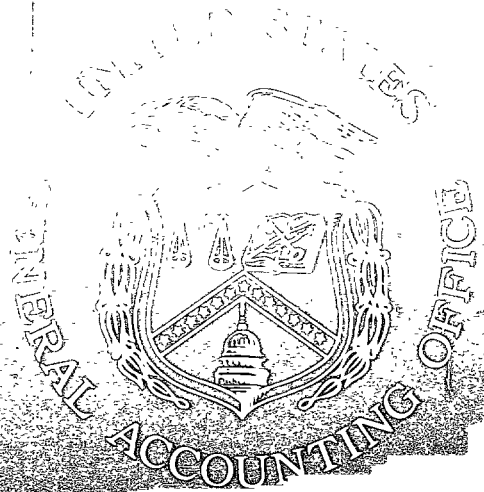




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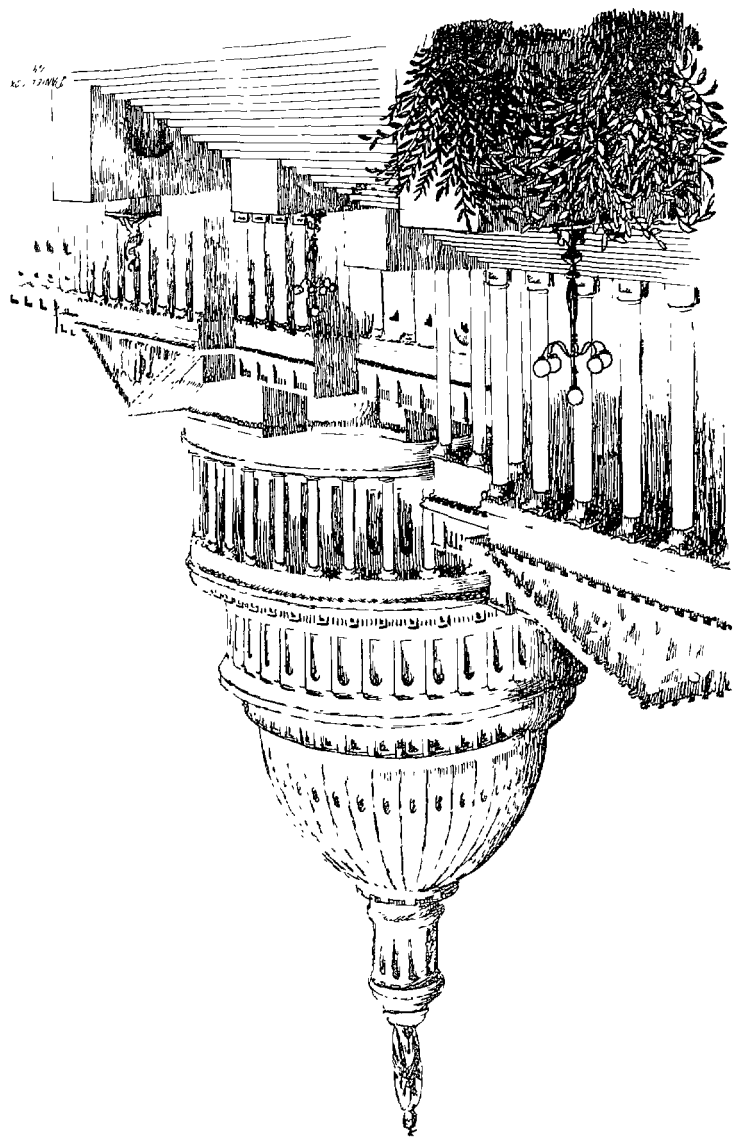
# THE GAO REVIEW

FALL 1972

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The United States General Accounting Office came into existence as an independent, nonpolitical arm of the Congress in 1921 with the enactment of the Budget and Accounting Act of that year. It obtains, evaluates, and communicates information about Federal programs and activities to assist the Congress in its legislative and oversight operations and agency officials in discharging their management responsibilities.



# THE GAO REVIEW

FALL 1972



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## The GAO: Government Watchdog, Analyst, Critic

721574

*The following article appeared in the June 5, 1972, issue of The Money Manager, a New York financial weekly for executives in business and finance. Written at the invitation of the editor, it provides a good review of GAO's role and emphasizes particularly the interests and concerns of private investors and the investment industry.*

Private investors seldom, no doubt, view the U.S. General Accounting Office as having an impact on the course of their activities in Wall Street.

As an audit agency of the Congress, GAO nominally might not be thought of in areas of investment concern—bond sales by TVA or some other Government corporation, Lockheed Aircraft financing, purchases of home mortgages by an agency of HUD, or sales of participation certificates by the Export-Import Bank of the United States.

But these and similar activities by agencies or corporations of the Government are examined by GAO from time to time and its reports made public. Occasionally these reports include recommendations to change the way Government obligations are sold and loan programs financed.

Less than a year ago, for example, as Comptroller General of the United States and chief executive of the GAO, I signed a report to the Congress rec-

ommending such a change. The report dealt with the "sale" of notes held by the Farmers Home Administration to the public. These sales are in the hundreds of millions of dollars a year and they are handled through an underwriter syndicate of security dealers.

In the report, I recommended to the Congress (in effect) the Farmers Home Administration stop selling securities and that its programs be financed through borrowings from the Treasury. This recommendation would mean that the investor, for example, would hold a 5 percent U.S. Treasury bond rather than a 6½ percent FHA note.

The Farmers Home Administration makes loans from the Agricultural Credit Insurance Fund and the Rural Housing Insurance Fund to individuals and to public and nonprofit associations for various purposes. The Farmers Home Administration sells the borrowers' loan notes to investors on a guaranteed basis and uses the proceeds to finance additional loans.

Because of the rapid increase in loans (from \$202 million in 1964 to \$895 million in 1969) and the sizable operating losses (\$104 million) incurred in recent years for the two funds, GAO made a review to determine the reasons for the losses and the ways in which future losses could be kept to a minimum.

Under money-market conditions prevailing in the last few years, the FHA interest rates on loans to borrowers have been significantly less than the rates at which the Farmers Home Administration sells the borrowers' loan notes to investors. This difference in interest rates has been the principal cause of the operating losses reported for the two funds.

Future annual operating losses of both funds could be minimized if the Farmers Home Administration could finance new loans through borrowings from the Treasury rather than through sales of borrowers' loan notes to investors. The sale of borrowers' loan notes, however, is required by laws establishing the loan programs.

We made two recommendations to the Congress.

First, amend the legislation which requires the Farmers Home Administration to finance its insured loan programs through sales of borrowers' loan notes because of the possible annual interest savings through the financing of Farmers Home Administration loan programs through Treasury borrowings.

Second, remove the 5 percent interest limitation and provide that the interest rates be based on the market

yields on outstanding Government obligations of comparable maturities and be adjusted in accordance with the borrowers' abilities to pay.

At this writing Congress has not yet acted on these recommendations.

GAO affects most Americans in one area or another—businessmen, farmers, hard hats, consumers, environmentalists, or defense contractors. Here is a different example of its impact.

Over a period of about 12 years the U.S. Navy spent a quarter of a billion dollars to develop and purchase a weapon system designed to destroy enemy submarines. It was a system for delivering torpedoes from drone helicopters operating from surface ships against subs detected by sonars. The system—called DASH—did provide the Navy with a capability it did not have previously. The U.S. General Accounting Office, making an audit of the new system, provided the Congress with disturbing information as to the cost—750 helicopters purchased, 362 lost in exercises as of April 1969.

A loss rate, in peacetime, of nearly half of a program's weapons—why? In making its review, GAO auditors were able to pinpoint the cause. We told the Congress that the results were due, in large part, to purchasing and producing the helicopters and components of the system before they were fully developed and tested.

The case was one more example of a method of defense procurement with which GAO was becoming uncomfortably familiar: large-scale production of major weapon systems before developing and testing of prototypes was completed. This has been a primary cause

of cost growth or cost overruns in defense procurement.

The practice of attempting to produce items on the basis of unproven designs is called "concurrency," that is, development and production of a new weapon concurrently. GAO examined all naval weapons systems developed and produced concurrently at a cost of about \$2 billion. The purpose was to obtain information on the extent of concurrency in the Navy, how it was managed, why the Navy decided that it was necessary, how likely it was to be successful, and what success was achieved.

Most of the Navy's major weapon systems were approved for large-scale production before completion of development and testing. The weapons frequently would not perform all the functions intended, and sizable amounts of time and money were spent to correct deficiencies. It appeared that deployment of effective weapons may not have been accelerated by the concurrency method. In fact, they may have been delayed.

Since concurrency can seriously affect cost and readiness, it is obviously wise to limit its use to those cases where the risk is necessary and there is a reasonable chance of success. The Navy procedures for concurrency were not sufficiently effective. Decisionmakers were not presented with all the information that should have been available to them in considering whether to proceed into production.

This was the tenor of what GAO told the Congress. As in most of our reports, we included suggestions of ways to correct the problem, in this

case quite complex suggestions. These do not immediately concern us here.

In these examples—of more than 400 of similar types of audits and reports GAO provides to Congress each year—what GAO did, essentially, was to get the facts, analyze them, and make suggestions for corrections. You can see, therefore, why GAO has a reputation in Washington of being a constructive critic. Essentially this is what GAO is, a constructive analyst and critic of the way the Federal Government's programs are carried out.

Many readers of this paper will remember Al Smith's favorite slogan—"Let's look at the record." It was an effective gambit for him in the years of his fame, the late 1920s. In those days I was a boy growing up on a farm in Kansas. Little did I imagine how many records I would look at in a career that has turned out to include, so far, service in two of the three branches of the Federal Government—the executive and the legislative.

In my work as Deputy Director of the Bureau of the Budget (now the Office of Management and Budget) under four Presidents, we were continually challenged by the necessity to obtain facts that would accurately guide us in determining whether proposed governmental programs actually were needed and what, in future years, they would really cost.

Now, as Comptroller General of the United States and a servant of the Congress, I am—as the head of GAO—still looking at records, many of them computerized now so that it is not as simple a matter to "look at the

record" today as it may have been in Governor Smith's time.

Even to get access to Government records can sometimes be difficult for GAO, although this is unusual; most Federal agencies cooperate with us in this regard.

It may come as a surprise to some in the investment world that their representatives in Washington, members of Congress, sometimes are unable to obtain information that they ought to have as chairmen or members of congressional committees to appropriate wisely the 240/plus billion dollars needed annually in the 1970s to sustain the complex services provided by the Federal Government. Congress has a constitutional responsibility to continuously review Government activities.

This is called the responsibility of oversight. Yet Congress lacks a considerable amount of information as to the adequacy of financial records, as to how its departments and agencies manage their programs, and what I will call "followup" information, or a record that will show whether or not an activity authorized by law and supported by appropriations is, in reality, accomplishing what Congress intended.

Let me illustrate this with an example.

The Federal Deposit Insurance Corp. is an independent Government agency which insures deposits in banks, which are qualified, up to \$20,000 for each depositor. National banks that are chartered by the Comptroller of the Currency and all State banks that are members of the Federal

Reserve System are required to be insured.

FDIC's operations are financed from assessments against insured banks and from income from its investments in U.S. Government securities.

FDIC is managed by a board of directors composed of two members appointed by the President and the Comptroller of the Currency, the third member.

For a number of years GAO has been unable to discharge its audit responsibilities satisfactorily under the Federal Deposit Insurance Act because FDIC officials did not give us unrestricted access to examine reports, files, and other records of its Division of Bank Supervision relative to banks insured.

Access to these records is essential because they contain facts, opinions, and recommendations of vital importance to the conduct of FDIC's affairs.

In our latest report I advised the Congress that because GAO did not have unrestricted access to examination reports and related documentation, we could not:

- Ascertain whether bank examinations were of sufficient scope and could be relied upon to identify all banks that should have been classified as problem banks, and
- Evaluate the significance of any possible adverse effect of problem banks on the financial position of FDIC.

Both GAO and FDIC believe that present law supports their respective positions. Repeated efforts to resolve this matter administratively have been unsuccessful.



I do not mean to imply that Congress is not informed as to most activities and programs carried out under the ultimate direction of the President. Of course, Congress—which appropriates the funds to run the Government—has access to a great deal of information. It is a matter of degree or selection. Even so, members of Congress often say that they do not feel sufficiently well informed in a world as technical, and as delicately balanced, as ours, to make the billion dollar decisions they are required to make.

For years this has been the situation as regards defense activities, as I have indicated. Now, with the tremendous growth of programs operated or supported by the Department of Health, Education, and Welfare, a concern of insufficient understanding is spreading into the area of social, health, manpower, and welfare programs.

As anyone knows who purchases information services or newsletters designed for investors or businessmen, specialized information does not come easily or cheaply. Information is a cost of running a business or a Government agency. Financial and management information is vital to both. This is what makes GAO of utmost importance to the Congress, and, also—though somewhat less tangibly—to the businessman or investor.

The example of the cost of the Navy's drone helicopter system illustrates what GAO can do, and does do, year in and year out, to provide the Congress with cost-effectiveness information, so important to sound management.

In fiscal year 1971 it cost nearly

\$80 million to operate the General Accounting Office, an organization of about 4,700 people. During that same year, collections and financial savings to the Government that can be measured attributable to the work of GAO totaled nearly \$268 million. Savings which cannot be measured are even more significant.

It is my view that GAO's greatest value lies in the area of management improvements which result from its audits. Frequently, as a result of our reports, Congress alters legislation and the departments and agencies take actions that result in improvements in Government services which cannot be evaluated in dollars.

One report issued last year, for example, resulted in reduced costs estimated by the Department of Health, Education, and Welfare at \$100 million a year of the Medicare program due to a change in the method of apportioning hospital costs.

Another dealing with nursing homes participating in the Medicaid and Medicare programs—pointing out that many were not providing proper care and treatment to patients—resulted in a substantial push by many States to upgrade this care, in accordance with Federal requirements. Who can estimate the long-range benefits from providing the Congress with the results of such audits in public reports?

Such results from GAO reports usually are not so spectacular. But, multiplied by the dozens, year in and year out, there is an accumulated gain from these reports for the Government that is impressive in its return of im-

proved services at lower cost to the taxpayer.

You can see from the above that GAO reports are basic to Government management. Sometimes they are just as basic to business, finance, and industry. Take the matter of profits in industries having defense contracts. For years this has been a subject of discussion, sometimes intemperate discussion, but a discussion without benefit of enough facts. Studies of defense contractor profits had been made that were of greater or lesser value but, ultimately, the Congress turned to GAO for help.

Specifically we were asked to study profits earned on negotiated contracts and subcontracts entered into by:

- The Department of Defense,
- The National Aeronautics and Space Administration,
- The Coast Guard, and
- Contracts of the Atomic Energy Commission awarded to meet Defense requirements.

Our report showed, in essence, that profit before Federal income taxes, measured as a percentage of sales, was significantly lower on defense work than on comparable commercial work for 74 large defense contractors whose records we examined. The profits of these contractors for a 4-year period (1966 through 1969) averaged 4.3 percent of sales of defense work and 9.9 percent of sales on comparable commercial work.

When profit was considered as a percentage of the total capital investment used in generating the sales, total liabilities, and equity, but exclusive of

Government capital, the difference narrowed to 11.2 percent for defense sales and 14.0 percent for commercial sales.

When profit was considered as a percentage of equity capital investment of stockholders, there was little difference between the rates of return.

The major factor causing comparability of the rates of return on contractors' capital investment for defense and commercial work was the substantial amount of capital provided by the Government in the form of progress payments, cost reimbursements, equipment, and facilities. This reduced the contractors' capital investment required for defense work. There were other aspects to the study which I will not attempt to review here.

The important point is that since GAO made its report last year there have been fewer unfounded allegations appearing in the press or heard over the airwaves that defense contractors are profiting unfairly from the Government. I could be mistaken in this assessment but I think that GAO's careful "look at the record" in this area is now widely accepted in business and Government circles as a detached, expert analysis that helped to determine the facts as impartially as anyone could.

The question not infrequently asked is why GAO does not make reports to the Congress of cases of questionable profits by individual defense contractors as frequently as it did, say 10 years ago. At least three factors have led to this change.

In the first place, the Defense Contract Audit Agency has come into being and in recent years has become

responsible for most auditing of individual defense contracts.

In the second place we now have the Truth-In-Negotiations Act (Public Law 87-653) on the statute books under which contractors are required to submit certified cost and price data in contract negotiations. This law has now taken hold and led to better contract pricing. GAO was instrumental in getting the law passed in 1962.

And, third, GAO is making broader type audits than previously, in the sense that audits it does make in the defense contract area may include a number of contracts where GAO has found parallel needs for improvements in contract administration or performance.

But, as I often explain to questioners, that does not mean that GAO will not single out for public attention the name of any contractor if his activities are such that the Congress should be advised of the situation. Occasionally this happens.

If a GAO audit turns up something that looks like a violation of a criminal law, we report the facts to the Justice Department. This is rare.

May we deduce from this that officials in the executive branch generally are honest and law abiding? One could wish that they had comparably high marks as financial managers and/or program administrators. Thus it is that in these areas of financial management and program management the independent GAO auditor is greatly needed.

More than 20 years ago Senator Paul Douglas issued a series of proposals for improvement of ethical

standards in the Federal Government. In it the Senator included a medieval English quatrain about the way in which the common lands of England were enclosed and taken over by the nobility.

The law locks up both man and woman  
Who steals the goose from off the common,  
But lets the greater felon loose  
Who steals the common from the goose.

From this we can draw a comparison. Stealers of Federal geese usually are apprehended. The far greater felon is the system, or lack of adequate system, under which Federal programs, and programs financed in part with Federal funds numbering in the thousands, are managed.

I sign dozens of reports a year to the Congress, its committees, and members on matters where our GAO auditors have looked at the records, found what was not working efficiently or being managed effectively in some aspect of an activity, and suggested improvements. Of course it is not in most cases deliberate, but poor management is by far the "greater felon" with which GAO has to deal.

Perhaps I have overemphasized the fact that we look at records in our audit and evaluation work. This suggests a much narrower approach than is actually the case. The examination of records is only part of our job. Other sources of evidence include people, physical observations and contact, and special analyses of data that we

obtain either from records, from people, or from observation.

We examine manpower training programs; Federal inspection procedures in meat and poultry plants and in the preparation and packaging of foods; administration of Medicare and Medicaid; U.S. attempts to improve housing for the poor; accounting principles and standards followed by Federal agencies; community action and other OEO programs; Agriculture Department inspections to prevent hazardous pesticides from reaching the public; educational grants programs; prices charged by the Atomic Energy Commission for enriched uranium; coal mine safety; a National Institutes of Health laboratory where primates are studied; the number of deep submergence rescue vessels needed by the Navy; the need to improve auditing standards in State and city governments; automatic data processing in the departments and agencies—you can see that the list is virtually endless.

Are corrections in these activities made by those responsible? Yes, usually, and sometimes before the ink is dry on our reports. For years the departments and agencies have known that they would be asked at congressional appropriations hearings what actions they had taken to rectify matters reported by GAO.

Now, under a 1970 law, the departments and agencies are required to report to Appropriations Committees of the House and Senate, within 60 days of issuance of a GAO report, what actions they are taking or planning on GAO recommendations.

The several hundred audit reports a

year that I sign and transmit to the Congress are the product of a sizable professional staff. Presently we have about 3,000 accountants, lawyers, business administrators, systems analysts, actuaries, statisticians, economists, engineers—about a dozen disciplines in all.

A staff of this size is a must because GAO goes wherever the action is to do its work—whether in Vietnam, where we have made a series of reviews of the phasedown operation, or in the Hough area of Cleveland, where we reported on problems in the development of minority business and employment under the Special Impact Program.

As to GAO's staff, numbers of course are less important than quality. GAO recruits yearly students in the top scholastic brackets of colleges and universities. As a result, we have built gradually over the years a highly competent organization capable of auditing any assignment that comes to it.

