



096393

COMPTROLLER GENERAL OF THE UNITED STATES

WASHINGTON, D.C. 20548

3.52.26

73-0444

B-115369

APR 25 1973



LM096393

BEST DOCUMENT AVAILABLE

The Honorable William Proxmire
C) Vice Chairman, Joint Economic Committee
R Congress of the United States

TNT 00100

Dear Mr. Vice Chairman:

This is in response to your letter, dated October 5, 1971, asking us for an independent estimate of total annual costs associated with Government owned and used automatic data processing (ADP) equipment. The only Government-wide report published annually by the General Services Administration (GSA), which regularly identifies such a cost figure was known to be incomplete, and a more inclusive estimate of "between \$4 and \$6 billion" provided in earlier hearings was viewed as too rough. After an extensive study, we have concluded that a more comprehensive or precise estimate is impossible at this time without an impractical expenditure of effort due to

- the sizable ADP operations financed by the Government but not required to be reported to GSA;
- differences among Federal agencies in recording, summarizing, and reporting ADP cost data; and
- most importantly, the lack of clear agreement among professionals and managers concerning the proper accounting treatment of ADP cost data.

The problems which we found in trying to develop a more comprehensive, or better, estimate of total annual costs associated with Government owned and used ADP equipment are discussed below.

¹We were also asked to study the use of ADP equipment in the Federal Government and the management of ADP equipment in Government contractor plants, and we are issuing separate reports on these.

~~701503~~ 096393

ANNUAL COST DATA REPORTED TO GSA

GSA, on behalf of the Office of Management and Budget (OMB), maintains and operates a reporting system containing ~~information on the inventory of ADP equipment, utilization statistics, manpower and cost data, and historical data on equipment acquisition.~~ 27 GSA publishes annual reports on the Government's inventory of ADP equipment and related utilization, manpower, and expenditure data and distributes them to interested parties. In addition, GSA responds to periodic requests for specific data from various parties--mainly within the Government--by drawing data from this computerized data base.

GSA's reporting system is not complete, however, because of certain exemptions from OMB's reporting requirements. For the following categories of ADP equipment, only inventory on hand need be reported--annual expenditure data is not required.

- Control systems equipment which is an integral part of a total facility or larger complex of equipment and which has the primary purpose of controlling, monitoring, analyzing, or measuring a process or other equipment.
- Classified systems equipment, the physical location of which is also classified.

OMB does not require any reporting, not even inventory data, for the following categories of ADP equipment.

- All analog computers.¹
- All computers which are both integral to a combat weapons or space system and built or modified to special Government design.
- Computers financed by Federal grant-in-aid programs.
- Most contractor owned or leased ADP equipment, the costs of which are charged to Government contracts.

¹An analog computer contains many devices for performing mathematical operations simultaneously, has no memory as such, and arrives at the solution through the manner in which devices are physically interconnected. It is usually designed for solving differential equations and is generally not suitable for data processing or business accounting applications.

The most important point considered by OMB in deciding on these exclusions from its reporting requirements was whether these computer systems had value to other users-- could be reused and/or shared by more than one user. Many computers in these categories were not considered to have potential for widespread sharing and/or reuse. Also, in the case of contractors' and grantees' computers, certain philosophical arguments were raised against the Government's becoming involved in contractor and grantee affairs.

Details of the inventory and annual cost data reported to GSA over a 13-year period are presented in enclosures II and III, respectively.

At 21 sites we analyzed the fiscal year 1971 costs reported under the current reporting system for 6 Federal agencies. There were numerous and frequently significant variances in reported costs from what, we believed, should have been reported. The Army Audit Agency (AAA) made a similar review at 19 Army installations and also identified significant variances in these costs. The results of these analyses for the seven Federal agencies are summarized below.

	<u>Sites visited</u>	<u>Reported data</u> (000 omitted)	<u>Net variance (note a)</u> (more (+) or less (-))	<u>Percent of net variance to reported data</u>
Atomic Energy Commission	3	\$ 35,657	\$-7,828	-21.9
Department of Agriculture	1	700	+38	+5.4
Department of the Air Force	5	52,256	+2,505	+4.8
Department of the Navy	4	43,004	-1,379	-3.2
National Aeronau- tics and Space Administration	5	78,583	+6,173	+7.9
Department of the Treasury	3	31,430	+1,656	+5.3
Army	19	118,378	+14,759	+12.5

^aThere were significant downward and upward variances.

