests pending in our Office at this time.

#### V. CONCLUSION

It can be seen from the foregoing discussion that we at GAO are significantly involved in the ADP procurement process in a variety of ways. Since one of GAO's responsibilities is to make studies leading to the establishment or modification of Government-wide policies regarding computers, we are continuing to address:

- (1) the application of technology to Government work,
- (2) efficiency and economy in acquiring and using computer systems,

(3) the proper use of results generated by  
computer systems, and

(4) social implications of the computer.

Plans are also in process to study the impact of advanced data entry techniques on Federal computer operations. Considerable work is being conducted in the electronic fund transfer area, with its attendant privacy considerations.

We hope we will continue to make contributions to increasing the efficiency, economy, and competitive practices in ADP procurements.