Any? Just about. Of course there are activities in which the Federal Government is involved that would require the knowledge of technical specialists—in areas such as medicine, atomic energy, or missile capabilities. But where we lack necessary skills ourselves, we are able to obtain competent consultants, a procedure that usually proves effective, enabling us to do a difficult job well.

I have not attempted here to define the range and scope of GAO work, but these have been implied. The U.S. Government spends money in nearly every area of activity that can be found in

American society. Where Federal dollars are spent GAO must follow.

Usually GAO examines a part of a program to get at a particular problem, rather than a program as a whole. We do some full-scale program audits, but not many. In defense auditing, we frequently go into plants of contractors but we do not review all of the operations of that contractor.

Usually we are examining only one or two matters and our work may take us into just one division of a large company. You will, of course, find the names of well-known defense contractors: Western Electric, Grumman, General Electric, McDonnell Douglas, Hughes, Aerojet General, General Dynamics, Raytheon, and so on, running through our reports fairly regularly.

Incidentally, the term "investors" covers a great deal of ground from the individual small investor to major institutional investors who handle millions of dollars of investment funds. The latter, of course, have large departments with analysts of all kinds whose job is to keep their ear to the ground on trends in Government and business operations, changes in society, and the like. GAO reports are a useful source of information that such analysts should be aware of in their long-range studies that support investment decisions.

Copies of our reports are available from the U.S. General Accounting Office, Room 6417, 441 G Street, NW, Washington, D.C., 20548. The price to the general public is \$1 a copy. Orders should be accompanied by cash or check. We also issue a monthly news-

letter free of charge summarizing, or listing, these reports.

What it all comes down to, essentially, is that GAO acts as the eyes and ears of the Congress, performing a management information service—and providing assurance wherever possible—as to how the Federal civil agencies are managing the programs for which they are accountable and whether or not the Defense Department is managing its resources prudently.

This latter concern is particularly relevant at present because of the challenges to our priorities, particularly assertions that we could safely cut defense spending and apply those funds more usefully to unmet social needs.

One of the most serious consequences of our present social frustrations, and the disappointments of many groups in our society, is the loss of confidence and credibility in Government itself. The President voiced this concern when he said in his State of the Union message last January:

Let's face it. Most Americans today are simply fed up with government at all levels. They will not—and should not—continue to tolerate the gap between promise and performance in government.

To anyone like myself who has spent his working life striving to improve the public service, this is disturbing, notwithstanding that I am fortunate in my own personal circumstances. GAO has a reputation for its "objectivity" that is so far unsullied. This is an auditor's way of saying that GAO has a reputation for "telling it as it is."

To maintain and to help restore confidence in our Government, it is mandatory that the money which taxpayers

work hard to produce and entrust to the Government is effectively and efficiently used. The cost of failure in this respect is not so much the loss of the money itself—in that it could have been better spent elsewhere—as it is the failure of the Government to produce results.

In all of this, the GAO auditor plays an increasingly important role, particularly as he moves increasingly in the direction of assessing management, methods, and the effectiveness with which funds are spent. He must “look at the record” of failures of coordination, of duplication, of jurisdictional delays, of persistence in using outmoded methods—of these and many other problems which create a gap be-

tween promise and performance.

For GAO to be effective in this expanding role, we must have available, and we are acquiring, expertise in many new areas—engineering, statistics, systems analysts, and administration.

GAO’s mission may be compared to swimming upstream. There is always the strong current of human limitations to be overcome. For wherever human ability is found, in business, finance, industry, Government, law, education, or science, it is also fallible. No matter how much services in Government or elsewhere are corrected and improved, they can always be done better. Constant and unremitting vigilance are GAO watchwords.

## Expanded Role for GAO

Throughout its history GAO has demonstrated the ability to adjust its policies and procedures to accord with the changing circumstances in which it functions. “For much of its first 30 years,” wrote one observer recently, “the GAO largely busied itself checking vouchers.” Now, in an infinitely more complex environment, the organization goes beyond the mere verification of the financial transactions of federal agencies and instead evaluates management planning, organization, control and decision-making in relation to operating results and program accomplishments.

*The Journal of Accountancy*  
June 1971

## Should the Government Buy Insurance?

*This article explains some of the principles underlying insurance and self-insurance. It also discusses some of the problems encountered by the study group which the Comptroller General established to survey the Federal Government's insurance and self-insurance practices.*

### What Is Insurance?

For the average person, insurance might be likened to a lottery in reverse. The buyer of a lottery ticket spends a small amount for the ticket with a remote but hoped-for chance of winning a huge amount of prize money. The purchaser of insurance, on the other hand, is motivated by the fear of losing rather than the hope of winning. He pays a small amount for an insurance premium so that, in the remote but possible chance that some dreaded event happens, the insurance company will pay all or most of his loss.

The lottery patron could, of course, assure himself of the prize money by purchasing all the tickets issued, but if he did so he would be a certain loser. Regardless of whether the lottery is promoted by a commercial enterprise,

a charitable organization, or a government, the promoter will plan to pay out less in prizes than is received from ticket sales, the difference being earmarked for expenses and profit.

The purchaser of insurance whose risks are so widespread that he is almost certain to suffer an occasional loss is in a position similar to that of the purchaser of all the lottery tickets. Over a period of time the near certainty of collecting an occasional claim from the insurance company will be offset by the near certainty that the total amount collected will be less than the total cost of insurance. Like the promoter of the lottery, the insurance company must set the price of premiums (lottery tickets) high enough so that its total income is sufficient to pay all loss claims (lottery prizes), cover expenses, and provide a reasonable profit.

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Mr. Smith directed the study group which made the survey discussed in this article. He joined GAO in 1953 and has served in the Los Angeles regional office, as director of the European Branch, and as an associate director in the Civil Division. He is presently director of the Office of Internal Review.

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The analogy of insurance to a lottery is, of course, an oversimplification. One of the major differences is the importance of interest. There is usually a fairly short timespan between the sale of lottery tickets and the drawing of prizes, and interest on receipts from ticket sales would probably be a minor part of the income of a lottery's promoters. There is a much longer time lapse between the sale of insurance and the payment of claims, and income on invested reserve funds is usually a significant portion of an insurance company's income. It is not necessary, therefore, that an insurance company's premium income exceed its claims payments, but only that its total premium and investment income exceed such payments.

Similarly, the total cost of insurance to the insured includes not only the amount of the premium but also interest on that amount, because if he did not purchase insurance he could invest the money saved in income-producing securities or use it for other purposes.

### What Is Self-Insurance?

An insurance company which issues policies on a large number of properties (or other types of risks) scattered over a wide geographic area can calculate from past experience, with a reasonable degree of accuracy, the amount of its expected losses each year and thereby establish premium rates at a level that will assure sufficient income to cover the payment of claims and expenses and leave it with a profit. But the owner of a large number of widely scattered properties can make a

similar calculation, elect to be a self-insurer, and save himself the insurer's expenses and profit.

To illustrate, the owner of a nationwide chain of small stores might calculate that over a period of years he would be almost certain to suffer some fire losses but that the possibility of such losses exceeding the total cost of insurance on all the buildings would be quite remote. He might therefore elect to be a self-insurer rather than to purchase fire insurance on the buildings.

If, on the other hand, he also owned a \$10 million office building, he might elect to purchase insurance on it because a single fire could destroy this large investment overnight. He could afford to self-insure the widespread risk represented by his investment in a large number of widely scattered buildings, but he could not afford to self-insure the risk represented by a large investment concentrated in one place, which might be lost as a result of a single occurrence.

Everyone is a self-insurer of some risks. It is neither desirable nor possible to cover every conceivable risk with insurance. Some risks are too small or too certain of occurrence for insurance to be economically feasible. A man might carry collision insurance on his \$3,000 automobile but not on his son's \$100 bicycle. The loss of \$100 would be painful but could be absorbed, while a \$3,000 loss might be a severe financial blow from which he would be long in recovering. However, even the automobile policy would probably include a deductible clause making him a self-insurer for the first \$100



worth of damage suffered in a collision. The probability that the insured will be involved in an occasional small accident with minor damage is so high that it makes insurance at that level economically infeasible.

There are two criteria, therefore, for determining whether an individual or organization should be a self-insurer of a given risk. Self-insurance is usually advisable (1) when the insured is financially able to absorb his maximum probable loss or (2) when the risk is spread so widely that it results in a minimal statistical probability that losses will exceed the cost of insurance over a reasonable period.

### **The Government as a Self-Insurer**

It is readily apparent that the Federal Government meets both of the stated criteria regarding all its insurable risks. The Government, therefore, has traditionally followed the practice of self-insuring its risks. This practice, however, has generally been based on policy rather than a statement of positive law. Decisions of the Comptroller General of the United States and predecessor officials have held that, unless specifically authorized by the Congress, appropriated funds may not be used for the payment of premiums on insurance policies.

The Congress has in some cases supported the policy of self-insurance by specifically prohibiting the expenditure of appropriations for the payment of insurance premiums. In other cases, however, it has made exceptions to the policy by authorizing or requiring the purchase of insurance by the Govern-

ment or its contractors. For example, the Miller Act (40 U.S.C. 270a) requires that any contract over \$2,000 awarded by the Federal Government for construction, alteration, or repair of any public building or public work be covered by a performance bond to ensure the contractor's performance and fulfillment of the contract terms and by a payment bond to ensure payment to all parties supplying labor or materials under the contract.

GAO reviews have disclosed practices by Government agencies which were inconsistent with the policy of self-insurance. In some cases appropriate corrective action was taken, but in many cases the agencies disagreed with GAO's recommendations and continued the uneconomical practices.

The Government currently self-insures, in almost all cases, the risks of loss or damage to Government-owned property, workmen's compensation for Government employees, and liability for property damage and bodily injury as a result of the actions of the Government or its employees. However, the Government procures certain other types of insurance, and it pays for a number of types indirectly through contracts, grants, leases, or other means.

### **GAO's Self-Insurance Study Group**

To obtain an overall assessment of the nature and scope of the problem in the Federal Government and to formulate a plan of action for further review and reporting by GAO, the Comptroller General in October 1970 established a special study group. The study

group was comprised of representatives from the Civil Division, the Defense Division, the Field Operations Division, the Office of the General Counsel, and the Office of the Comptroller General.

The study group was established to make a survey rather than a detailed review of Government agency policies and practices. No comprehensive survey had previously been made of the types of insurance being procured directly and indirectly by the Federal Government. Simply to identify each type of insurance and to make a preliminary evaluation of the appropriateness and feasibility of self-insuring the risk covered was a formidable task to complete within reasonable time limits. The detailed audit work necessary to develop accurate estimates of potential savings, resolve all questions of appropriateness and feasibility, and formulate specific recommendations would have to wait until later.

The study group established three basic objectives:

1. Identify all types of risks against which the Government was procuring insurance coverage, either directly or indirectly, in substantial amounts.
2. Evaluate each identified risk as to appropriateness and feasibility for self-insurance by the Government.
3. Establish an order of priorities for further study of those types of insurance which appeared to be appropriate and feasible for self-insurance.

## Identification of Risks

To assist us in fulfilling the first objective, we enlisted the aid of GAO operating divisions. Regional managers, overseas branch directors, and Washington associate directors were asked to help us identify all types of insurance being procured by Government agencies, obtain copies of agency instructions and regulations pertaining to insurance or self-insurance, and identify prior GAO reports dealing with insurance.

To provide further assurance that we had identified every significant type of insurance being procured by the Federal Government, we mailed questionnaires to 89 contractor operators of Government-owned plants, 222 major Government contractors operating their own plants, and 200 construction contractors. Before finalizing the questionnaires, study group members visited several contractors and solicited comments on draft questionnaires to ensure that the questions were clear and would be consistently interpreted. After replies to the questionnaires were received, additional visits were made to a few major contractors to obtain additional information and further assurance that they had interpreted the questions correctly and had provided data on a consistent basis.

The questionnaires and visits not only identified several types of insurance being paid for by the Government, which we had not been previously aware of, but also provided valuable information on insurance costs being borne by the Government, claims

paid by insurance companies, and the views of contractors regarding Government assumption of the various risks involved.

### **Appropriateness**

Our second objective was to evaluate the appropriateness and feasibility of Government self-insurance of the various risks which had been identified under the first objective. We considered appropriateness to be of primary importance because, unless a risk was one which could be properly assumed by the Government, the question of economic feasibility—that is, whether self-insurance could result in monetary savings—would be academic.

Initially the study group hoped to establish a single set of criteria for determining the appropriateness of Government self-insurance of each of the various risks under consideration; however, the problem was too complex for this simplistic approach. There was too much variety in the types of insurance being procured and too many subtle gradations in the factors affecting appropriateness.

Ultimately we made our evaluations on a case-by-case basis, considering such factors as (1) whether the Government had title to the insured property and, if not, whether the property was being constructed or manufactured for the Government, (2) whether the property was physically under the control of the Government or its employees, (3) whether the insurance was being procured pursuant to a Government-sponsored program established by law, (4) the extent to which

the probability of loss or injury was dependent on the care and competence of Government officials or employees on the one hand or of non-Government personnel on the other hand, and (5) the possibility that assumption of risk by the Government might reduce the incentive of contractors to exercise due care in carrying out their contractual responsibilities.

One of the most difficult determinations which the study group had to make regarding appropriateness involved a Government corporation, the Tennessee Valley Authority (TVA). We had determined at the outset that the Federal Government should be considered a single entity and that the risks of the agencies in all three branches of Government should be pooled for the purpose of self-insurance. This pool could include the risks of Government corporations, such as the Commodity Credit Corporation, which are supported by appropriated funds. We encountered difficulties, however, when we attempted to include corporations such as TVA, which conduct self-supporting activities.

TVA was constructing two nuclear power plants and was purchasing nuclear liability insurance at an annual cost of about \$5,000. When the plants are completed and in service, the insurance costs are expected to be between \$1 million and \$1.5 million a year. Although a major portion of this expense might be saved through self-insurance, the savings would benefit TVA's customers rather than the Federal Government. On the other hand, if this risk were pooled with other Government risks, any losses would be in-

demnified from appropriated funds and the Government's expenditures might be increased, rather than decreased, through self-insurance.

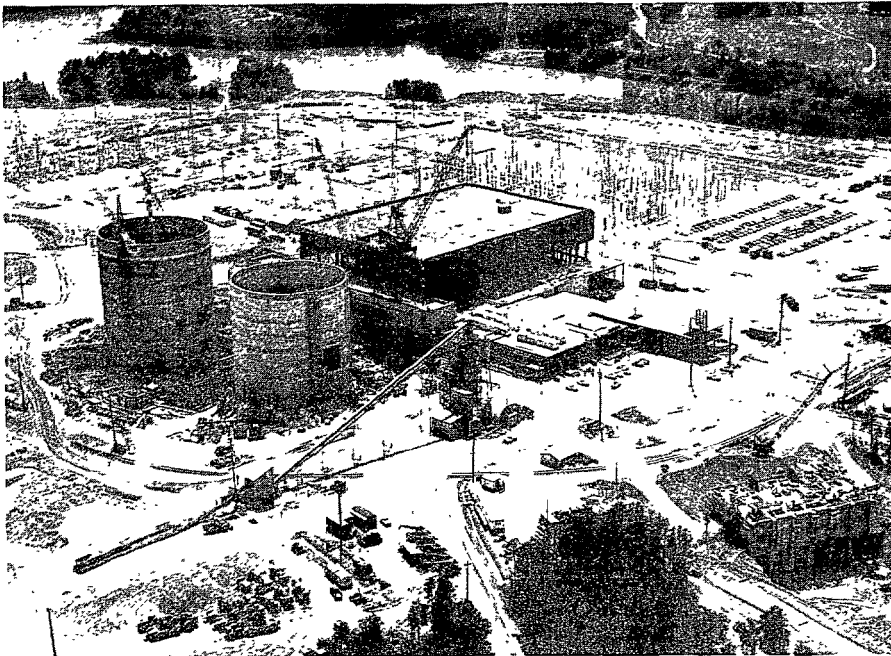
We considered the possibility of requiring TVA to pay an annual premium into the Treasury in return for assumption of the nuclear liability insurance. This approach, however, would merely substitute the Government for the insurance company as the insurer of a risk for the benefit of the customers of TVA and might raise serious questions about unwarranted Government competition with private industry.

We concluded, therefore, that Government corporations which conduct self-supporting activities should be

considered separate entities and that each such corporation should self-insure its risks to the extent of its capacity to absorb losses and should purchase insurance coverage on risks which exceed that capacity. Since this was essentially the course that TVA was already following, we concluded that no further audit action in this area was warranted.

### Feasibility

Once we were reasonably satisfied with the appropriateness of Government self-insurance of a risk, we turned our attention to obtaining information on premium costs, claims experience, and other data needed to



TVA Photo

*TVA's Sequoyah Nuclear Plant has been under construction since early 1969 at Chickamauga Lake near Chattanooga, Tenn.*

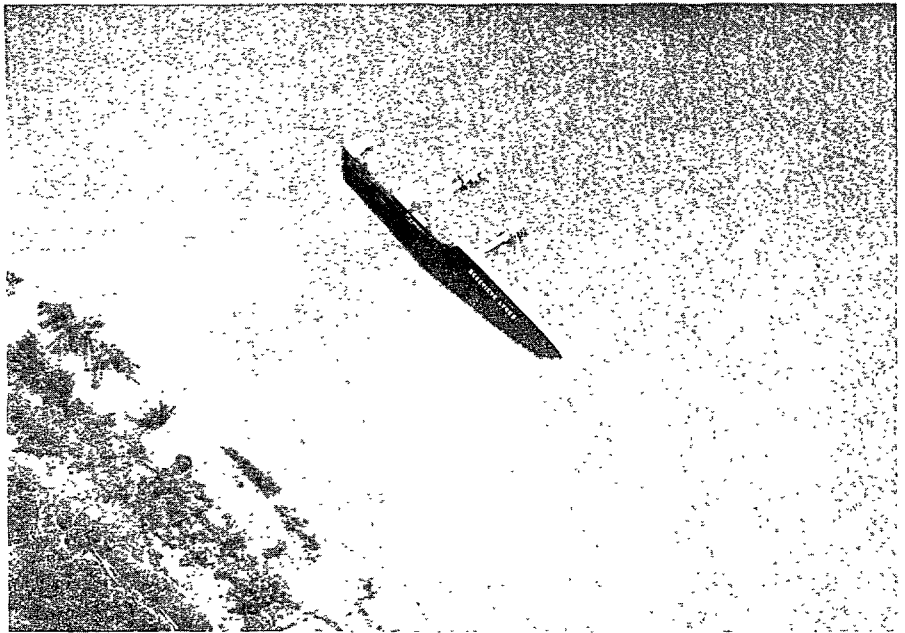
support a determination that self-insurance would result in savings to the Government and needed to estimate the magnitude of the potential savings.

From the explanation of self-insurance at the beginning of this article, it is apparent that any comparison of the insurance cost to the Government with claims experience over a representative period of time should result in a *prima facie* case in support of self-insurance. Within a short timespan or a limited geographic area, claims might exceed costs, but such a situation would be unlikely to continue for long without the insurance company either raising premiums or going out of business.

For example, Hurricane Betsy in 1965 caused tremendous damage to the gulf coast shipbuilding industry, and

claims for losses on ships under construction in that area undoubtedly exceeded the premiums paid for a number of preceding years. Shortly thereafter, premium rates for builder's risk insurance were increased substantially, not only for gulf coast shipyards but for most other locations susceptible in any degree to hurricanes.

Limiting a feasibility study to a comparison of costs with historical claims data, however, would ignore the fact that in many cases insurance companies perform other important functions in addition to the indemnification of losses. Safety inspection, for example, may be an important function performed in connection with hazard and liability insurance, particularly on major construction projects. In addi-



Army Corps of Engineers Photo  
A vessel which was under construction when Hurricane Betsy struck in September 1965 lies sunken in the Mississippi River near New Orleans, La.

tion, the adjudication and settlement of claims, often involving litigation, are important services provided by insurance companies in connection with liability insurance.