Because the sites selected by us were not scientifically chosen, we did not adjust the total cost figure reported by GSA for fiscal year 1971. However, our analysis did show that the cost data reported by GSA is clearly questionable.

The underlying causes of the variances were:

- Differences among agencies in management, accounting, and budgetary structures for ADP operations.
- Differences among agencies in interpreting the generalized reporting requirements.
- Use of budgeted data or cost estimates instead of actual data.
- Human errors.

Federal managers have not reached complete agreement on defining ADP equipment and activities. Thus the data reported by the agencies is not comparable. Agency budget and accounting records usually do not specifically identify the ADP expenditures required to be reported to GSA. Moreover, at the present time, Federal managers do not agree on the principles and standards that should be followed in accounting for ADP expenditures. As a result, agencies do not always rely on formal accounting records for reporting expenditure data; in many instances the data is obtained from various informal records, which increases the likelihood of inconsistencies in reported data.

OMB's reporting requirements, as supplemented by GSA instructions, require Federal agencies to report their annual ADP expenditures in six basic categories: capital costs, personnel, rentals, contract services, support, and other. The reporting requirements for each category are stated in rather general terms, which increases the likelihood that agencies will differ in their interpretation of the data that is to be reported.

Two examples of differences in interpretation which account for many adjustments are:

- Some agencies included the cost of those personnel who were assigned to ADP-related functions on a full-time basis. Some agencies included only those personnel who were full time and were organizationally assigned to the data processing department and thus excluded, for example, full- and part-time keypunch

operators assigned to other departments. In our study we included the cost of only those who worked in ADP-related functions 25 percent or more of the time regardless of organizational alignments.

--Some agencies reported the cost of fringe benefits associated with personnel costs, but some did not. We included fringe benefits in our estimates.

AAA's recent review of ADP cost data reported by 19 Army installations showed similar results. According to AAA's report, misinterpretation of reporting guidance accounted for nearly 50 percent of the variance it identified.

In addition to finding differences in interpretations of reporting requirements, we found that some units reported estimated or budgeted cost data, because actual cost information was not yet available at the time reports were required to be submitted. The estimated or budget data that was used did not closely correlate with actual costs incurred.

We also detected some human errors in reporting cost data under OMB requirements. This accounted for only a few of the variances.

COMPUTERS ON WHICH ONLY INVENTORY DATA IS REPORTED TO GSA

Although inventory data exists, annual cost data for computers exempt from OMB's central cost reporting requirements is not readily identifiable as ADP costs in agencies' accounting records and reports.

We estimated that the total fiscal year 1971 operating and capital expenditures for the 2,545 computers in this category were approximately \$412 million. This estimate was developed in coordination with the Department of Defense (DOD), the National Aeronautics and Space Administration (NASA), and the Atomic Energy Commission (AEC) which operate most of the 2,545 computers.

CONTRACTOR ADP COSTS PAID BY THE FEDERAL GOVERNMENT

No single office in the Government accumulates the total costs for ADP operations of Government contractors which the Government absorbs under all its various contracts, and there was no basis for us to make a reasonable estimate without an impractical audit effort. We did estimate that the Government

spent a total of about \$75 million during 1971 at just eight defense contractor plants--an amount equivalent to about 2.4 percent of their total sales to the Government. However, because of the considerable differences in the nature of operations of Government contractors--and the variations in the extent to which they rely on ADP--it would not be sound to simply apply the 2.4 percent to all sales to the Government under Government contracts. And no other alternative method, short of a complete review, seemed appropriate to us.

ADP COSTS FINANCED UNDER FEDERAL GRANTS

A one-time reporting requirement imposed on Federal agencies by OMB identified \$257 million in Federal grant funds spent during fiscal year 1971 for grantees' ADP operations. However, OMB said that this figure had not been authenticated and that it should be used with extreme caution. We found no other record of the number or cost of ADP systems in use by grantees and thus we could not make a reasonable estimate of Federal expenditures for grantees' ADP operations.

ANALOG AND WEAPONS SYSTEMS COMPUTERS

As in the case of computers for which only inventory data is currently reported, data on operating and capital costs for computers fully excluded from reporting can not be readily identified from agencies' accounting records as ADP costs. In fact, even inventory data on this category of computer is not readily available. Moreover, the development of annual operating and capital cost data for computers in this category--such as we obtained for computers on which inventory data was reported--would have been arbitrary and subject to considerable dispute. Therefore we limited our review to identifying as much as possible of the fiscal year 1971 inventory of the three largest users of this category of computers--DOD, AEC, and NASA.