Any feasibility study of self-insurance would be incomplete, therefore, without identification of additional functions performed by insurers; evaluation of the necessity for the functions; and consideration of the probable cost, under a self-insurance program, of performing the functions in-house or having them provided under contract. Consideration must be given to the criteria prescribed by the Office of Management and Budget in Circular No. A-76 for determining when the Government should provide directly the products and services it uses rather than procure them commercially.

Evaluation of the significance and need for these additional functions and development of an estimate of the cost of performing them in-house would involve more detailed audit work and analysis than was practical or appropriate for our survey. Therefore, we limited our work in most cases to identifying important functions performed by insurance companies which would have to be considered in further GAO reviews before final determination of the feasibility of self-insurance.

Another difficult problem that confronted us regarding feasibility involved grant and subsidy programs of the Federal Government. In very few of these programs does the Government bear 100 percent of the cost. In most programs the Government percentage of participation is less than

100 percent, and in many programs it is less than 50 percent.

For the Government to self-insure the entire risk, therefore, would mean assuming 100 percent of any loss in return for saving only a portion of the premium expense, which could easily result in increasing rather than decreasing total Government expenditures. On the other hand, many grantees would not have wide enough risk exposures to meet the criteria for self-insurance, and those that did meet them might be reluctant to abandon their traditional dependence on insurance protection.

We were reluctant to give up on the feasibility of self-insurance under grant and subsidy programs, however, because the cost to the Federal Government for insurance under these programs is substantial. Under the highway construction program alone, the annual cost to the Federal Government for bid, performance, and payment bonds is about \$20 million. There appeared to be good potential for saving a large portion of this cost through self-insurance, because there had apparently been very few defaults and there seemed to be considerable duplication between the contractor prequalification procedures of most States and the screening functions performed by sureties.

We considered the possibility that the Federal Government might self-insure its portion of the risk while the grantee procured insurance on its portion. Officials of bonding and insurance companies with whom we discussed the idea gave us little encouragement, however. They stated that, even if they

agreed to cover only a portion of the risk under such circumstances, they could not make a proportionate reduction in the premium rate because expenses for selling, administration, safety inspections, investigations, and claims settlement would be approximately the same whether the insurance covered all or a portion of the risk.

Nevertheless, we believed that it might be feasible for the Government to self-insure risks under grant and subsidy programs for which Government participation was close to 100 percent. For example, the Federal Government provides 90 percent of the funds for construction of interstate highways. For construction and improvement of primary and secondary roads and streets, Federal participation is presently 50 percent but will increase to 70 percent in fiscal year 1974.

It appeared that, under programs with Federal participation of 70 percent or higher, there might be some potential for savings even if the Government assumed the entire risk. An additional possibility, which could be applied at any level of Government participation, might be for the Federal Government to assume 100 percent of the risk and to make an appropriate reduction in the Federal grant or subsidy payment. We recommended further study and evaluation of these alternatives.

### **Priorities**

To fulfill the third study group objective, we established three categories of priorities and labeled them

Priorities A, B, and C. We assigned Priority A to those risks that appeared to be both appropriate and feasible for self-insurance by the Government and for which potential savings appeared to be significant. An example of Priority A was the Federal Employees' Health Benefits Program. We foresaw no serious questions regarding either appropriateness or feasibility of Government self-insurance of this program, and we estimated potential annual savings of at least \$5 million to the Federal Government and \$7.5 million to Federal employees.

We assigned Priority B to those risks which appeared to have sufficient potential to warrant further consideration but for which either (1) there were important questions regarding appropriateness or feasibility of self-insurance which could not be resolved in the survey or (2) the potential savings through self-insurance did not warrant the highest priority.

For example, we assigned Priority B to bid, performance, and payment bonds on contracts for the construction of public works. Although we estimated annual costs to the Government for such bonds to be well over \$20 million, we were unable to develop an overall estimate of potential savings, because of the unavailability of data on losses through contractor defaults. In most cases of contractor default, the surety takes over and completes the construction project using a different contractor, and the surety's records are not ordinarily available for GAO inspection.

Also, serious questions remain regarding the feasibility of Government

self-insurance of the risks covered by these bonds. Besides relieving the Government of financial loss in connection with contractor defaults, sureties generally (1) screen out marginal contractors during the bidding process, thereby providing assurance that bidders are technically and financially competent, and (2) when a default occurs, relieve the Government of a tremendous administrative burden by taking over the project; settling the claims of laborers, subcontractors, and suppliers; and obtaining another general contractor to complete the construction. These functions must be carefully evaluated before the feasibility of eliminating the legal requirements for performance and payment bonds can be supported.

We assigned Priority C to those risks which did not appear to have potential for self-insurance by the Government under present conditions. An example of Priority C is the liability insurance now being procured on Government-owned vehicles operated in foreign countries. Although this represents a direct purchase of insurance on a Government risk, we concluded that such insurance was essential to comply with laws and policies of foreign countries and to protect employees while operating U.S. vehicles in such countries.

### Other Issues

One of the major issues confronting the study group was whether the Government's self-insurance program should be conducted on a funded or an unfunded basis. Under a funded pro-

gram, an insurance trust fund would be established and administered by the Treasury or some other central control agency. Agencies would pay premiums to the fund in proportion to their risk exposure, and the fund would indemnify agencies' losses.

Under an unfunded program, each agency would absorb its losses within its own annual budget or would request additional appropriations from the Congress to cover unusual losses. The Government's present self-insurance program for hazard, liability, and workmen's compensation risks operates, with minor exceptions, on an unfunded basis.

A funded program would have the advantage of avoiding the impact of a heavy loss on an agency's budget in a single year and would also provide data on the cost of insurable losses to the Government as a whole and to each individual agency. On the other hand, a funded program would lose some of the economies of self-insurance because of the expenses of administering the fund, computing and collecting premiums, and preparing and processing loss claims. While recognizing the benefits of a funded program, the study group concluded that it was questionable whether such benefits would be commensurate with the additional cost. We therefore elected not to recommend a funded self-insurance program.

Another problem confronting the study group was whether to organize our report on the basis of the types of insurance being procured or the method of procurement (direct purchase or indirect procurement through



contracts, grants, leases, or other means). Because a number of types of insurance are procured both directly and indirectly under a variety of circumstances, either approach would necessitate some duplication and repetition. While sound arguments could be advanced for either approach, we decided that it would be more logical to organize the report on the basis of the method of procuring and paying for the insurance and to use appropriate cross-references between related sections of the report to minimize repetition.

### Reporting

The report of the study group was submitted to the Comptroller General on March 23, 1972. He subsequently asked the study group to revise the

report into a format that could be issued as an information report to the Congress. This was accomplished mainly by deleting the recommendations for further review by GAO and substituting discussions of the areas for which further study would be required to demonstrate the feasibility of self-insurance. The report to the Congress (B-168106) was issued on June 14, 1972. Copies of the report were sent to the heads of the departments and major independent agencies of the Government and to the congressional committees concerned with the programs and expenditures of those departments and agencies.

Several GAO reviews are underway or are scheduled to be initiated within the next few months to demonstrate the feasibility of self-insuring various risks identified by the study group.

## Civil Service Accountability

I think that one of the most fundamental reasons for all of these problems, such as the General Accounting Office recounts almost daily in its reports and the congressional investigative committees show affecting the refusal of the executive branch agents and departments to implement policy, to enforce the law is the fact that we have not set up a framework for civil service accountability.

*Ralph Nader*

Before the Senate Committee on Commerce during hearing on need to strengthen Federal regulation of drinking water, March 20, 1972

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# The Environment in Governmental Accounting in the Seventies

*This article is based on a speech given by Mr. Herbert at the Western Region Meeting of the American Accounting Association at Las Vegas, Nev., May 8, 1971, and his article "A Perspective of Accounting" published in The Accounting Review, July 1971.*

## Introduction

"The Environment in Governmental Accounting in the Seventies" is a very apropos subject at this time. The environment, as we shall see, has played a very important part in the evolvement of the accountant from a bookkeeper to a professional evaluator of management and in the resultant knowledge needed by him to be a professional. As James Winjum said:

While it can be demonstrated that in its long history accounting continually reacted to, and was a product of, the environment in which it functioned, could it not also be shown that as accounting was responding to the needs of society, it in turn was exerting an influence on the society it served.<sup>1</sup>

The influence accounting has had on the various elements of our society and the significant roles those various elements have played on accounting should not be underestimated. For example, some writers say accounting

had a considerable impact on the industrial revolution. Others have stated that the investment of great quantities of foreign capital in the United States after the Civil War had a consequential influence on what accounting is today.

Accounting is a well-accepted means of providing information for better government. But the reverse can also be said. The Federal Government has played an essential role in providing an environment for the changing products of accounting. This influence—of the Government on accounting and accounting on the Government—can provide us with a different perspective of accounting. United States history can show us the accounting products provided by the Federal environment and also the influence accounting has had on the Federal Government and its citizens. Current conditions can indicate possible future products from the Federal environment and the influence accounting can have on the American Government and the society it serves.

<sup>1</sup> James Winjum, "Accounting in Its Age of Stagnation," *The Accounting Review*, Evanston, Ill. (October 1970), p. 744.

## Early Environment for Accounting

The conditions under which accounting operated in the United States prior to the middle of the 19th century, both in government and business, can be stated very simply. The environment was primarily agricultural. Most businesses—agricultural, commercial, and industrial—were small. State and local governments were the dominant public bodies, and most citizens believed the less government the better. There was little governmental influence in any business activity. Any auditing was for checking the accuracy, legality, or fraudulence of records. The concept of an independent accountant—while relatively old elsewhere—could not be supported here at that time.

Any reference to accounting—whether in government, business, or commerce—was concerned with accounts and records. That was all that was needed. In those days you learned accounting as an apprentice. The common body of knowledge was limited to a few treatises on bookkeeping and what was in the heads of those who practiced. Once the subject was learned, nothing needed to be done to keep up to date since very little changed.

Immediately before and after the Civil War, the environment changed so radically that it influenced the functions of the accountant and the knowledge he needed just as radically. Industry, commerce, transportation, and finance were becoming preponderant, and they provided the major stimuli

for changes in accounting. The Federal Government, taking over for the States and municipalities, was becoming the dominant public body.

Absentee owners of industrial, commercial, financial, and transportation businesses, rather than expecting accounting to be mainly an asset-recording tool, were now beginning to require it to be an income-measuring tool—a tool for measuring the profit performance of those who carried out the activities for investors. According to the American Institute of Certified Public Accountants:

In the latter part of the 19th century, considerable amounts of British capital began to be invested in breweries, railroads, and other businesses in the United States, and the absentee owners often sent accountants to check on their distant interests. Many of the Englishmen and Scots who came on these missions remained in America, and they played an important part in stimulating and shaping the profession here.

In 1896, New York became the first State to enact a law providing for certification of public accountants who met certain standards. Other states later adopted similar legislation.<sup>2</sup>

Thus, the auditor began to act as a representative for absentee owners rather than for the managers of business. In his audits he represented the equity suppliers and was independent of management. Now the environment began to support the concept of an independent accountant, and independent financial auditing became a part of the accountant's common body of knowledge.

<sup>2</sup> "Designers of Order: The Story of Accountancy Briefly Told," American Institute of Certified Public Accountants, *The Journal of Accountancy* (July 1970), p. 63.

Absentee owners, demanding greater returns on investment no matter what the cost to others, and management, reacting to that demand, brought governmental intervention. Federal laws enacted during this period relating to antitrust, transportation, labor, etc., were passed to improve the conditions in which business organizations and individuals operated and not to improve the end results of those operations. Increased revenues for the operation of the Government were also needed. The Federal Income Tax Act of 1913 provided this.

Circumstances in the early 1900s required accounting to be not only an income-measuring tool but also a cost- and production-measuring tool. During World War I, contracts were awarded for many new types of military supplies and equipment. Because no one knew what these items should cost, since they had never been produced before, cost accounting—a means to measure the costs of producing these items—evolved.

Those who have studied the history of accounting know that prior to, during, and immediately after World War I, cost accounting was not considered a function of accounting but a statistical means for measuring production costs. Many accountants with record-keeping backgrounds did not want to be a part of this production-measuring capacity any more than many accountants today want to be a part of a managerial-measuring capability. Because accountants had to provide this service, cost accounting became a legitimate extension of traditional accounting and a required part of every

accountant's knowledge.

All these developments took place within the context of finance, commerce, and business—the profitmaking sector. Accounting began as an asset-recording tool, became an income-measuring tool under investor conditions, and then moved into production measurement with the evolution of cost accounting.

Now we can begin to see the need for an expanded body of knowledge and for a means of acquiring it. A few books on bookkeeping, cost accounting, and auditing were written and used as a basis for education. Schools of commerce, finance, and business were established in the universities to teach these professional subjects.

The professionalism of accounting was related to the audit function—the expression of an opinion on financial statements—and not to the recordkeeping function. The CPA certificate, with its examination of the accountant's common body of knowledge, was now required for professional practice.

The Federal Government had done little during this period to improve recordkeeping, financial measurement, or production measurement in its own field. This was corrected somewhat by the passage of the Budget and Accounting Act, 1921, which brought the Government's accountability up to the standards of business and the accounting profession. This act created GAO as a nonpolitical, independent agency in the legislative branch and the Bureau of the Budget in the executive branch.

The Comptroller General, as the head of the General Accounting Office,

was to be appointed for a term of 15 years by the President with the advice and consent of the Senate. He would not be eligible for reappointment and could be removed from office only by impeachment or by joint resolution of the Congress for a specified cause. These conditions brought independence to the accounting agency.

### Environment for Change From the 1920s to the 1950s

Between the time GAO was started in 1921 and the beginning of World War II, many circumstances affected the environment in which the accounting profession developed. The depression of the 1930s forced the Federal Government out of its neutral role. It began to grow. Its policies now began to affect economic, social, scientific, and other forces for improvement. Many agencies of the Government—e.g., the Securities and Exchange Commission and the Internal Revenue Service—began to play commanding roles for the accountant in the profit-making sector.

With World War II, the discovery of nuclear fission, and the cold war, the Federal Government not only grew, it exploded! The policies of many Federal agencies gave impetus to the profession for developing better standards of accounting, auditing, and reporting not only for profitmaking but also for internal financial management. Now the common body of knowledge included accounting and auditing standards and concepts and a knowledge of income tax accounting, as well as accounting and auditing procedures.

Now look at what the Federal Government required of the accounting profession: better records for income taxes, social security taxes, and costing of products; better audits for investor security; and better records and audits for its own internal management. One of my professors said at this time, "The accountant should bow to Washington three times each morning because its laws and regulations have made the profession what it is." Instead of coming from within, changes were being forced upon the profession from without, and much of the knowledge required of the accountant was a result of Federal activities.

Internal management, likewise, was at this time expecting more from accounting. On this subject Ross G. Walker said:

Here, I said to myself, is an adventure in "thinking ahead" by business that should set some of the rest of us pondering its implications.

\* \* \* The Accounting Department, by using the records as a foundation, has added interpretive, analytical and projective services, and, in fact, has provided new "eyes" for management. Through this development, industrial accountants have been drawn into planning, decision making and controlling steps of both general management and the departmental management. In the modern business organization the accounting department has left its former shell of record keeping and financial reporting, and actively participates in the determination and execution of management policies.<sup>3</sup>

In the 1950s college teachers were beginning to teach managerial accounting—accounting for management decisions as contrasted with

<sup>3</sup> Ross G. Walker, "Thinking Ahead," *Harvard Business Review* (September 1950), p. 19.

accounting for investor decisions—as a part of the accountant’s common body of knowledge. The public accountant, too, began to focus his attention not only on financial statement accuracy for investor decisions but also on what could be done by management with that information. As George O. May stated:

In recent years there has been a major shift of interest from the accountant as an auditor to the accountant as the adviser to management, and from the auditor of transactions to the auditor of accounting. Having occupied a position of responsibility in accounting during the whole of the century, I have been deeply conscious of the importance of these changes and of the fluctuations in the Institute’s response to them, and also of the inappropriateness of some of the remedies or “improvements” that have been suggested.<sup>4</sup>

The Federal Government, which by now had become the biggest business in the world, also began to look at accounting as more than just record-keeping but in a somewhat different manner. The needs of the Congress, agency heads, and the public required that accounting be used not only as a tool for recordkeeping and its evaluation but also as a tool for management and its evaluation. Previously, top management in the Government, including the Congress, had emphasized how well the agencies spent and controlled their appropriations. Now it began to emphasize how efficiently the managers performed. Because of this emphasis on efficient management and in order to supply the need for auditing management, GAO’s professional

staff developed the capability to evaluate deficiencies in management—any type of management—for any activity they might encounter. They became experts in determining management deficiencies because the environment demanded it. Their knowledge, then, had to include a conceptual understanding of management and auditing management.

### Environment for Change in the 1960s

In the financial, commercial, and industrial sectors of the economy, accounting had developed from an asset-recording tool to an income-measuring tool. This income-measuring tool was then used to evaluate managerial performance. To determine income, costs were measured against revenue.

At this time no such cost-revenue tool existed in Government accounting. Nevertheless, many Government agencies, including the Department of Defense, were beginning to use advanced managerial techniques in carrying out their activities. The President issued a statement that all civilian agencies should apply these same techniques—planning, programing, and budgeting systems—in their own operations. When Government began to apply these techniques, it did not take long to decide that there was a cost-“something” relationship which could be used as a basis for determining and measuring effective performance where income was not the key criterion.

This new tool, instead of being cost-revenue, was determined to be cost-benefits. Benefits—the expected re-

<sup>4</sup> George O. May, “A Letter From George O. May,” *The Price Waterhouse Review*, Vol. V, No. 3 (Autumn 1960), pp. 33-34.

sults—for many programs were more difficult to determine than revenue for a selling organization, but they could be ascertained through the use of quantitative techniques and computers.

The cost-benefits application led to the possibility of expressing an opinion on the economic effectiveness of any type of program or system. Using cost-benefits to express an opinion on a program review could be compared somewhat to applying cost-revenue to a financial statement review. The major conceptual differences were that the technique could be applied to any type of program performance instead of just to profit performance and it went much beyond the meaning of effectiveness as applied to profit measurement. The following quote from a GAO report illustrates the application of cost-benefits to a program review on water pollution.

GAO reported that the benefits of this construction have not been as great as they could have been because many of these projects have been built on water-ways into which other major polluters—industrial or municipal—located nearby continue to discharge untreated or inadequately treated wastes.

The program has been administered for the most part using a “shotgun” approach—awarding grants on a first-come-first-served or readiness-to-proceed basis with little consideration being given to the benefits to be attained by the construction of individual waste treatment plants.

In view of the magnitude of the water pollution problem and the limited Federal funds available, GAO believed that grants should be awarded on a more systematic basis and that FWQA should give consideration to achieving interim goals, that is, providing less than secondary treatment when such treatment will result in enhancing

water quality or in attaining the State’s water quality standards.<sup>5</sup>

Other GAO reports illustrating program effectiveness studies include such areas as agricultural price supports, insecticides, combat readiness, and foreign aid. Governmental programs which can be evaluated for effectiveness, as well as for efficiency and economy, are unlimited. The same is true for business and industry. Now the common body of knowledge would have to include advanced quantitative techniques, advanced management techniques—including decision theory—and an ability to use the computer.

Other parts of the profession were also beginning to realize that management reviews could be carried out by accountants. For example, John L. Carey stated:

Perhaps most attractive are the opportunities for service to society in the broad sense. A profession skilled in the classification, analysis, and interpretation of data could be helpful in determining the financial impact of tariff negotiations on American business. It could contribute to the measurement of productivity for the purposes of collective bargaining. It could participate in efforts to devise statistics which would reveal trends of economy as a whole. It could assist in analyzing the impact of the anti-trust laws.

The opportunities available to the profession, in fact, are almost limitless.

The key word, however, is “opportunities.” To exploit them, the profession must improve itself in many ways. An examination of what has happened, and why, and how, may facilitate the determination of what yet needs to be done.<sup>6</sup>

<sup>5</sup> “Appendix to the 1970 Annual Report of the Comptroller General,” Item No. 64, p. 30.

<sup>6</sup> John L. Carey, “The Rise of the Accounting Profession” (New York, American Institute of Certified Public Accountants, 1969), p. 12.

Until the early 1970s, however, the time for this practice in the private economy was just not there. But conditions were changing. Public accountants who audited Federal grants-in-aid were being expected to do more than merely express an opinion on financial statements. They were also being required to comment on the performance of the management of the grants. Thus, the scope of their knowledge now had to be expanded to include management and management auditing.<sup>7</sup>

### Environment of the Future

I can see that the environment can provide greater challenges to accountants in the future than it did in the past and that these challenges will include a need by the accountant for a greatly expanded body of knowledge. This will be true for all accounting professionals—those in GAO, in the rest of the Federal Government, in State and local governments, in private industry, in public accounting, and in the teaching profession.

There is no question in my mind that GAO's professional staff will be provided with these opportunities. For example, the Congress held hearings in 1969 "on the capabilities of the Office to evaluate program results, or what might be simply termed as program reviews to emphasize output, the effectiveness of programs as against the more narrow review of management

efficiencies."<sup>8</sup> It also set up a Cost Accounting Standards Board, with the Comptroller General as its chairman, to determine adequate cost-accounting standards for Government contracts. These standards, undoubtedly, will affect the entire profession.

Through passed and proposed legislation, Congress can request GAO to evaluate how effective proposed programs can be, as well as how effective ongoing programs are or have been. Thus, GAO may express opinions on the effectiveness of future programs as well as on past programs. Many accountants will say to this, "Heaven forbid!"

Although these requirements will help to determine the course of GAO, consider how similar requirements will affect the course of the rest of the profession. In the past, much of the work of the military and space agencies has been done through contracts with private industrial firms. In the future, much of the work of a social nature will be done through grants-in-aid to State and local governments and private institutions. If contracting practices had any effect on the growth and development of the accounting profession, and I am sure they did, think of what effect grants-in-aid could have! Experts in Government say that grants-in-aid will rise from about \$8 billion in 1960, to \$38 billion in 1972, to \$100 billion in 1985. If this happens, three to four times the amount

<sup>7</sup> M. A. Dittenhofer, "Audit Standards Applied to the Public Sector," *The Federal Accountant*, Federal Government Accountants Association, Washington, D.C. (March 1971), pp. 35-59.

<sup>8</sup> U.S. Senate Committee on Government Operations, hearings before the Subcommittee on Executive Reorganization, "Capability of the General Accounting Office to Analyze and Audit Defense Expenditures," Sept. 16-18, 1969.



presently being expended each year on defense and space contracts will then be spent each year on grants-in-aid.

Whoever audits grants-in-aid in the future, then, in addition to auditing financial statements, must be able to make cost-benefit analyses and effectiveness, economy, and efficiency reviews. The profession at that time must require knowledge of all the subjects listed by Roy and McNeill in their "Horizons for a Profession"<sup>9</sup> and probably many more. Intergovernmental relations and social accounting undoubtedly will be needed.

If the accounting profession does not accept these challenges, some other profession undoubtedly will. One authority, according to *The Journal of Accountancy*, believes that the accounting profession may not accept. It paraphrases his beliefs as:

Dr. Gynther sees the accountant of the future as providing for "a much smaller percentage of the total information needs of society," with systems, quantitative and EDP specialists gaining substantially in importance. "The ultimate, if the trend continues (and I do not see what will stop it in the short term)," he writes, "is that the only accountants in the future will be a few bookkeepers in smaller organizations and those in public practice. The public accountants will be perceived by most members of society more as certified technicians than as professionals."

Dr. Gynther feels that the prime overall reason for the decline in the image of the accountant and accounting is "the fact that accountants have not kept up with social, economic, technological, and academic changes in the environment."<sup>10</sup>

<sup>9</sup> Roy and McNeill, "Horizons for a Profession," (New York, American Institute of Certified Public Accountants, 1967).

<sup>10</sup> *The Journal of Accountancy* (January 1971), p. 93.

But many of us are optimistic. We believe that the accounting profession will accept the challenges current conditions are creating and will take part in directing future conditions. The profession, as well as each individual member, must be creative as well as reactive to the environment. Think of the challenges—either the environment influencing the profession or the profession influencing the environment—that can readily be identified.

Think of an environment which:

- Places human values over physical and material values. We have learned how to measure and evaluate physical and material values. How do we measure and evaluate human values?
- Uses automation and electronics to do most of the physical and a great deal of the mental work we now do. How do we measure and evaluate the conditions created by automation and electronics?
- Uses organizational entities different from those with which we are now acquainted. Since entity in accounting has been such an important concept, how do we measure and evaluate the total system's result, rather than the firm's result?
- Considers benefits to all mankind more important than profits to an individual firm. How do we determine the benefits to mankind of control of water pollution, air pollution, and other ecological disturbances?
- Uses teams of specialists to measure and evaluate a total system or a major part of that system. We

have learned to work with our own specialty. How do we learn the part an accountant plays, and how he plays it, in measuring and evaluating a program which needs the understanding of many specialists?

These and many more opportunities are available to the profession. As accountants in the past were affected by—and in some cases played a major part in—the development of business, finance, commerce, government, and other institutions, so accountants in the future will be affected by—and must take a major part in—changes of whatever nature occur. Changes in such areas as economics, intergovernmental relations, behavioral sciences, society, organization, technology, and ecology, undoubtedly will directly affect the profession.

But to accept that challenge, each professional must have a basic knowledge which will allow him to be creative and to meet these challenges. Some accountants now entering the profession have this knowledge. Most of those in current practice must obtain it through continuing education.

### The Development of Professional Accountants

Let me focus my thoughts for you on the environment of accounting in the Federal Government during the 1970s. Under modern conditions a governmental accountant needs a great deal of knowledge and must know how to apply it. To show you what he currently needs to practice in the govern-

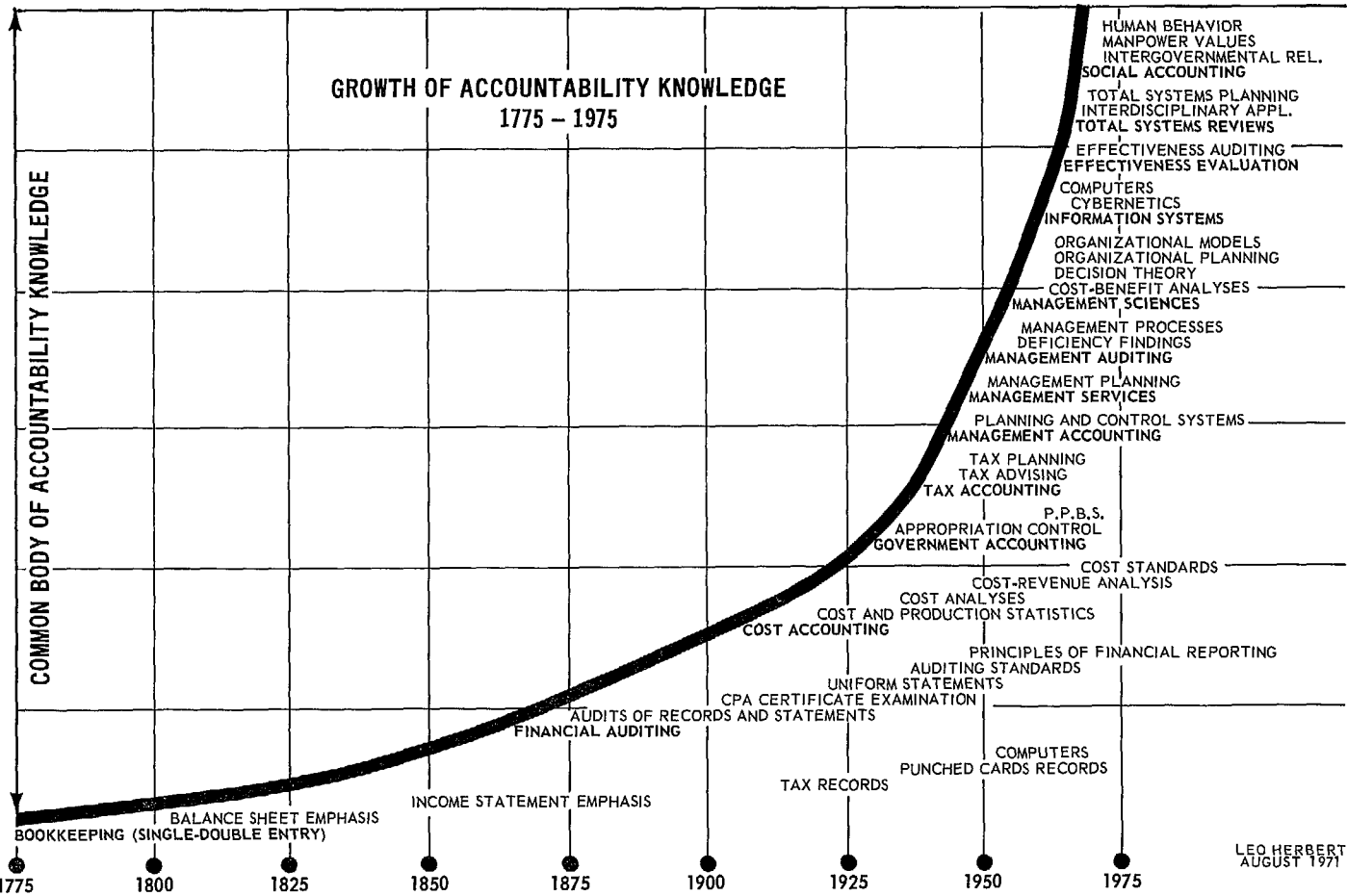
mental environment and how rapidly these needs are changing, I have presented this information from 1775 to the present time in the following chart. The current knowledge needed is staggering.

I believe it is the responsibility of colleges and universities to provide the facilities for new members of the profession to obtain this knowledge. They must also take the leadership in providing professional development for older members so they will have the same knowledge as newer members. The accountant who obtains this necessary knowledge should develop at the same time the capability to be creative and to think. You cannot do this, however, with procedural education—only with conceptual. Procedural applications will come with experience and specialization. As Roy and McNeill say:

Because of this, we have sought with invariable emphasis—perhaps even monotonously—to value conceptual understanding over procedural skill. It would be easy to require the beginning CPA to know how to calculate a standard deviation, but it is much more important for him to understand the meaning of the concept. It would be easy to require the beginning CPA to be competent in the techniques of accounting for depreciation, but it is much more important to specify that he *understands* this complex subject. Ability to apply techniques is easy to specify and as easy to test; conceptual understanding is much more elusive, both to impart and to ascertain.<sup>11</sup>

Meanwhile, most governmental agencies—Federal, State, and local—must spend a great deal of their resources on professional development for those staff members who have not been edu-

<sup>11</sup> Roy and McNeill, *op. cit.*, p. 2.



LEO HERBERT  
AUGUST 1971

cated to the same level of knowledge now being provided to those entering the profession. And they must in addition provide for the continuing development of those who now have that current knowledge. Knowledge, according to the chart, is increasing at a geometric rate. Thus, to keep up to date or not fall too far behind, sufficient time must be spent by each person on his own continuing development. It has been said repeatedly that the half-life of a person's formal education is now 10 years or less.

We have found that most of our professionals who have the education comparable to that given in the common body of knowledge study want to be creative. To keep them creative, however, each agency must provide the atmosphere for the expression of that creativity. Creativity, I believe, can be taught as easily as debits and credits. But in practice, if you suppress that creativity in a person only a few times,

he learns fast that it does not pay to be creative.

We have also found in GAO that you do not evaluate a professional staff member for evaluation's sake—as a whip over his head for past mistakes made. You must evaluate him for counseling's sake—as a means for his improvement. In our evaluation process, we are trying to find out what needs to be done for a staff member's improvement, not only what has been done wrong in the past. Past errors are used only as a means for preparing for the future.

As a final statement, I have often said to many of you that what we are doing in GAO today is what many of you will have to do tomorrow. I hope that each of us will accept the challenge that the present environment is giving us. It will take a great deal of work on the part of each of us to become prepared and stay prepared for the challenges ahead.

## Gentle Hint

Nature gave man two ears but only one tongue, which is a gentle hint that he should listen more than he talks.

*David Keith*

"The Dynamics of Organizational Behavior"

## Improved Inventory Management Through Computer Simulation

*Although operations research procedures, such as modeling and simulation, have paralleled the evolution of the computer, they are tools not commonly used by the accountant-auditor. This article briefly describes the benefits obtained from their use in solving a relatively common inventory problem. It also illustrates how these procedures can be applied to any inventories involving large quantities and substantial investments in materials or supplies.*

Although mathematical models have been known since the sixth century B.C., operations-research procedures are relatively new, having been developed only within the past 30 years. The development and use of such procedures paralleled the evolution of the computer because it became easier to solve increasingly complex operations-research problems as computer technology advanced.

During a recent evaluation these advanced procedures, combined with computer-processing capabilities,

helped us to identify optimum solutions to a highly complex inventory problem. In this instance, we wanted to predict the effect that selected changes in operating procedures could be expected to have on inventory levels maintained at the U.S. Government Printing Office (GPO). In addition, we desired to develop a model with broad application which could be used for simulating inventory operations at other agencies and which could be used for widely diverse inventory items.

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## Defining the Problem

GPO is responsible for the printing and binding work of the Congress and Government departments and agencies. To meet this responsibility it maintains and stores about 600 different paper items with an estimated value of \$8.5 million. When managing these inventories GPO is concerned with two factors—how much of each item should be ordered and when. Inventory management is further constrained by a requirement that GPO always have a supply of each item on hand to meet all needs.

To meet these needs a reorder point and a reorder quantity are established for each item. The reorder point is calculated by multiplying the average monthly usage by a month factor that varies for each item and ranges from 2 to 6. This means that the quantity on hand plus the quantity on order are not intended to fall below the equivalent of 2 months' usage for some items and 6 months' usage for others. When the reorder point for an item is reached, the quantity ordered is equal to 1 month's average usage. The average monthly usage is based on the consumption of the item for the preceding 6 months. The month factor used in these calculations is adjusted or changed on the basis of personal judgment and experience of GPO officials.

## Developing an Inventory Model

Our primary concern was developing a model capable of reliably simulating past experience which would enable the user to identify the potential

future effect of procedural changes on inventory levels. We wanted the model to test the inventory management procedures used by GPO and to provide us with answers to the following questions.

1. Could current inventory levels be reduced and still assure GPO that it would always have a supply of paper on hand?
2. Could the procedures used to calculate the reorder point, the reorder quantity, the average monthly usage, and the month factor be improved?
3. If current procedures could be improved, what changes should be made and what effect would those changes be expected to have on future inventory operations?

In attempting to answer these questions, we divided the inventory operation into three areas consistent with GPO practices: ordering, receiving (including storage), and use. We designed a model to include historical data from these three areas for each item to be simulated on the assumption that future operations would be consistent with those of prior years. This historical data was made subject to selection so that all previously experienced conditions would have an equal chance of occurring under random conditions.

## Analyzing Historical Data

GPO maintains excellent records on the date and quantity of each item purchased, the date and quantities re-

was based on a standard model that we modified to meet their inventory management practices.

For our purposes the model was modified to store historical daily usage data and to enable the user to provide the computer the following information:

1. The property number (GPO's unique identification number for each item they use).
2. The average monthly usage (the statistic currently used by GPO). (The model will calculate this statistic from this point on.)
3. The inventory on hand, including any partially undelivered orders.
4. The initial amount on order, which must be zero to start the simulation. (Thus, any quantity on order at the start of the simulation was considered to be on hand because we could not develop a delivery schedule for this quantity.)
5. The numbers of days to be simulated.
6. The data on the number of elapsed days to receive each shipment, including the time required to test it for compliance with specifications.
7. The 10 standard deviations associated with each shipment.
8. The monthly factor for the property being simulated.

This information was used by the program in the following sequence.

First, the program determined whether an order was necessary. An

order was necessary if the amount on hand plus the amount on order was equal to or less than the amount resulting from multiplying the average monthly usage by the month factor. If an order was necessary, the simulation would order an amount equal to the average monthly usage. Although this amount was added to all other amounts on order, it had to be handled separately in the simulation because a different delivery schedule had to be devised for each order.

Next, the simulation generated 10 normally distributed random numbers using the means and standard deviations previously fed into the program. These numbers were placed in a table used as a schedule of deliveries for each order. Each table was used until the total amount ordered was delivered.

Next, the simulation randomly selected a value from the list of historical usage data. This value could range from zero to the maximum amount ever used during a single day. This amount was subtracted from the inventory on hand. The remaining inventory balance was then tested to determine whether a zero balance had occurred. If such a condition occurred, the simulation was terminated and had to be restarted with new information. If a zero balance had not occurred, the model repeated the entire cycle beginning with a determination of whether an order was necessary.

The simulation continued until the total number of days to be simulated was reached. To make certain that the model operated in the intended manner, we tested it until it produced re-

sults nearly identical to GPO's actual experience with the item being simulated.

### **Using the Model to Simulate Inventory Operations**

Once the model had been validated, we began testing each element in it by holding all elements constant and varying only the one being tested. For example, when testing the procedure used to calculate the average monthly usage, we held all other elements constant and varied only the number of months used. This procedure showed that the use of an average based on 12 months' experience produced a better average than one based on 6 months' experience. GPO usually recalculated the average usage of each item every 6 months. We considered the use of the additional 6-month period to be optional with GPO.

By the continued testing of the various element and inventory policies GPO used, we found nearly optimum results could be obtained by changing only one operating procedure. In this respect, the simulation showed that inventory levels could be substantially reduced by using the inventory model to calculate the month factor instead of relying on personal judgment and experience.

### **Result of the Simulation**

We began the simulation with a month factor of 4.0 because it was the month factor GPO was using. After every 150 days of simulated inventory activity, we reduced the month factor

by 0.25 (a quantity equal to one week's usage). We continued to reduce the factor until a zero balance occurred. Since this is a condition unacceptable to GPO, we increased the month factor by 0.25 and repeated the simulation for 5 years (1,825 days). This procedure showed that a month factor of 2.25 instead of 4.0 would allow the inventory level to be substantially reduced below the 300,000 pounds currently maintained and unused without GPO's ever running out of stock. Such a reduction would represent a considerable dollar savings in unused paper inventory and in related storage and handling costs.

In addition, this simulation showed that an inventory model could be used to simulate the operations of any item, provided the necessary historical data is available for incorporation into the model. As a minimum, historical data on the quantities of inventory ordered, received, and used should be available for analysis. Where economic or other factors must be included, the model can be expanded to accommodate the additional information. Thus, once developed, a model can be used to simulate the operations of a wide variety of nonrelated inventory items.

Subsequently, the conclusions derived from this work were reported to the Public Printer. In earlier discussions GPO personnel agreed to test the model and simulation procedures in conjunction with their existing system. The results of these tests are as yet unavailable, but we believe the simulation will show the advantages of using the inventory model to calculate the month factor and the extent to which



Top Management	Systems Design Group	User
<p>Failure to:</p> <ol style="list-style-type: none"> <li>1. Present a sound statement of goals and resource availability.</li> <li>2. Develop a Master Systems Plan.</li> <li>3. Support the design effort.</li> </ol>	<p>Failure to:</p> <ol style="list-style-type: none"> <li>1. Adequately review the organizational structure.</li> <li>2. Adequately review the information requirement.</li> <li>3. Adequately evaluate the hardware and software requirements of the system.</li> <li>4. Provide a system that can be maintained.</li> <li>5. Adequately test before final implementation.</li> </ol>	<p>Failure to:</p> <ol style="list-style-type: none"> <li>1. Adequately involve himself in the design.</li> <li>2. Change.</li> </ol>

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## Can Cost Accounting Help Manage the Rising Costs of ADP Operations?