DOD and AEC, in meeting a special one-time reporting requirement for the Department of Justice, reported about 32,000 analog and weapons systems computers in their fiscal year 1971 inventory which were not reported under GSA's reporting system. We did not verify the accuracy of the data reported by DOD and AEC since annual cost data was not included therein. Similar one-time reporting requirements had been imposed on NASA; however, NASA had not responded at the close of our review.

We are not in a position to estimate the annual operating and capital costs for Government analog computers or for

most computers used in weapons and space systems. On the basis of the large inventory of equipment reported to the Department of Justice, we believe that such costs would be substantial.

CONCLUSIONS

It is impractical for us to make a more exact estimate of annual ADP expenditures or costs than the previous rough estimate of \$4 to \$6 billion. The time required to search out the quantity and enough acquisition cost and operating cost data on analog computers and on computers used in weapons and space systems would be prohibitively expensive. The only practical way to get such data would be to include these systems in the GSA reporting system from which they are now excluded. We would not at this time suggest such action, however, because we do not have sufficient indication that the result would be worth the cost.

Improvement in the accuracy of the data reported on the ADP systems currently in the GSA reporting system would be worth the effort. Many of the agencies' reporting problems and inaccuracies are caused by the vagueness of OMB's reporting requirements and related instructions issued by GSA.

The lack of agreement by professionals concerning standards for proper accounting has contributed to the problem of inconsistency of data reported under the current reporting systems. We have recently started a project to bring together experts from the academic community, the accounting profession, Government, and industry to establish accounting principles and standards specifically for ADP costs and investments. This project will provide much of the additional guidance needed to improve the consistency in reporting Government-wide ADP costs.

RECOMMENDATIONS

We recommend that, to improve the accuracy of the expenditure data in GSA's annual report on ADP equipment:

- The Director, OMB, amend Circular A-83 to clarify the points which are being misinterpreted or inconsistently interpreted by reporting agencies.
- The Administrator of General Services clarify GSA's instructions concerning Circular A-83 and establish a monitoring function that will check data reported by

AGENCIES VISITED

ATOMIC ENERGY COMMISSION:

Headquarters, Germantown, Maryland
Lawrence Radiation Laboratory, Berkeley, California
Los Alamos Scientific Laboratory, Los Alamos, New Mexico
Pittsburg Naval Reactors Office, West Mifflin, Pennsylvania

DEPARTMENT OF AGRICULTURE:

U.S. Forest Service, Region V, San Francisco, California

DEPARTMENT OF COMMERCE:

National Bureau of Standards, Gaithersburg, Maryland

DEPARTMENT OF DEFENSE:

Office of the Secretary of Defense

Department of the Air Force:

Headquarters, Washington, D.C.
Hill Air Force Base, Utah
Offutt Air Force Base, Nebraska
McClellan Air Force Base, California
Travis Air Force Base, California

Department of the Army:

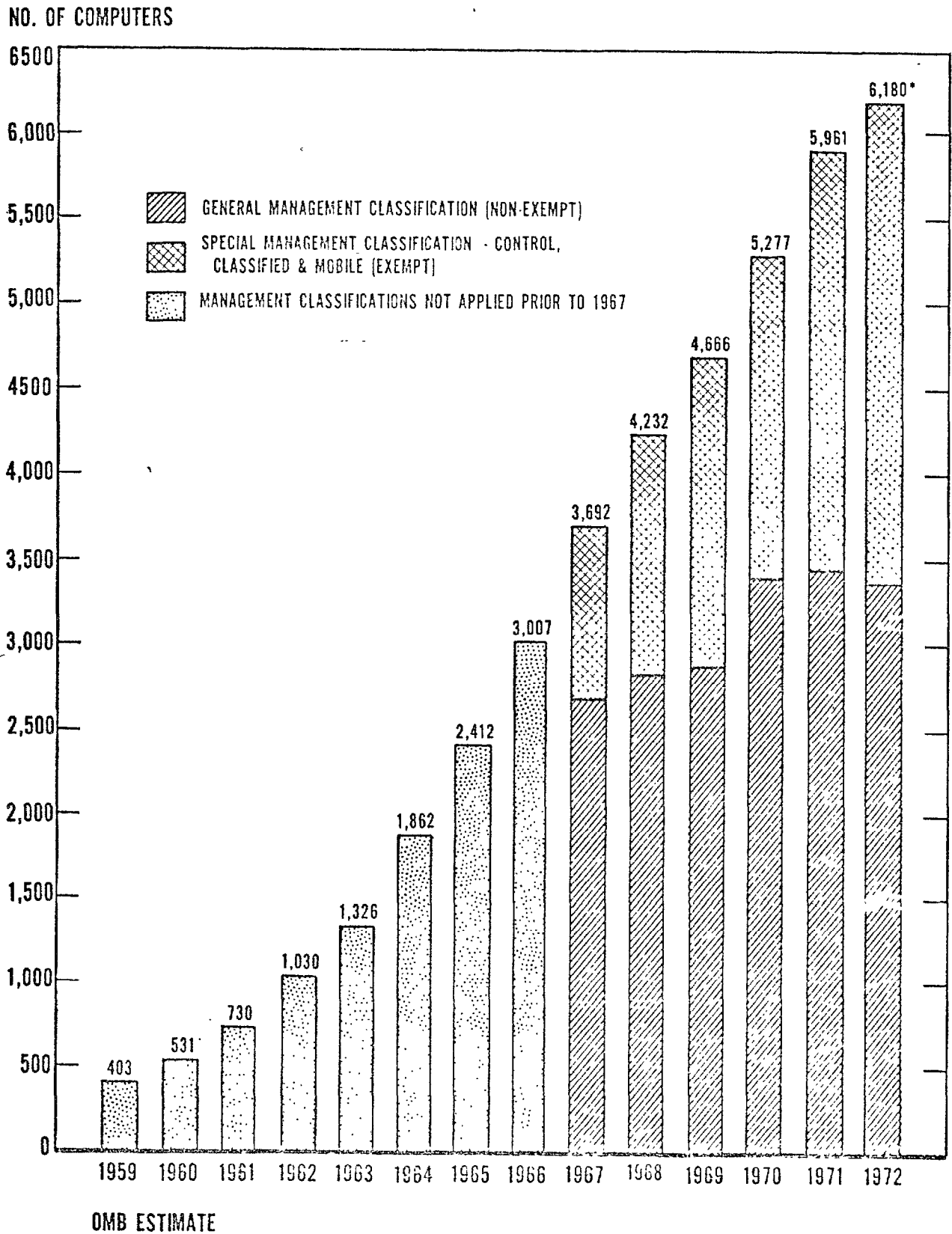
Headquarters, Washington, D.C.
Army Audit Agency Headquarters

Defense Supply Agency:

Headquarters, Cameron Station, Virginia

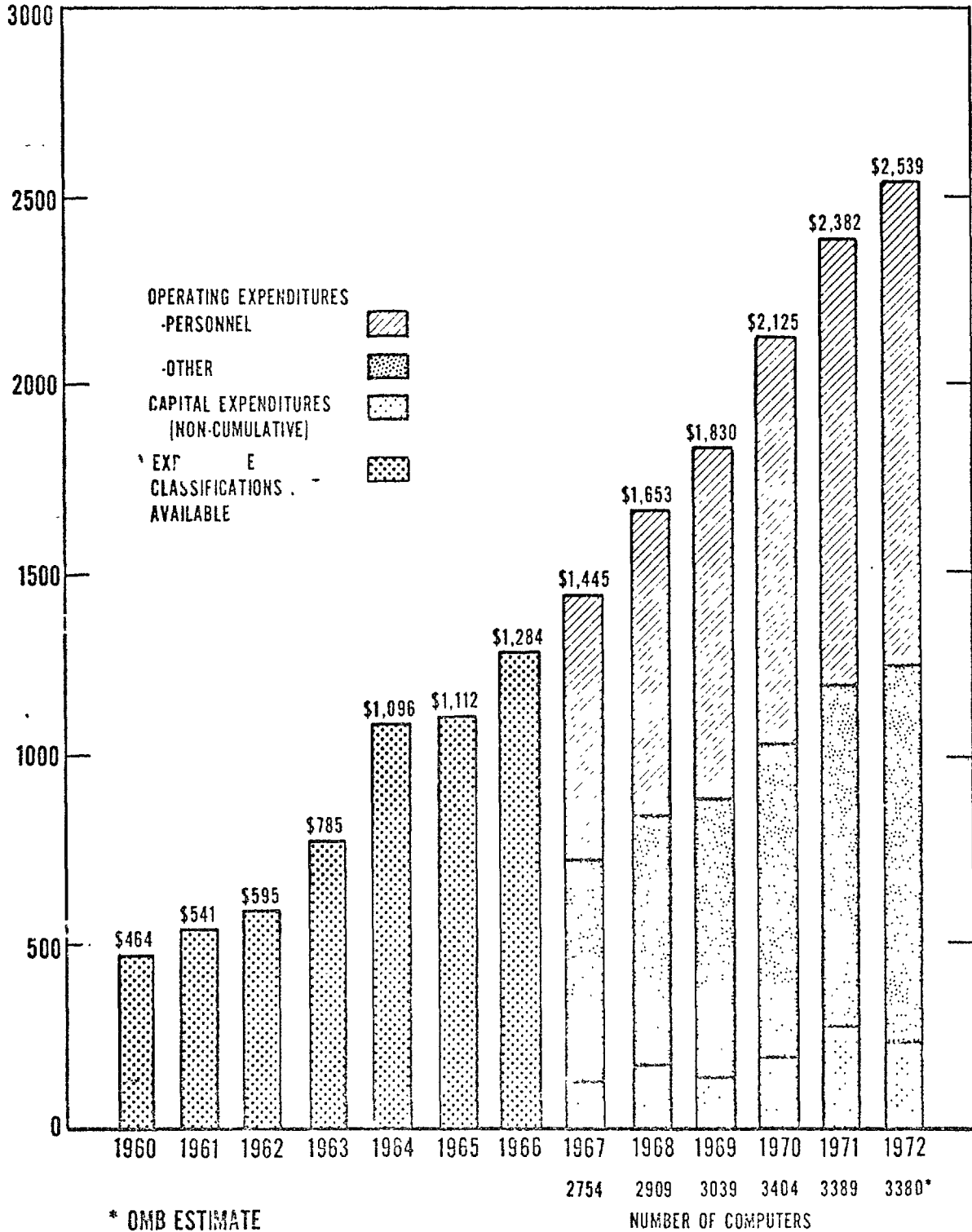
BEST DOCUMENT AVAILABLE

GENERAL SERVICES ADMINISTRATION TABLE OF
 NUMBER OF COMPUTERS IN THE FEDERAL GOVERNMENT AS OF
 JUNE 30—BY MANAGEMENT CLASSIFICATION



GENERAL SERVICES ADMINISTRATION TABLE OF ANNUAL ADP EXPENDITURES RELATED TO COMPUTERS IN THE GENERAL MANAGEMENT CLASSIFICATION FOR EACH FISCAL YEAR

MILLIONS OF DOLLARS



ROUTING SLIP

TAN: 701503

DATE: 11/7/78

1st Catalog le 5/23/79	Index Index 7/20/79
Initial Q.C. KY 5/23/79	Abstract
2nd Catalog le 5/23/79	Final Q.C.

most computers used in weapons and space systems. On the basis of the large inventory of equipment reported to the Department of Justice, we believe that such costs would be substantial.

CONCLUSIONS

It is impractical for us to make a more exact estimate of annual ADP expenditures or costs than the previous rough estimate of \$4 to \$6 billion. The time required to search out the quantity and enough acquisition cost and operating cost data on analog computers and on computers used in weapons and space systems would be prohibitively expensive. The only practical way to get such data would be to include these systems in the GSA reporting system from which they are now excluded. We would not at this time suggest such action, however, because we do not have sufficient indication that the result would be worth the cost.

Improvement in the accuracy of the data reported on the ADP system currently in the GSA reporting system would be worth the effort. Many of the agencies' reporting problems and inaccuracies are caused by the vagueness of OMB's reporting requirements and related instructions issued by GSA.

The lack of agreement by professionals concerning standards for proper accounting has contributed to the problem of inconsistency of data reported under the current reporting systems. We have recently started a project to bring together experts from the academic community, the accounting profession, Government, and industry to establish accounting principles and standards specifically for ADP costs and investments. This project will provide much of the additional guidance needed to improve the consistency in reporting Government-wide ADP costs.

RECOMMENDATIONS

We recommend that, to improve the accuracy of the expenditure data in GSA's annual report on ADP equipment:

- The Director, OMB, amend Circular A-83 to clarify the points which are being misinterpreted or inconsistently interpreted by reporting agencies.
- The Administrator of General Services clarify GSA's instructions concerning Circular A-83 and establish a monitoring function that will check data reported by