*Annual expenditures for ADP equipment and operations in the Federal Government are substantial and increasing. Managers at both policymaking and operating levels could benefit from having better cost data available to help control ADP costs. Accountants face an important challenge in developing accounting procedures for ADP facilities and operations which will provide managers with needed cost data.*

It is a well-known fact that the ever-increasing use of computers continues to affect more and more aspects of our lives. The Federal Government's use of computers is no exception. In theory, at least, computers are meant to *somehow* improve the management of programs or agencies. Sometimes we forget that the computer operations, *per se*, also need to be managed. In this article we discuss one often overlooked question—can or does cost accounting assist in managing computer operations?

Pinpointing the total annual costs of ADP operations within the Federal Government is not easy. Probably the most widely quoted figure is the one

published annually by the General Services Administration (GSA). The chart on page 47 shows GSA's reported ADP expenditures for 1960 through 1970. For fiscal year 1971, the most recent period for which data is available, GSA reported total annual operating and capital costs of about \$2.4 billion.

Although GSA's figures are widely quoted, it should be understood at the outset that the costs for a significant amount of the Government's ADP equipment are not included in this figure. For example, costs associated with the following categories of computers are not included.

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So, we pose the question: What can the accounting profession do to help manage the rising cost of ADP operations in the Government?

### Two Aspects of the Problem

Why all the confusion? Shouldn't it be a fairly simple matter to identify the annual cost of ADP operations in the Government? Not really. Succinctly stated, there does not seem to be a consensus on:

1. What constitutes ADP operations?
2. Which accounting principles and standards should be applied in capturing, recording, and summarizing cost figures?

We believe the problem has to be considered from the two closely related but separate questions raised above. The first concerns what might best be called *management visibility*, i.e., identifying the operations that should be visible to managers as ADP operations, rather than supportive elements of functional program areas, such as space projects and aviation traffic. Having agreed on what should be visible, we should embellish accepted accounting principles and standards to improve the usefulness of the cost information. We believe professional accountants can make a contribution in answering both questions—but presumably they would have more to offer on the latter.

### Management Visibility for Computer Operations

Looking first at management visibility, questions arise relating to equip-

ment, personnel, and supplies.

It would probably not be difficult to reach agreement that certain basic equipment—the central processing unit and commonly used input and output devices—is properly classifiable as ADP equipment. But many other kinds of equipment in use are not so easily classified. For example, is a special device which microfilms computer output properly referred to as ADP equipment? What about computer-like devices that are an integral part of other equipment, such as tactical weapons and space systems?

A relatively new problem which deserves a special note involves equipment used in the rapidly developing merger of telecommunications with computer systems. When computers become integrally linked with telecommunications devices, clear identification of what part of the system is ADP equipment becomes very difficult. As technological changes continue, the problem will likely become even more complex within the next few years.

Similarly, some personnel—computer operators, programmers, systems analysts—could be labeled as ADP personnel without creating much controversy. But it takes only limited research to discover many grey areas. For example, what about personnel who handwrite data which is to be subsequently used by keypunchers or the scientist who uses a computer terminal a few minutes at a time sporadically throughout the day?<sup>1</sup>

<sup>1</sup> A 1971 review by internal auditors at the Department of Commerce disclosed that of 3,151 employees principally associated with ADP operations, only about half were classified as ADP personnel under the Civil Service classification system.

Likewise, the line that should be drawn between ADP supplies and non-ADP supplies is blurred. A single example will suffice here. The Treasury Department issues millions of checks weekly that are printed on check forms specially designed for computer operations. Since checks were also issued before the advent of computers, can the check forms properly be called ADP supplies?

When the effects of rapidly changing technology are added to the vast number of ADP operational arrangements that can exist (and when their interrelationship with functional program areas is considered), it is understandable that differences in judgment exist about what should be *visible* to management as ADP operations, *per se*.

### Variations in Accounting Practices

To further confuse the picture, Federal agencies vary in their accounting practices regarding the costs for ADP operations and investments. While there may be agreement in a broad sense on accounting principles and standards, there does not seem to be a consensus within or outside the Government on what practices should be adhered to.

Theoretically, there is no real question on the proper accounting treatment for purchased hardware, although establishing a useful lifespan for such equipment can become a problem. Nevertheless, agencies do not agree on what constitutes hardware, nor are they all adhering to the same

practices. For example, some agencies capitalize the acquisition costs of disk packs and magnetic tapes, whereas other agencies treat these costs as current expenses.

The real point of controversy concerns whether to capitalize software; i.e., the programs, files, and routines necessary to make the computer functional. The differences seem to center around the following points.

1. What useful purpose is served by capitalizing software development costs?
2. On what basis is the useful life of software to be determined?
3. What principles are to be followed in differentiating between routine updating and revision (normally an expense) and substantial modification (normally a capital expenditure)?

### Accounting for Software

The most difficult problem is deciding the proper accounting treatment for costs associated with purchased or in-house-developed software.<sup>2</sup> Aside from an Internal Revenue Service ruling in 1969,<sup>3</sup> not much consideration seems to have been given to this problem. Yet, the ADP community generally believes that software costs now exceed

<sup>2</sup> Presumably, the same kind of accounting problem would not exist if software were leased; at present, however, it appears that very little software is leased.

<sup>3</sup> In summary, this ruling provides that software developed in-house may be expensed or capitalized but treatment must remain consistent. Purchased software must be capitalized and amortized over 5 years unless the taxpayer can provide a rationale for using a shorter life.

## Perspective of the CPA Review Course

*The author relates his experience as proctor of GAO's CPA review course which was conducted by Seymour A. Kaufman, CPA, expert to the Office of Personnel Management.*

"What's a proctor?" was my initial response when asked if I would like to be one for the CPA review course GAO holds every winter.

The proctor, I was told, is a GAO employee who helps coordinate and run the course. Armed with this impressive job description and my best suit, I reported to the main building for assignment to the Office of Personnel Management. After the usual introductions in the nicely carpeted offices, I found myself in a dusty supply room taking inventory of the CPA materials. Sometime after about the 10th file cabinet and the second dirty coat sleeve I began wondering what I had gotten into.

### The Beginning

During the inventory I started to understand what is actually involved in the course. There are dozens of handouts, ranging from 1 to 70 pages in length, covering every accounting

subject imaginable. It had taken 4 years of accounting in college to cover all of these topics and I found it difficult to believe we could do it again in 4 months.

Ninety people had signed up for the course which was given in a classroom built for 40. Prior experience showed that all 90 could be given permission to take the course because at least one-third would drop out along the way.

In the first week of class we went over, in 6 hours, material on partnership accounting which normally takes 6 weeks in college. We also received handouts and lectures on auditing, municipal accounting, corporations, and the Tax Adjustment Act of 1969. It only took a few classes to figure out that 16 hours a week for 4 months was not going to be a picnic. A great deal of work and dedication is needed to properly prepare for the examination.

After the first few weeks, the usual 20 to 30 people either dropped out or

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came at such infrequent intervals that the overcrowding was partially alleviated. The reasons given for dropping out of the course covered the entire spectrum of human rationalization—I was surprised how few simply admitted the course was more work than they cared to do.

For most of the students this is an opportunity to receive oral and printed information about the accounting gospel as proclaimed by the American Institute of Certified Public Accountants (AICPA). At first impression the printed handouts and planned lectures look like a standard ancient history lesson. The nearly complete dissection of each phase of accounting and the seemingly canned responses to most questions would lead some to believe the same lecture has been given for years. However, the constantly changing Statements on Auditing Procedure and Opinions of the Accounting Principles Board makes continual revision of the course necessary. A good CPA review course must be revised after each examination to reflect changes in emphasis or coverage. In fact, the fastest way to get new ideas into the accounting literature is to have them appear on the CPA exam.

### Direction of the Course

In our course the printed material is merely a basic guide. The presentation and emphasis given to the material must be based upon the current thinking of the AICPA. For example, taxes are taught with an emphasis toward a broad range of multiple-choice questions because this is what has ap-

peared on the examination in recent years. The past practice of giving one long and involved tax problem has apparently changed. The need to know the mechanics of working an involved tax problem has been replaced by the need to be able to answer many specific questions on the whole spectrum of the Internal Revenue Code. Obviously, a candidate who understands not only the subject matter asked, but also how that material is asked, is better prepared to take the examination than a candidate who has studied only the subject matter.

The proctor has an opportunity to see firsthand the activity and thinking which take place outside the classroom. One of the basic philosophies behind the course is to teach the candidates how to respond to the questions on the CPA examination. Naturally the examiners must be presented with the information they want to hear, and there are times when practical applications of a subject must yield to the theoretically based examination. The course is designed to supplement practical accounting experience with information about the principles and opinions of the AICPA.

### The Handouts

The printed handouts the students receive are informative, compact presentations of the particular subject being studied. However, the students reading these handouts probably do not appreciate the work that has gone into them. The handouts must be more than just reproduced pages of a text-

FRANKLIN A. CURTIS  
Assistant Regional Manager—Detroit  
Field Operations Division

In recognition of a career with the General Accounting Office marked by outstanding initiative, creativity, and leadership in positions of progressive complexity and by superior competence in promoting the development of our professional staff.

FRANCIS X. FEE  
Supervisory Auditor  
Resources and Economic Development Division

In recognition of a career marked by his outstanding dedication to accomplishing the mission of the General Accounting Office, his superior competence and innovativeness in performing a number of complex assignments including reviews in the area of Federal highway construction and related matters, and his continuing concern for improving his professional skill.

ARLEY F. FRANKLIN  
Supervisory Auditor  
International Division

In recognition of superior career attainment with the General Accounting Office marked by notable dedication and achievement in the conduct of reviews in the international sector, particularly special congressional requests, and for his continued dedication to advanced professional development.

DAVID A. HANNA  
Assistant Regional Manager—Chicago  
Field Operations Division

In recognition of a progressive career with the General Accounting Office marked by exceptional enthusiasm and dedication in developing special technical expertise to carry out program objectives and by his abiding concern for the professional development of his staff.

DAVID L. JONES  
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Resources and Economic Development Division

In recognition of his thorough dedication to a career with the General Accounting Office exemplified by creative group leadership and superior competence in a variety of diverse assignments and by energetic participation in recruitment, training, and professional staff development.

JOHN LANDICHO  
Assistant Director  
Logistics and Communications Division

In recognition of his outstanding career with the General Accounting Office marked by superior organizational, administrative, and supervisory ability evidenced in the results of diversified reviews of supply management programs and by his abiding concern for advanced professional development.

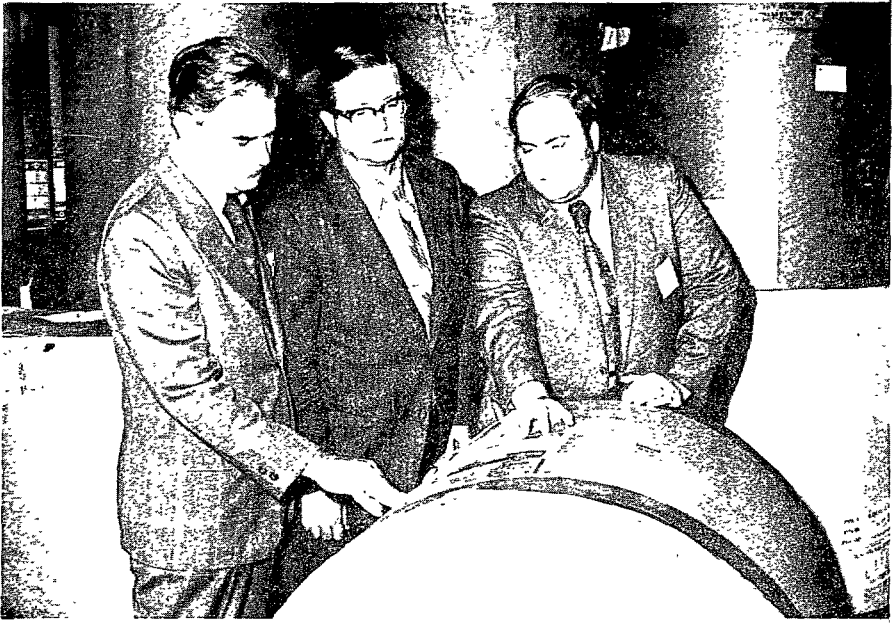
DANIEL L. MC CAFFERTY  
Supervisory Auditor—Cincinnati  
Field Operations Division

In recognition of his career with the General Accounting Office exemplified by creative group leadership and superior competence in developing and coordinating professional staff development activities for the Cincinnati regional office and by his dedication to personal development and participation in professional activities.

HOWARD R. MANNING  
Supervisory Auditor  
Logistics and Communications Division

In recognition of his career development with the General Accounting Office marked by exceptional initiative in gaining broad functional experience, in accomplishing ongoing program responsibilities, and in pursuing advanced development in the field of financial management.





*The authors (left to right) Mitchell Morris, Clarence Smith, and Mark Polsky examine a part of the paper inventory of the Government Printing Office.*

GPO Photo

ceived, the time required to test and to accept each shipment, and the date and quantities used to execute printing orders. This information was available for several previous years. Thus, trends or patterns of ordering, receiving, storing, and use could be readily determined, provided we could use some means of manipulating the large volume of data.

This large volume of historical data indicated that our analysis would require the aid of a computer. The development of the model can best be illustrated by describing the procedures we applied to a single item, white writing paper. However, it should be noted that the model can be used for any of the 600 items used by GPO.

Detailed daily inventory listings of the amount of paper consumed in exe-

cuting printing orders served as the starting point. In this instance, the amounts used ranged from zero sheets to more than 402,000 sheets. We accumulated this data for the previous 3 years (1,095 days). We considered a 3-year period sufficient for identifying inventory trends and patterns for the item being simulated. The inventory model first summarized the daily information into monthly data and used the monthly data to calculate the average monthly usage of the item. The daily data was also used during the simulation of the inventory operations. We considered it necessary to simulate the inventory operations on a daily basis because of the wide range of paper used (0-402,000 sheets).

The pattern of deliveries presented an entirely different set of conditions

that had to be recognized in developing the model. Although purchase orders specified the quantities and the dates on which those quantities were to be delivered, suppliers shipped in carload lots which equaled about 10 percent of each order. For example, the first 10 percent of an order could be received anytime between the 28th and the 70th day after the purchase order date, although the average time required was 49 days. Using the previous 3 years' experience, we calculated the standard deviation for every shipment received. We considered the experience of the previous 3 years sufficient for us to assume a normal distribution (bell-shaped curve) of the arithmetic means (the average number of days required to receive each shipment). This assumption was based on the theory that arithmetic means tend to be normally distributed as the number of examples increases (the Central Limit Theorem). This information is shown in the following chart and was included in our model.

**Analysis of Deliveries of  
White Writing Paper**

<i>Percent of order received</i>	<i>Days required to receive each increment</i>	
	<i>Mean</i>	<i>Standard deviation</i>
10	49	21
20	51	25
30	54	24
40	57	24
50	62	22
60	66	26
70	68	27
80	71	28
90	72	28
100	76	29

Since the quantities shipped by the supplier and the date of delivery for each 10-percent increment were beyond the control of GPO, we included these conditions in our model.

In addition, the date on which a shipment was received was not the date it was available for use. After a shipment was received it had to be tested for compliance with GPO specifications. The results of these tests were used to accept or reject the shipment. The timelag between the date on which a shipment was received and the date on which it was accepted and made available for use averaged about 15 days. We also included this information in the model.

For the item being simulated the month factor GPO used was 4.0. This meant that when the quantity of white writing paper on hand and on order equaled 4.0 times the average monthly usage, an order was placed with the supplier for a quantity equal to 1 month's average usage. This factor was also included in the model.

To help us identify any trends and patterns, we prepared a graph showing the daily activity for the preceding 3 years. This graph showed that the inventory level for white writing paper never fell below 300,000 pounds (1,500,000 sheets) for the year. Another important use of the graph was to validate the inventory model. By keeping all factors constant we validated the model by having it produce results nearly identical to the actual experience of the preceding 3 years.

**Preparing the Computer Programs**

The inventory model used at GPO

inventory operations can be improved by reducing inventory levels without running out of stock.

### Summary

The use of inventory modeling and simulation procedures provides the accountant-auditor with an opportunity to make detailed analysis of inventory operations that could not be made by other means. These procedures allow him to predict the effect that changes in policy and procedure can reasonably be expected to have on future operations. They also enable

him to place substantial confidence in the results of the simulation and to identify optimum solution(s) to highly complex inventory problems. It also provides management with the flexibility to anticipate unusual situations by altering the simulation results.

For those interested in more details, the Financial and General Management Studies Division plans to issue a case study on developing and using this model. Hopefully, the benefits achieved by developing this model will encourage greater use of these procedures in our future audit work.

## Procrastination

One of the disadvantages that flow from procrastination in the business and professional world is that of missed opportunity for building a good reputation. One gets scant credit for a desirable action if it is taken only after one's arm has been twisted.

*Leonard M. Savoie*

Executive Vice President, AICPA  
*The CPA*, June 1972

92/578

# The Problems of Management Information Systems: Why They Fail

*Major failures of top management, systems design groups, and users have caused management information systems to fall far short of their expected benefits.*

The development of a management information system is a long and costly undertaking. Problems occur despite careful planning. The technical risks are high and the management risks are significant.

Much has been written on the development of management information systems, yet systems design efforts continue to fail or fall far short of the users' expectations. Why? Simply because the systems do not provide the proper information, at the proper time, to the proper individuals.

These failures can be attributed to three major groups—top management, the systems design group, and the intended users. This article discusses common failings of these groups with the hope that the ideas presented will be of assistance in the design of management information systems.

## Top Management

Before any analysis of the design of a management information system begins, top management should define its specific goals for the system and provide a realistic statement of the kind of system necessary to produce the reports it desires. This statement should provide a quantitative evaluation of the resources which are presently available and which could practicably be made available during and after the systems design.

## Statement of Goals and Resources

Many management information systems fail because the systems design group proceeds with its work and then finds that what it has designed neither alleviates the problems defined by top

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Mr. Stout is a supervisory systems accountant in the Financial and General Management Studies Division. He recently returned to the General Accounting Office from the Department of Agriculture. He holds a B.S. degree from Bloomsberg State College and an M.S.A. degree from The George Washington University.

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management nor accomplishes the goals expected.

Another reason systems fail is that, without a realistic statement of available resources (men, money, and material) which can be devoted to the system both during the design and after implementation, the systems design group may provide such a sophisticated system that the organization's resources can not support it.

The statement of goals and resources should not be considered sacred. Deviations from the basic statement may be necessary. However, gross deviations must be discussed and approved by top management.

#### **Master Systems Plan**

Management information systems must be developed as extensions of what is currently going on in the organization. They must be developed and controlled in manageable segments, i.e., in segments of such a size that the work and costs can be realistically estimated, forecast, and controlled.

In organizations where data processing systems have been allowed to evolve in reaction to pressures of the moment, there frequently is no compatibility between the data in one segment and the data in another segment. One way to avoid this incompatibility is the development of a master plan.

The Master Systems Plan is a plan, not the specifications for the systems design. Its purpose is twofold: it tells the systems manager which segment of the management information system should be worked on next, and it describes the interrelationship of the seg-

ments which are currently operational, are being implemented, or have been planned.

On the basis of this information, the systems design group can proceed to design a management information system which has a high degree of compatibility and a durable life and is almost totally devoid of redundancy. Furthermore, the systems group can concentrate its efforts with confidence since the Master Systems Plan provides for objective evaluation of system priorities and is not readily disrupted by temporary operative problems, personal preferences, or political pressures from outside management.

The system's segments do not necessarily need to be integrated at the time of implementation. By providing for compatibility in the design, channels of intercommunication between each segment of the system can be activated or added without disturbing the basic structure of any of the segments of the systems involved when the time and conditions are right. In this way the systems design group can be assured that as new segments of the systems are developed they will not make each other obsolete but will function together effectively as a unified system.

#### **Support of the Design Effort**

Top management must make a commitment to support the design effort—not only in the traditional sense of providing men, money, and material, but also through supporting the systems concept. Only through its continued support can major conflicts between operating management and the

systems design group be alleviated. Policy decisions regarding centralization, decentralization, reporting levels, etc., must be made promptly and in a manner consistent with the objectives of the system. Many management information systems die waiting for top-level decisions.

### **The Systems Group**

Decisionmaking is the most critical process which takes place in any organization. It is of primary importance to the systems design group to identify those individuals who make the decisions, their levels in the organization, the nature of the problems they face, and the scope of their decisionmaking authority. The systems design group must devise ways to provide adequate information about these problems to the appropriate levels. What could be worse than for a management information system to be designed to provide comprehensive, timely, and accurate data to the wrong people?

### **Organizational Structure**

During its review, the systems design group must be sure to evaluate both the informal as well as the formal structure of the organization. Many organizations operate through informal lines of communication which are not reflected in the formal organization chart.

The levels of planning, executing, and controlling take shape based on the systems design group's evaluation of the organizational structure, and without this understanding the systems

design group cannot properly perform its next task—defining the information requirements.

### **Information Requirements**

For management to make sound decisions it must have the needed information. This information must be accurate, timely, and presented in a fashion which management can readily understand and use. In short, information requirements need to be considered and oriented to the user.

The systems group must define the data elements which can be combined to make the information required by management. Structuring the elements into files so that they can be formulated into adequate reporting formats is critical to the success of the system.

How does the systems design group establish the information requirements of management? Basically, by asking the users, telling the users, and responding to external requirements, e.g., legal restraints. All of these methods can and should be applied in varying degrees depending on the circumstances involved.

### **Hardware and Software Requirements**

A major issue which will confront the systems design group not long after it begins work will be the determination of the hardware and software requirements to make the system operational. Decisions on information timeliness and on whether the system should be decentralized or centralized give rise to questions on terminals, real-time, batch processing, and many

others. If a systems design is to provide immediate response information for inventory control, the hardware and software must be developed to provide such capability. Otherwise, the objectives of the system have not been accomplished.

### **Systems Maintenance**

Who wants a management information system that can't be maintained once it has been designed? No system, no matter how ingeniously conceived, is of any use to anyone if it cannot be maintained effectively. The systems design group must be continually aware of the educational and reeducational processes that must take place among those who will use and operate the system. This process must start early in the design and continue throughout the life of the system.

The systems group should focus as much attention on the individuals who provide input as they do on those who use the output. Failure to do this can result in (1) the system becoming unworkable because too much input is required and (2) those who provide the input becoming overworked and indifferent to the requirements of timeliness and accuracy. The use of source data automation has provided a partial solution to this problem.

Documentation of the system also falls into this category of systems maintenance. The systems design group must be sure that they have adequately documented all phases of the systems design. Experience has proven a high rate of turnover of systems analysts, programmers, and other members

of the systems design group. Bugs will plague the system during its infancy. Disagreements on the outputs of the system will occur. Documentation provides the basis for solution of these and other problems.

Developing up-to-date systems manuals, handbooks, program specifications, and other forms of documentation is critical to the success of the design effort.

### **Testing**

Failure to properly test the subsystems, using techniques such as pilots, parallel runs, and benchmarks, has been the downfall of many management information systems. Management's confidence is destroyed when it receives invalid reports and thus information systems lose their potential usefulness.

Another important factor which is often neglected and has caused management information systems to fail is provision for a specific fallback and recovery in the event of immediate failure of the primary system. Managers can develop a high degree of reliance upon the routine operation of the system and not be able to continue operation. Therefore, fallback records and procedures must be available and should be tested as thoroughly as the primary system. No matter how ingeniously designed and tested, bugs will crop up and recovery procedures must be available.

### **The User**

One of the biggest failures of the

users of management information is that they fail to involve themselves in the design phases. The management information system is there to serve the users and their involvement in planning for its output is critical. Many systems have failed because the users have stated, "Let the experts take care of that." Many times the systems design groups are not the experts.

### Change

Once each subsystem—and eventually the entire management information system—is placed in use, its acceptance and future are determined solely by the users. The users' attitudes regarding the system and the attention and effort devoted to its maintenance will have a profound impact on its effectiveness.

The users are faced principally with the familiar problem of introducing change into an organization. This must be as carefully planned as the design and testing portions of the project.

Training and motivation are required, as discussed before, for the managers. This means the managers must acquire new habits and patterns of behavior. Their reaction to events will change, as will some of their interpersonal contacts.

Besides achieving an understanding of the system, the managers must, upon understanding and acceptance, be willing to eliminate old systems once the new system has proven itself. If this is not done, parallel operations will take place resulting in conflicting

and inconsistent information at the top levels. Enthusiasm for the new system will drop off, causing a breakdown in the validity of input. Eliminating old systems is extremely difficult, since it often means that some jobs and even some organizations should also be eliminated. The best procedure is for management to make a commitment to the new system at the proper time and make internal adjustments quickly. If done skillfully, internal adjustments can benefit all. Failure to bring about this change properly can lead to deep-rooted resistance—resistance that can destroy the benefits of the management information system.

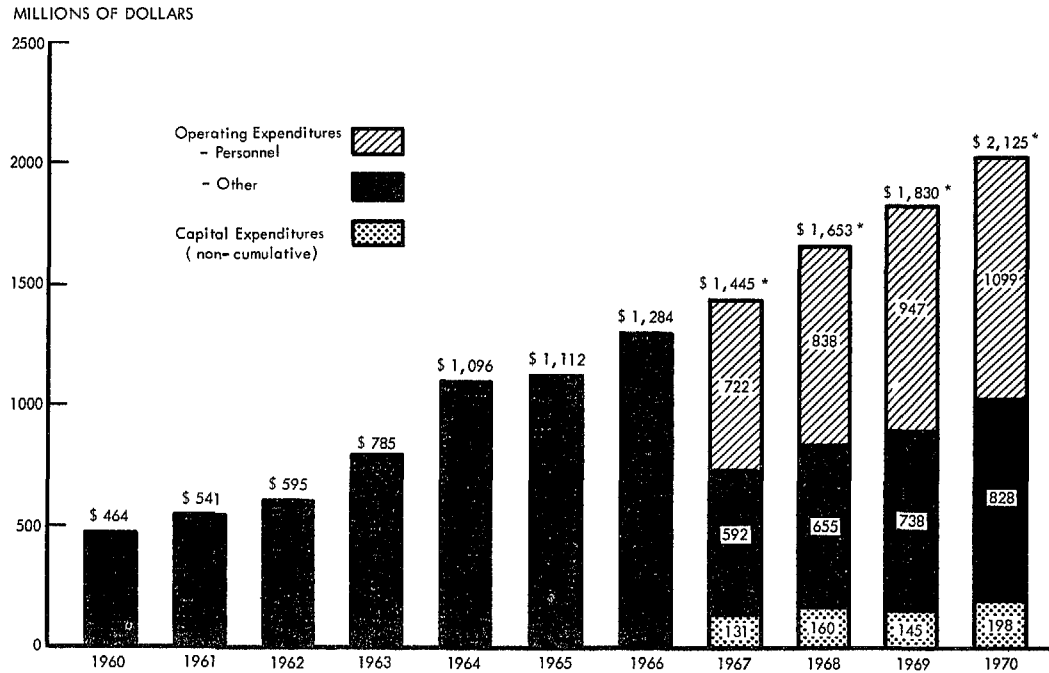
### Summary

Management information systems must be achieved through planned evolutionary development rather than swift and sudden change. It is easy to generate enthusiasm about ambitious projects, but too often the risks encountered eliminate most of the anticipated benefits. The greatest risk of all is the introduction of change into an organization. In addition to careful planning, successful evolutionary development of a system requires a great deal of involvement, patience, and restraint on the part of the individuals in the organization.

The following chart summarizes, by major groups, the failures which cause and will continue to cause management information systems design efforts to fail.



## ANNUAL ADP EXPENDITURES: FISCAL YEARS 1960 – 1970 AS REPORTED BY GSA



\*Excludes costs of computers used for control purposes and computers installed in classified physical locations, although such computers are included in the inventory count. The ADP expenditures shown for fiscal years 1967, 1968, and 1969 are adjustments of previously published figures. These adjustments reflect results of actions initiated during the respective current fiscal year but subsequently finalized as changes to original plans.

Source: GSA's "Summary on ADP Activities on Cost, Manpower, Utilization," fiscal year 1970.

- ADP equipment used in weapons and space systems and specially built or modified for the Government's needs.
- ADP equipment financed by the Federal Government under various grant-in-aid programs.
- Most ADP equipment used by Government contractors.

### Joint Economic Committee Hearings

In the July 1970 hearings before the Joint Economic Committee, total annual ADP costs within the Government received considerable attention. Early in the hearings, the Chairman expressed considerable concern over the fact that no one present could provide him with an estimate closer than "\$4 to \$6 billion"!

\* \* \* We ought to have some notion whether it is \$4, \$4½, \$5, or \$5½ billion—what is it? As a matter of fact, we ought to know it to the nearest hundred million. Now we don't even know it to the nearest billion \* \* \*.

Later in these same hearings, an official of the Office of Management and Budget acknowledged that the amount spent annually for ADP equipment and operations could even be as high as \$10 billion if *all* computers used for any purpose by the Government and its contractors were to be considered. The hearings closed without the Committee's having been provided a more precise figure for annual ADP costs.

As a result of these hearings, the Subcommittee on Priorities and Economy in the Government of the Joint Economic Committee, in a report dated

May 21, 1971, asked the General Accounting Office to develop its own "independent estimate" of total annual ADP costs in the Government. This challenging task is now being performed under the direction of the Financial and General Management Studies Division, and the San Francisco regional office has primary responsibility for fieldwork.

### Similar Concerns Expressed Elsewhere

Other interested parties, such as the Office of the Secretary of Defense, the General Services Administration, the Office of Management and Budget, and other members of Congress have expressed concern similar to that of the Chairman of the Joint Economic Committee. Even though the review for the Joint Economic Committee is still underway, GAO has received another congressional inquiry about the total cost of ADP operations in the Government.

### ADP Costs Continue to Rise

Despite all the confusion, one thing seems clear. The costs of ADP operations in the Federal Government have been rising significantly and will likely continue to rise in the future.

We, as professional accountants, face the challenge of deciding what contribution our profession can make toward better management of the Government's operations. In a time when almost every profession and organization seems to be the target of revolutionary or evolutionary forces, we too must be open to challenge and change.

those for hardware. It is also widely acknowledged that software systems are designed for use over several years. Yet, most software costs within the Federal Government are being treated as current expenses. With apparently few exceptions, the only software costs being capitalized are those included in the original purchase price of the computer.

#### **Matching Costs and Benefits**

If the revenues of a revenue-producing Government activity are to be matched with expenses and if the costs and benefits of Government programs are going to be meaningfully compared, it seems essential that computer software costs be capitalized and amortized over the useful life of the software. Through capitalization and amortization the development costs of major software systems can not only be made visible as ADP costs but can be properly charged as a period cost to the appropriate program or activity. Accordingly, we believe that capitalization of software has considerable merit.

#### **Why the Concern Over ADP Operations?**

When the differing definitions of ADP operations are coupled with the lack of uniformity in accounting practices, it is questionable what any one figure which allegedly represents the annual costs of ADP operations can mean.

It could be argued that there are other new developments aside from the

impact of ADP operations which have also affected the Government's operations. Why, then, should there be so much concern about ADP operations and their associated costs? Are there not other new developments which deserve the same attention?

Our answer to these questions is:

- No other single development has had the same unique and wide-spread impact that ADP operations have.
- The technology surrounding ADP operations is changing at an astounding rate.
- ADP operations, in and of themselves, are very costly and thus, management should be greatly concerned with these costs.

#### **Concluding Remarks**

An appropriate cost accounting system can and should be an effective means for managing the rising costs of ADP operations in the Government. If ADP costs could be identified in a reasonably complete and uniform manner—by meaningful subcategories and by relationship to benefits achieved—Government managers would then be in a better position to make decisions regarding the initiation, modification, or curtailment of ADP operations. If meaningful cost accounting systems for ADP operations are to become realities, much remains to be done.

The traditional accounting discipline does not offer much help in solving the *management visibility* dilemma. However, an accountant who educates himself to an ADP environment should

be in a better position to evaluate decisions about what should be made *visible* as ADP operations. Therefore, the Government's professional accountants have a continuing responsibility to better inform themselves of rapidly changing ADP trends and developments.

Designers of cost accounting systems for ADP operations should give some thought to how the benefits achieved by computerizing operations can be identified. The ideal system for managing ADP operations should relate specific kinds of ADP costs to specific benefits achieved directly because of ADP equipment. It may be overly optimistic to believe that either management scientists or accountants can achieve this ideal on a widespread basis very soon, but this kind of thinking should underlie efforts to improve methods of identifying ADP costs.

GAO has taken a first step toward solving this problem. GAO has, of course, prescribed general accounting principles and standards which pro-

vide a basic framework for accounting within the Federal Government. However, GAO has recognized that further guidance on these principles and standards, as they relate *specifically* to ADP operations, is needed. Accordingly, with the cooperation of the National Academy of Sciences, GAO is currently working on a project to develop just this kind of more specific guidance. In carrying out this project, GAO will be communicating with professional accountants, managers, and representatives of other disciplines both within and outside the Government. The Government's accountants and the professional accounting societies can be in a better position to assist GAO if they direct more attention to the discussion and study of cost accounting systems for ADP.

To assist GAO in this complex project, we would like to openly solicit readers' reactions to these ideas. Any comments should be directed to the director, Financial and General Management Studies Division.

book. Three main procedures are used to prepare them.

First, there must be a basic presentation of the subject. All the various methods of presentation are reviewed to determine which will give the student the fundamentals in the shortest possible time. Sometimes a method is either altered or combined with another method to achieve a more useful presentation.

Second, recent CPA examinations, related articles, and all other publications of the AICPA are studied to determine the current thinking of the Institute and any trends that are appearing. This information is used both to update and improve the teaching and to alert the students to the kinds of questions they will probably face in the examination.

Finally, the handout must integrate the first two procedures. The student must be able to apply the basic principles of a subject in a way that will net him the best answer to the examination questions. This may require combining several conventional approaches to a problem or, when nothing else seems to fit, devising a new method of working a problem.

Our course material is supplemented by two booklets published by GAO. The "Outline of Opinions of the Accounting Principles Board" and "Outline of Statements on Auditing Standards and Procedures" and the related quizzers are invaluable to CPA candidates. These condensed, easy-to-understand booklets summarize the pronouncements of the AICPA.

## Physical Training

In an endeavor to provide a well-rounded assignment, the proctor is given the opportunity to prepare for the examination physically as well as mentally. Couched in my job description—so I was told—is an authorization for the proctor to take care of the air conditioning, set up the microphone and speaker, and move tables and chairs for each class.

## The Visit

The GAO course also offers its CPA candidates a little something extra most candidates don't get a chance to hear. This year Daniel L. Sweeney, director of examinations for the AICPA, spoke to the class on April 15. Although he did not bring a sample May 1972 exam, as many of us had hoped, Mr. Sweeney did offer some insight into the thinking process used to prepare the examination. Theoretically, each question is designed to test three degrees of the candidate's knowledge. Approximately 40 percent of each question tests basic knowledge; another 40 percent tests the candidate's working knowledge of the subject; and the last 20 percent usually requires an expert knowledge of the field. He stated that although this goal cannot be precisely met in every question, the purpose is to give the candidate with a good working knowledge of the subject a chance to pass and to provide the candidate possessing an expert knowledge in some areas an opportunity to accumulate extra credit as a

reserve to offset those areas in which he is not so knowledgeable.

Mr. Sweeney also unveiled a new approach the AICPA will use in preparing its information booklet for CPA candidates, which is distributed to everyone sitting for the examination. Within the next year the AICPA will attempt to incorporate into this booklet the relative weight or importance the candidates should give to the various topics included in the examination. For example, the increased emphasis on footnotes may rate 20 percent, but a less important topic, such as partnership liquidation, may rate only 5 percent. (These figures are for illustration only and are not indications of fact.) As a candidate I feel this approach will be extremely helpful. After studying the basic accounting principles the candidate will be able to concentrate on the most important areas of accounting as viewed by the AICPA. This is also a method the Institute can use to encourage candidates to keep abreast of the current trends in accounting.

There was one area of discussion, however, where Mr. Sweeney was, as expected, uninformative. He was asked if he would indicate in which direction we should point our studying for the May examination. He started out by saying that taxes were always a good thing to study. He also mentioned law, basic accounting theory, and auditing. Knowing how to work some fundamental practice problems was also cited as being helpful. My only question was, "What's left?"

Mr. Sweeney's explanation of what the problems are trying to measure,

the fairness of the grading system, and the general thinking behind the examination was a definite help to the candidates. He helped put the examination into perspective, replacing some of its mystiques with warm humanism.

## The End

Although I did not know what to expect in the beginning, my assignment as proctor proved to be valuable and interesting. It gave me time to study, a chance to meet interesting people, and a different perspective of the examination than I had previously. As proctor I also got a new view of GAO. I was able to see GAO, from a broader outlook, as a single organization, rather than as many separate auditing divisions. Of course, this job also meant staying at GAO until 10 p.m. 3 nights a week and cracking up my car one Saturday after class—I had to take the bitter with the sweet.

What benefit does GAO receive from this course, since it is for individual achievement? Any gain for an individual in GAO is a gain for all GAO. Anyone who sticks with the course and passes the examination demonstrates the drive and determination necessary to attain a personal and professional goal. Since current accounting practice is involved in the examination, GAO helps to give these employees the latest accounting thinking to use in their audits. The individuals are provided with an opportunity to advance professionally and gain personal satisfaction, while GAO benefits through the upgrading of its professional staff.

# GAO Honor and Service Awards 1972

The sixth annual GAO honor awards ceremony was held in the GAO auditorium on June 19, 1972. The Comptroller General, *Elmer B. Staats*, the Deputy Comptroller General, *Robert F. Keller*, and the director, Office of Personnel Management, *Leo Herbert*, presented the following awards:

GAO Award for Public Service  
Comptroller General's Award  
Career Development Award  
Distinguished Service Award  
Meritorious Service Award  
GAO Award for Best Articles  
Published in *The GAO Review*  
Special Educational Award

The presentations were preceded by remarks by the Honorable Charles McC. Mathias, Jr., Senator from Maryland. Senator Mathias' remarks appear in this issue of the *Review* beginning on page 75.

Recipients of awards and related citations follow.

## GAO Award for Public Service

To recognize a private individual who has made a distinguished contribution to furthering the mission of the General Accounting Office.

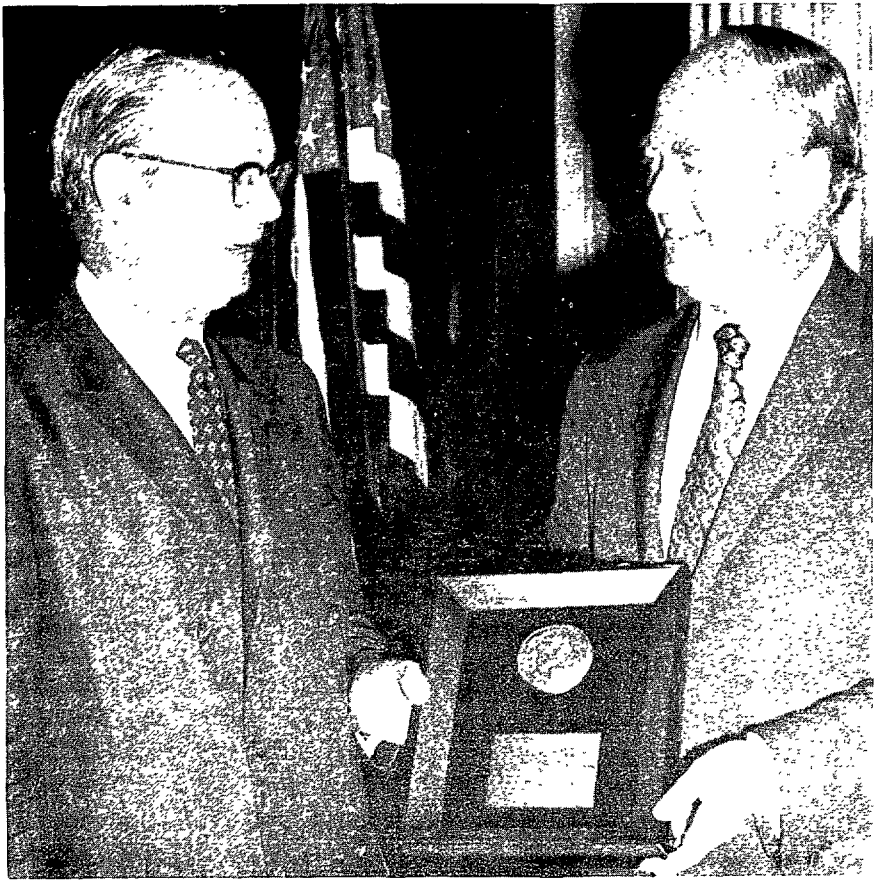
HERMAN W. BEVIS, CPA  
Executive Director  
Banking and Securities Industry Committee

For furthering the mission of the General Accounting Office through his generous counsel and advice to the Comptroller General of the United States.

As a distinguished figure in the public accounting field, Herman W. Bevis has dedicated a lifetime to the development of the profession as a worldwide hallmark of integrity and reliability.

Nearly 40 years ago he joined the firm of Price Waterhouse & Co. in New York and served with distinction until his retirement in 1969. He was elected a partner in 1946, became a member of the executive committee in 1958, and was made senior partner in 1961.

Throughout, he has been intimately concerned and involved in the development of the profession. From this concern he has generously rendered counsel and advice to the Comptroller General in a period of great growth and innovation, and he has made a distinctive contribution to the General Accounting Office and to the Cost Accounting Standards Board.



GAO Watchdog Photo

*Herman W. Bevis (left), CPA, Executive Director, Banking and Securities Industry Committee, and consultant to the Comptroller General, receives GAO Award for Public Service from Elmer B. Staats, Comptroller General.*



## Comptroller General's Award

To recognize an employee whose exceptional contributions to the mission of the General Accounting Office warrant acknowledgment of the highest order.

JOHN E. THORNTON  
Director  
Field Operations Division

For his demonstrated excellence and selfless dedication during almost 37 years of Government service and for his many contributions to the work of the GAO as director, Field Operations Division. His career is exemplary of the finest qualities of the public service.

Mr. Thornton has rendered valuable service to the GAO in many locations in the field. Since his return in 1954 to Washington headquarters, he has made lasting contributions to the efficient and effective management of the Field Operations Division. During a period of a changing role for the GAO, he initiated imaginative and effective solutions to many management problems.

His greatest achievement, however, is his outstanding leadership of the Field Operations Division. No one has better earned the appreciation and esteem of his colleagues both in Washington and the field.

## Career Development Award

To recognize employees who by their efforts in developing their careers have contributed so significantly to the public service as to warrant special recognition.

DEAN K. CROWTHER  
Deputy Director  
Manpower and Welfare Division

In recognition of his outstanding performance and dedication in developing a career in the public service that has contributed notably to elevating the professional standards of GAO work and to increasing staff motivation.

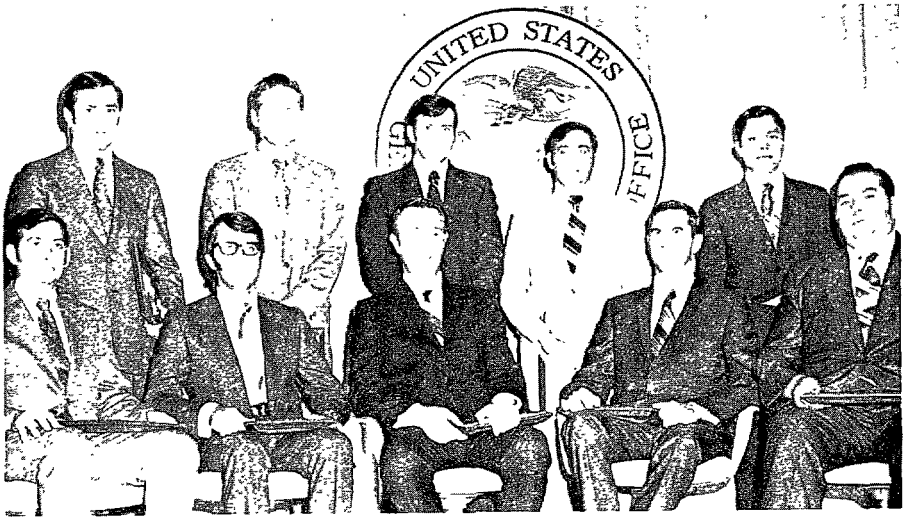


GAO Watchdog Photo

*John E. Thornton (left), director, Field Operations Division, receives Comptroller General's Award from Comptroller General Elmer B. Staats.*

**MAURICE S. MOODY**  
 Supervisory Auditor  
 Manpower and Welfare Division

In recognition of his notable career development with the General Accounting Office marked by a high degree of professional skill and dedication in the execution of review programs of a highly technical nature among the civil agencies.



GAO Watchdog Photo

*Career Development Award. Seated, from the left: Howard R. Manning, supervisory auditor, Logistics and Communications Division; Arley F. Franklin, supervisory auditor, International Division; Dean K. Crowther, deputy director, Manpower and Welfare Division; David A. Hanna, assistant regional manager, Chicago; and Franklin A. Curtis, assistant regional manager, Detroit. Standing, from the left: Maurice S. Moody, supervisory auditor, Manpower and Welfare Division; Daniel L. McCafferty, supervisory auditor, Cincinnati; Francis X. Fee, supervisory auditor, Resources and Economic Development Division; David L. Jones, supervisory auditor, Resources and Economic Development Division; and John Landicho, assistant director, Logistics and Communications Division.*

## Distinguished Service Award

To recognize employees for their long and distinguished service with the General Accounting Office marked by their sustained high quality performance and exceptional efficiency.

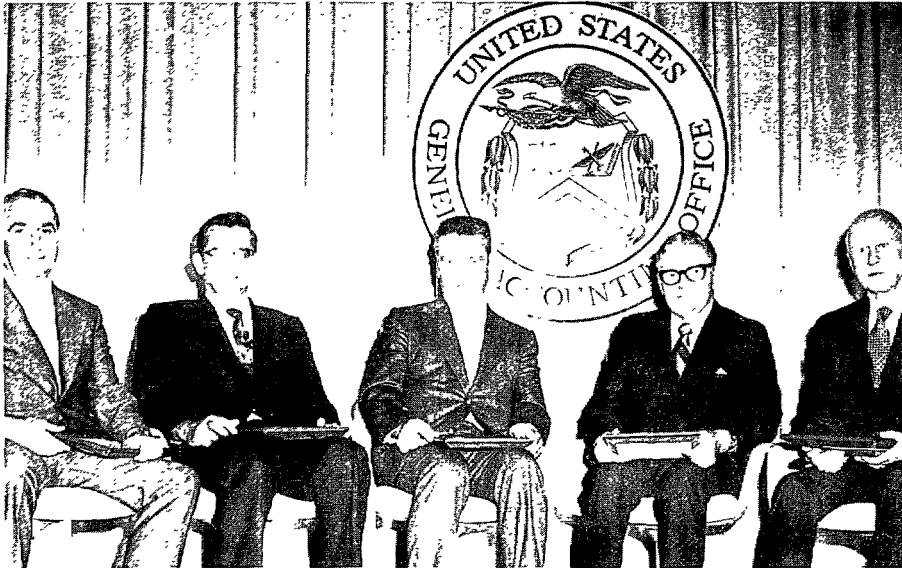
**GREGORY J. AHART**  
Director  
Manpower and Welfare Division

**THOMAS E. SULLIVAN**  
Director  
Transportation and Claims  
Division

**OYE V. STOVALL**  
Director  
International Division

**ALLEN R. VOSS**  
Director  
Office of Policy

**KENNETH L. WEARY, JR.**  
Regional Manager, Kansas City  
Field Operations Division



GAO Watchdog Photo

*Distinguished Service Award. From the left: Kenneth L. Weary, Jr., regional manager, Kansas City; Allen R. Voss, director, Office of Policy; Gregory J. Ahart, director, Manpower and Welfare Division; Thomas E. Sullivan, director, Transportation and Claims Division; and Oye V. Stovall, director, International Division.*

## Meritorious Service Award

To recognize individual employees or groups for their superior performance, far above that ordinarily expected.

*Office of the General Counsel*

Sadye J. Davis

*Field Operations Division*

Jimmy W. Mayberry—Dallas

Kurt R. Sjoberg—San Francisco

*International Division*

Herman H. Velasquez

Foy D. Wicker

*Manpower and Welfare Division*

John D. Heller

*Resources and Economic*

*Development Division*

B. Douglas Hogan

*Office of Personnel Management*

John J. McGrath

Jack L. Mertz

*Financial and General Management*

*Studies Division*

Herman B. Galvin

Frankie L. Schlender

*Logistics and Communications*  
*Division*

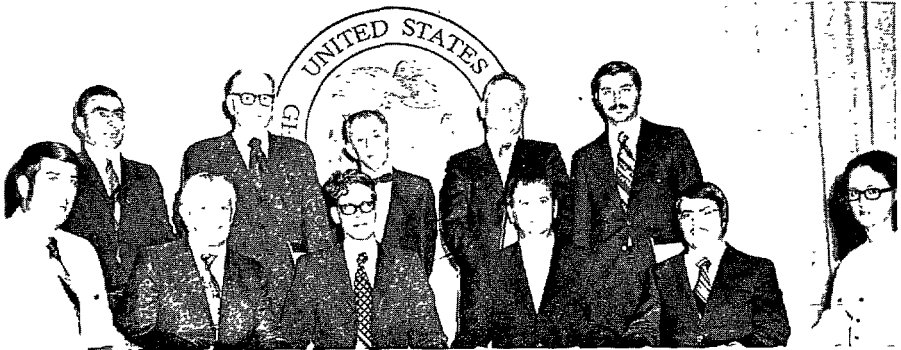
David A. Brinkman

*Procurement and Systems*

*Acquisition Division*

Gerard J. Marks

Robert Stoyanoff



GAO Watchdog Photo

*Meritorious Service Award. Seated, from the left: Jimmy W. Mayberry, Dallas; Gerard J. Marks, Procurement and Systems Acquisition Division; John J. McGrath, Office of Personnel Management; B. Douglas Hogan, Resources and Economic Development Division; David A. Brinkman, Logistics and Communications Division; and Frankie L. Schlender, Financial and General Management Studies Division. Standing, from the left: Herman H. Velasquez, International Division; Jack L. Mertz, Office of Personnel Management; Herman B. Galvin, Financial and General Management Studies Division; John D. Heller, Manpower and Welfare Division; and Kurt R. Sjoberg, San Francisco. Sadye J. Davis, Office of the General Counsel; Robert Stoyanoff, Procurement and Systems Acquisition Division; and Foy D. Wicker, Far East Branch, were not present when the photo was taken.*

## Group Awards

### ATOMIC ENERGY REVIEWS

In recognition of their meritorious service with the General Accounting Office marked by outstanding performance in the conduct of reviews into the Atomic Energy Commission's administration of its regulatory activities. The recommendations resulting from these reviews should have a profound effect on the efficiency and effectiveness of AEC's actions (1) to protect the public health and safety from the hazards of radiation and (2) to license nuclear power plants on a timely basis to avoid power shortages in various sections of the country.

#### *Resources and Economic Development Division*

Philip A. Bernstein  
Thomas P. McCormick  
Gene N. Fredriksen  
James J. Grace

Frederick W. Herr  
Lawrence F. Zenker  
Bernard L. Ungar  
Robert T. Rosensteel

#### *Chicago Regional Office*

Francis S. Kielpinski  
Stewart M. Herman

James B. Musial  
Walter J. Sawa

#### *New York Regional Office*

Lawrence R. Ueland

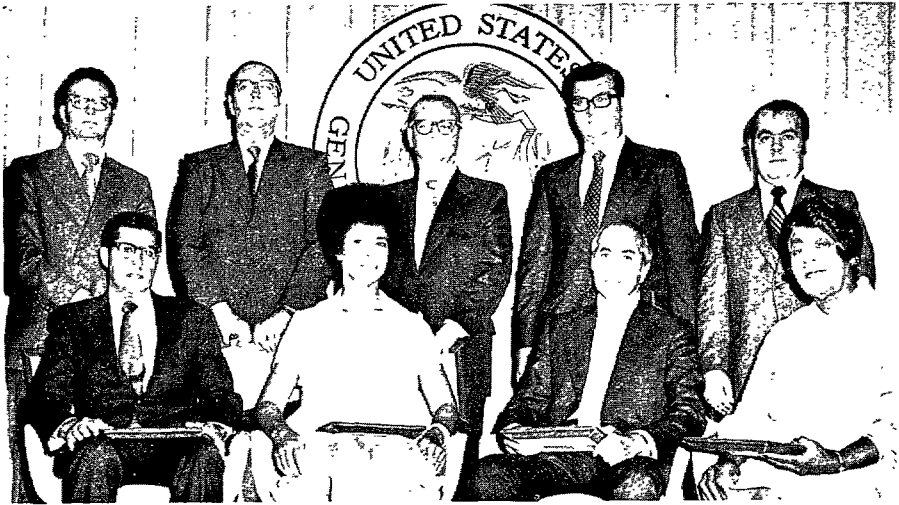
John M. Najberg

Lynne Geras

#### *San Francisco Regional Office*

Harold J. D'Ambrogia  
Vito A. Magliano

John W. Arn, Jr.  
Gordon F. Anderson



GAO Watchdog Photo

*Group Awards for Meritorious Service. Seated, from the left: Sebastian Correia, Jr., General Government Division (U.S. Census Review); Joann F. Richardson, Office of Personnel Management (Support Services Development Staff); Albert B. Jojokian, Manpower and Welfare Division (National Research Review); Louise T. Byas, Transportation and Claims Division (Employee Advisory Council). Standing, from the left: James A. Brucia, San Francisco (Industrial Management Review); Morton A. Myers, Manpower and Welfare Division (Food Sanitation Review); John D. Zylks, Los Angeles Indian Education Review); George E. Grant, Los Angeles, (Dangerous Drug Diversion Review); and Thomas P. McCormick, Resources and Economic Development Division (Atomic Energy Review).*

## DANGEROUS DRUG DIVERSION REVIEW

### *Los Angeles Regional Office*

In recognition of their meritorious service with the General Accounting Office marked by exceptional initiative and competence in the course of a survey and review of the activities of the Bureau of Narcotics and Dangerous Drugs in limiting the illicit distribution of dangerous drugs. The acceptance given their report is indicative of their professional approach and effective communication with agency officials.

George E. Grant

Garry W. Martin

Michael S. Golichnik

## EMPLOYEE ADVISORY COUNCIL

*Transportation and Claims Division*

In recognition of their meritorious service with the General Accounting Office marked by dedicated concern for bettering employee-management relations in the Transportation and Claims Division through its Employee Advisory Council. Their efforts through the Council have contributed to improved employee morale, to significantly better relations between management and nonsupervisory employees, and to improved working conditions for all employees of the Division.

David L. Baker  
 Louise T. Byas  
 William E. Cole, Jr.  
 Ann K. Cortes  
 Carl A. Crea  
 Lillian W. Fogg  
 Olga H. Hill  
 James R. Hurt  
 Margaret A. McDonald  
 Lillie B. McLane

Cora L. Mackall  
 Alexander J. Mazurek  
 Claude E. Rowan  
 Ozell Simmons  
 Julian H. Sorensen  
 Margery J. Van Doren  
 Marion G. Wanat  
 Alice Wilkes  
 Jane E. Williams  
 Juanita A. Williams

## FOOD SANITATION REVIEW

In recognition of their meritorious service with the General Accounting Office marked by excellence in accomplishing GAO objectives in a review of the dimensions of unsanitary conditions in the food manufacturing industry and of FDA's role and responsibilities. This review and report entailed a landmark effort, presented issues of great complexity, and was a great credit to a dedicated, hard-working staff.

*Manpower and Welfare Division*

Morton A. Myers

Stephen L. Keleti, III

*Boston Regional Office*

Louis Lucas  
 Kenneth J. Croke  
 Robert T. Bontempo

John E. McDonough  
 Kendall C. Graffam  
 Alfred R. Vieira



## INDIAN EDUCATION REVIEW

*Los Angeles Regional Office*

In recognition of their meritorious service with the General Accounting Office marked by notable performance throughout the conduct of a review of the management of Indian education programs operated by the Bureau of Indian Affairs. Their recommendations in the report were exceptionally well conceived in the context of a complex and difficult social issue.

John D. Zylks  
Robert B. Krogh

George P. Gazaway  
Danny M. Bullock

Larry J. Bridges

## INDUSTRIAL MANAGEMENT REVIEW

*San Francisco Regional Office*

In recognition of their meritorious service with the General Accounting Office marked by outstanding dedication to the mission of the GAO and high motivation in the course of an industrial management review of the Naval Air Rework Facility, Alameda, Calif. Their innovative review and report was a significant first step in the application of industrial engineering concepts to a Department of Defense in-house industrial-funded facility.

James A. Brucia  
Steven G. Reed  
Richard S. Rosenson

Thomas M. Yamashita  
Pembroke Gochnauer  
Robert L. MacLafferty

William M. Zimmerling

## NATIONAL RESEARCH REVIEW

In recognition of their meritorious service with the General Accounting Office marked by superior performance throughout the course of a review of Federal support of problem-oriented research with special emphasis on the National Science Foundation's "Research Applied to National Needs" program. Their

report was completed under a rigid deadline despite in-depth investigation of the roles of the institutions and parties involved and of future alternatives in such research.

*Manpower and Welfare Division*

Albert B. Jojokian	Clementine H. Rasberry
Danny R. Latta	Dawn E. Davies

*Office of Personnel Management*

Peter B. Shreffler	Richard H. Taft
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*Boston Regional Office*

L. Paul Slater, Jr.	Gino I. Angelone
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*Chicago Regional Office*

Maurice M. Shelton

*Denver Regional Office*

Clifford B. Neuroth	Thomas E. Glenn
---------------------	-----------------

*Los Angeles Regional Office*

William E. Sanchez

*Philadelphia Regional Office*

Richard G. Halter

*San Francisco Regional Office*

Felix Brunner	Mary P. Noble
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SUPPORT SERVICES DEVELOPMENT STAFF

*Office of Personnel Management*

In recognition of their meritorious service with the General Accounting Office marked by outstanding skill and initiative in developing and implementing a creative, innovative, and highly successful career development program for support services personnel. Their enthusiasm and tact as well as their professionalism has gone far toward establishing a program which on the whole has been

rated highly effective not only by the participants but also by supervisors and by top managers in GAO.

Mary Anna Culkin

Joann F. Richardson

### U.S. CENSUS REVIEW

In recognition of their meritorious service with the General Accounting Office marked by professional excellence in the conduct of a review of alternatives and costs for middecade census proposals requested by the Subcommittee on Census and Statistics, House Committee on Post Office and Civil Service. Their review employed independent and highly innovative data-gathering techniques. The final report on this extremely difficult and unique assignment was completed timely despite intervening assignments.

#### *General Government Division*

Sebastian Correira, Jr.  
F. Kevin Boland

Marjorie A. Hrouda  
Janice K. Rothlauf

#### *Manpower and Welfare Division*

William R. Stanco

### **Award for Best Articles Published in The GAO Review**

To recognize staff members, by cash awards, for the best articles published in *The GAO Review* during fiscal year 1972.

Best articles by authors 35 years of age or under:

“A Commonsense Approach to Questionnaires”  
(*The GAO Review*, Spring 1972)

J. THOMAS LUTER

Auditor

Field Operations Division, Los Angeles

“A Commonsense Approach to Writing Reports”  
(*The GAO Review*, Winter 1972)

LOWELL MININGER  
Supervisory Auditor  
Procurement and Systems Acquisition Division

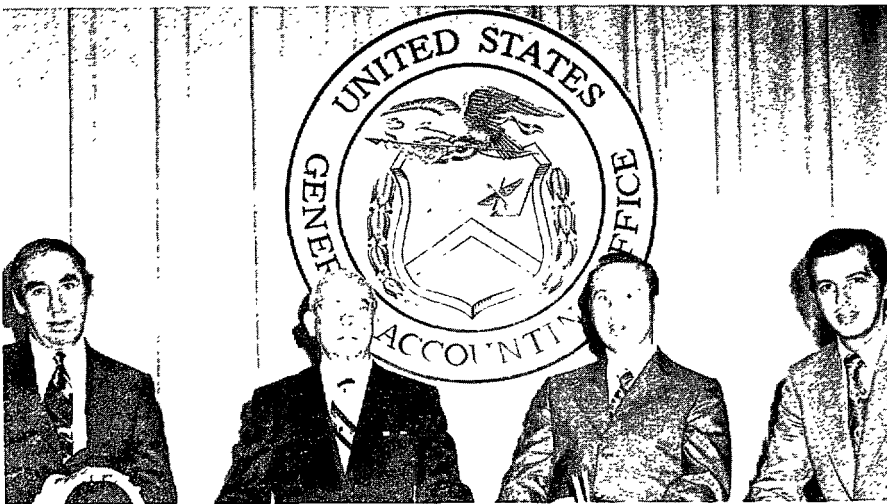
Best articles by authors over 35 years of age:

“The Corporation Audits Division—Its Legacy to the Seventies”  
(*The GAO Review*, Summer 1971)

JOHN C. FENTON  
Assistant Director  
Manpower and Welfare Division

“A Method and Format for Proposal Studies”  
(*The GAO Review*, Winter 1972)

TIMOTHY D. DESMOND  
Supervisory Management Analyst  
Procurement and Systems Acquisition Division



GAO Watchdog Photo

*Award for Best Articles Published in The GAO Review. From the left: Timothy D. Desmond, supervisory management analyst, Procurement and Systems Acquisition Division; John C. Fenton, assistant director, Manpower and Welfare Division; J. Thomas Luter, auditor, Los Angeles; and Lowell Mininger, supervisory auditor, Procurement and Systems Acquisition Division.*

## Special Educational Award

To recognize exceptionally qualified staff members who have been selected to participate in special educational programs designed to prepare them for positions of significant responsibility at policymaking levels.

### ACTUARIAL SCIENCE PROGRAM

This program is directed toward preparing staff members for careers in the actuarial field.

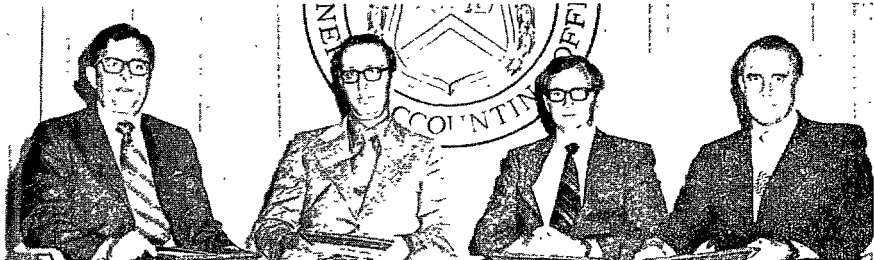
**ANTONE I. REEDER**

Accountant

Financial and General Management Studies Division

### EDUCATION FOR PUBLIC MANAGEMENT

An interdisciplinary program conducted through several leading universities intended to broaden the outlook and deepen the understanding of capable young



GAO Watchdog Photo

*Special Educational Award: From the left: Bill W. Thurman, supervisory auditor, Dallas; Antone I. Reeder, accountant, Financial and General Management Studies Division; Larry E. Hodges, operations research analyst, Financial and General Management Studies Division; and David A. Littleton, supervisory auditor, Procurement and Systems Acquisition Division. William P. Johnston, Jr., and David A. Rogers, operations research analysts, Financial and General Management Studies Division, were not present when the photo was taken.*

careerists in the public service who have potential for high-level policy and management positions.

**BILL W. THURMAN**  
Supervisory Auditor  
Field Operations Division—Dallas

**SPECIAL PROGRAM IN SYSTEMS ANALYSIS**

A program for GAO staff designed to develop a systems analysis capability applicable to public program analysis.

**LARRY E. HODGES**  
Operations Research Analyst  
Financial and General Management Studies Division

**WILLIAM P. JOHNSTON, JR.**  
Operations Research Analyst  
Financial and General Management Studies Division

**DAVID A. ROGERS**  
Operations Research Analyst  
Financial and General Management Studies Division

**INDUSTRIAL COLLEGE OF THE ARMED FORCES**

This program plays an essential role in preparing selected military officers and civilian Government officials for high command and management positions in the increasingly complex field of national security.

**DAVID A. LITTLETON**  
Supervisory Auditor  
Procurement and Systems Acquisition Division

# Remarks of Senator Charles McC. Mathias, Jr.

*The following remarks were made by Senator Charles McC. Mathias, Jr., at the sixth annual awards ceremony of the General Accounting Office, June 19, 1972.*

It is indeed great to be present here today.

I think it is only fitting and proper to have a Congressman or Senator do the work of giving a speech on the one day each year when you receive the honor, because the rest of the year you do most of the work and we try to take all the credit.

You have been called the right arm of the Congress, but who ever thanked an arm for lifting a heavy load?

In fact, as I was thinking over GAO's role in our Government, I was reminded of an incident which recently occurred in New England. To give you some background, when I married a girl from that area several years ago, I promised to bring her and the kids back for a visit at least once a year. Recently, when we were up at the Cape, I went into a local hardware store and from a back room emerged a man who inquired, "You're Ann Bradford's husband, aren't you?" I nodded yes and thought to myself that this was the greatest degree of fame I would ever reach in this latitude. The gentleman followed with another question: "You work in Washington?" "Why yes I do," I answered. "A lot of smart fellas down there?" he went on. "Yes, there are some great minds in the Con-

gress," I told him. "Some not so smart," he counterbalanced. I had to agree. Finally, he said, "Yeah, and sometimes it's pretty hard to tell the smart ones from them that ain't so smart." And so, your job is to tell us which are the smart ones and which are not.

I have come to thank you on behalf of the entire Congress for performing this job superbly. Your organization has perhaps the highest reputation for accuracy and professionalism of any in Washington—despite the fact that your activities thrust you into the center of controversy. I have been in the House and the Senate for 12 years and, in that relatively brief period, I have seen enormous change in size and complexity of the Federal Government, and especially I know GAO has grown and changed in that time. Elmer Staats tells me that in just the past 6 years you have quadrupled the amount of direct assistance and the studies you do for congressional committees and for individual congressman. And a glance at your annual reports over the past 50 years shows that you have grown not only in size and responsibility, but also in respect and self-confidence.

Quite honestly and sincerely, we in

Congress couldn't get along without you and I predict we will be calling upon your help more and more in the future.

De Tocqueville once wrote:

I have never been more struck by the good sense and the practical judgment of the Americans than in the manner in which they elude the numberless difficulties resulting from their Federal Constitution.

GAO's growth is a living example of De Tocqueville's wisdom, for if we are struck by the great changes in the role of GAO and the Congress over the past 6 to 12 years, an observer from the year 1789 or the year 1921, when GAO was founded, would be caught speechless if he examined this huge, complex Government we have today.

The Constitution says that Congress develops legislation and the executive branch administers it. But government and society are so complex that major legislation must be developed and fashioned outside Congress. For example, welfare reform legislation—soon to be on the Senate floor—utilizes computer banks to figure how much various proposals would cost to determine which of these we can afford. Outside expertise is needed to tell us which are administratively feasible. Similar complexity is paralleled in defense, agriculture subsidies, and countless other areas.

GAO provides counterweight to executive branch expertise in all of these areas of developing legislation. GAO is even more indispensable to Congress's other role of overseeing the administration of laws. The Constitution doesn't mention this function—but it is becoming an increasingly important

part of your job. Without your audits and annual reviews, we couldn't even begin to perform this function.

I am aware of your current problems in getting the information you need from FDIC and IRS. I want you to know that I am sympathetic and would like to help out in any way I can.

The outlook for the future can only be for a stronger, more powerful GAO. You have saved taxpayers billions of dollars in the past and we need you to save even more in the future.

You have made the Government far more effective in any number of areas in the past. Your ingenuity and skill will be challenged even more in the future.

Perhaps even more important, you have helped tremendously in maintaining some credibility for Government operations in the public's eye. No one can claim our Government is perfect, but we can say that we are diligently seeking out our faults and are trying to correct them.

There is an old saying that "In statesmanship, get the formalities right, never mind about the moralities." In addition to all your other duties, in this cynical age, you still continue to remind us of the moralities involved in government. And I commend you for it.

As a member of the Senate Government Operations Committee, I have the special responsibility of annually overseeing the operation of GAO. And so I am happy to report today that, in my opinion, all is well.



# One Day in the Congressional Record

As a Federal agency in the legislative branch, GAO's most important purpose is to serve the Congress. This is done in a variety of ways—by submitting reports on audits, special studies, or proposed legislation; testifying on work done or on legislative proposals; providing information at conferences; assisting committees in their legislative and surveillance work; and helping individual members with constituent or other problems.

It is interesting sometimes to note the nature and variety of references to GAO in the *Congressional Record*, the official record of the Congress. A good example is the August 1, 1972, issue.

The most recurring type of reference to GAO in the *Record* is the list of audit reports submitted to the Congress by the Comptroller General. During the course of a year, the number of such reports may range from 175 to 250. It so happened that on August 1, no GAO reports were received by the Congress, but a number of other references to GAO and its work were made during the day's proceedings.

## **Military Procurement Authorization for 1973**

During the debate on this bill, Senator Thomas Eagleton of Missouri referred to the GAO report of July 17, 1972 (B-163058), which identified

\$28.7 billion worth of cost overruns for increases in current over original cost estimates for weapons systems.

Later, in discussing this bill, Senator Edward Kennedy of Massachusetts referred to and placed in the *Record* a GAO report to him as Chairman of the Subcommittee on Health of the Senate Committee on Labor and Public Welfare. This report, signed on May 26, 1972 (B-164031(2)), dealt with the policy of the Department of Defense on the protection of humans used in medical research projects under contract. Senator Kennedy also placed in the *Record* a letter from the Department on the same subject. The appendix to this letter refers to a 1945 legal decision of the Comptroller General on the use of appropriated funds to purchase life insurance (24 Comp. Gen. 648).

In response to a question from the floor, Senator Kennedy again referred to the GAO report, noting that, "The problem, as suggested by the Comptroller General, is that there is no single standard, no uniform or comprehensive policy to cover all DOD contracts for human experimentation  
\* \* \*

## **White Earth Reservation**

The Senate considered and passed a bill providing that certain federally

owned lands within the White Earth Reservation shall be held in trust for the Minnesota Chippewa Tribe. During the debate Senator Gordon Allott of Colorado referred to the GAO report in 1962 on proposals to convey submarginal lands to Indians, a committee request for an updated report, and the 1971 GAO report on the bill being considered.

Senator Mike Mansfield of Montana also referred to the GAO reports, noting that neither “\* \* \* posed objections to the submarginal lands being transferred to the White Earth Reservation.”

### Medical Experiments

Senator Abraham Ribicoff of Connecticut placed in the *Record* several newspaper articles on the Public Health Service withholding treatment from several hundred victims of syphilis as part of a medical experiment. In introducing the articles, Senator Ribicoff referred to two GAO studies. One, completed at the Senator's request and released last fall, dealt with an experimental program run by the Center for Disease Control of the Public Health Service. The other, also completed at his request, as Chairman of the Subcommittee on Executive Reorganization, is a GAO study in process, relating to the experimental use on humans of drugs that have not been approved for general marketing by the Food and Drug Administration.

### Federal Grants-in-Aid

Senator William Roth of Delaware commented at length on the need for a

more rational delivery system for Federal grants-in-aid and standardization of Federal requirements. He noted the progress being made by the Office of Management and Budget and attached to his remarks OMB Circular No. A-102 of January 25, 1972, on uniform administrative requirements for grants-in-aid to State and local governments. One provision of the circular provides for GAO access for audit purposes to pertinent records of grant-in-aid recipients. An attachment to the circular requires local governmental units to return interest earned on advances of grant-in-aid funds to the Federal Government, in accordance with a Comptroller General's decision (42 Comp. Gen. 289).

### Ralph Nader Questionnaire

Representative James Stanton of Ohio, a first term Member of Congress, included in the *Record* some of his answers to the 633-word questionnaire sent to members by the Ralph Nader organization as part of its study of the Congress. Question 269 asked what, if any, new methods of monitoring were favored, either inside or outside the Congress.

In his answer, Mr. Stanton referred to GAO as follows:

I believe Congress itself is in need—as is any institution—of oversight and monitoring. In my opinion this can be done effectively and reliably only by an entity outside of Congress. I don't regard the General Accounting Office as the appropriate agency for this purpose, since the office considers itself an arm of the legislative branch. I have seen no GAO reports criticizing Congress itself. I would suggest that an agency be set

up for this purpose somewhere in the executive branch.

### GAO Operations

Among new legislative bills introduced and listed in the *Record* were two by Representative Chet Holifield of California. H.R. 16128 is a bill to revise certain duties of GAO relating to the audit of Government corporations and certain revolving fund accounts.

H.R. 16179 relates to the use of sta-

tistical sampling procedures in the examination of vouchers by Federal agencies. If enacted, GAO will be involved in the overall administration of the provisions of this bill.

### Committee Hearing

The *Record* announced a hearing for the next day by the Special Subcommittee on Transportation of the House Armed Services Committee on the airlift service industrial fund where GAO witnesses were to testify.

## Writing Lesson

There is a popular story that has spread from Washington lately about the young plumber who discovered that hydrochloric acid was great for opening clogged pipes. He happily passed his discovery on to the Bureau of Standards. The bureau wrote him hastily: "The efficacy of hydrochloric acid is indisputable, but the corrosive residue is incompatible with metallic permanence."

The plumber was delighted. He wrote to thank the bureau. Then the bureau wrote back in alarm: "We cannot assume the responsibility for the production of toxic or noxious residue inevitable in the event of the employment of hydrochloric acid. Try an alternative."

Again the plumber wrote his pleased thanks. This time the bureau chiefs called in an information specialist who sent a telegram. "Don't use hydrochloric acid! It eats hell out of the pipes."

"Our Words Speak For Us"

*H&S Reports, Summer 1972*

# Dare County Mural

A dominant feature of the Comptroller General's conference room on the seventh floor of the GAO Building is the large mural relating to the coastal area of Dare County, N.C. The mural is a montage of various pictorial and historical scenes of the area and occupies almost one full end of the room.

It was painted by Mitchell Jamieson and was finished in 1953, 2 years after the GAO Building was completed.

*The Watchdog*, the monthly newspaper of the GAO Employees Association, reported on the mural in January 1954 as follows.

The beauty and history of Dare County coastland is lavishly portrayed in a recently completed mural by Mitchell Jamieson, in the magnificent new General Accounting Office. It is the fruit of the love and affection borne for this area by Hon. Lindsay Warren, the Comptroller General. The artist developed the mural from ideas of Mr. Warren, and visited the scenes he portrayed. It is a fine piece of recognition for this great and historic section, to be thus depicted in a large Government building.

Mr. Warren explained the scenes in detail. "The mural depicts the restored Ft. Raleigh, the cradle representing Virginia

Dare (I wish so much the artist had put a baby in the cradle as I suggested); copies of Governor Whit's drawings; the tree with the word CROATOAN; the Atlantic Ocean in a storm; the Dare County courthouse; Kill Devil Hill and the Wright Memorial; the Oregon Inlet Coast Guard station; the Wright plane and first flight; a fisherman's cottage with the nets hung out to dry; gulls; a large piece of driftwood; shells on the beach; Pea Island Snow Goose Refuge; the ocean in a calmer mood with an old wreck on the beach; the wreck of the George A. Kohler, now destroyed; Jockey's Ridge and sand dunes; Pamlico Sound and fish houses and fishing boats; Cape Hatteras Lighthouse; sea-oats and willets on the beach. I understand that there is a well-known Irish whisky named Jamieson. In the lower right hand corner a bottle is washed up on the beach and the artist has placed his name on it."

The Commission on Fine Arts inspected and approved the mural on December 17, 1953. In a later letter to the Comptroller General, the Chairman of the Commission stated, "It was a happy coincidence that the Commission could inspect the painting with you on the Fiftieth Anniversary of the historical flight of the Wright Brothers at Kitty Hawk."



# National Association of Accountants Conference Report

The 53d annual international conference of the National Association of Accountants was held in Philadelphia, Pa., from June 25–28, 1972. The following GAO officials and staff members attended:

*A. T. Samuelson*—Assistant Comptroller General

*Max A. Neuwirth*—associate director, General Government Division

*Frank M. Zappacosta*—assistant director, International Division

*Donald M. Mutzabaugh*—audit manager, Office of Administrative Planning and Services

*Frank V. Subalusky*—assistant director, Resources and Economic Development Division

*Gerard J. Wilker*—supervisory auditor, Resources and Economic Development Division

The opening address by Dr. Wayne A. Holman, Jr., member of the Executive Committee of Johnson & Johnson Company, centered around the theme of how men become better. Dr. Holman stated that men become better by doing everything they do in the best way possible, never trying to just get by, and always putting forth an extra effort.

## Effective Analysis of Data

Secretary of Commerce Peter G. Pe-

terson lamented that accountants collect tons of data but distill only ounces of analysis from it. He pointed out the very great need for effective analysis of data, particularly for (1) a competitive analysis system emphasizing information on technology and innovation, (2) a determination of whether innovation and superiority are enhanced by government research and development, and (3) a wider comprehension of productivity. He asserted also the lack of (1) an information system to keep score on ourselves as well as our competitors, (2) new incentive approaches to research and development, and (3) an understanding of motivational aspects on obtaining improved productivity. We must recognize, he said, that it's the end of one era and the beginning of another in which the United States is not the only supereconomic power and that it now faces the challenge of how to compete in world markets.

The Secretary commented at length on the public's incredible misunderstanding of productivity and its place in the private enterprise system. Too many companies, he said, do not keep the productivity score very well and productivity must be measured better. We are going to have to adopt new approaches, new techniques, and new work environments to improve produc-

tivity. Simply installing new equipment will not be enough.

### Problems in Providing Adequate Housing

George Romney, Secretary of Housing and Urban Development (HUD), declared that long-standing social problems of crime, drug abuse, and unemployment obstruct untried Federal housing programs designed to improve inner-city housing for low- and moderate-income families. The Secretary stated that the evidence is overwhelming that housing programs in the inner cities cannot succeed by themselves and that the recent disclosure of corruption and abuse has been the result primarily of more deep-rooted problems that have been disregarded for years.

He emphasized that housing needs for the poor in the central cities cannot be met without cures for racial prejudice, economic classism, crime, drug addiction, lagging education, poor health care facilities, inadequate social services, soaring taxes, and lack of inner-city jobs. He said that drastic steps had been taken to end corruption and provide more efficient administration of HUD housing programs but that the problems are enormous because HUD is a huge organization with an entrenched bureaucracy and is deeply rutted in certain ways of doing things as well as in long-term, public-private relationships that extend over decades.

Nevertheless, said the Secretary, the housing program has been a national

success. He pointed out that more housing was produced in 1971 than ever before in our history and that 1972 would also break the record.

### Effective Written Communications

Robert L. Shultis, Corporate Controller, Technicon Corporation, suggested ways in which written communications can be made more effective—a subject of great interest and concern to GAO staff members.

Mr. Shultis referred to a recent article in the *Harvard Business Review* which cited the ability to communicate, i.e., the ability to write clearly, as the prime requisite to success in business. He said that poor writing:

1. Is costly—to industry in general, to individual companies, and to the accountant himself.
2. Can be overcome—by learning and using a relatively few rules of good writing.

The advantages of clear, precise writing should be obvious to us as accountants. As a service function, the accountant must communicate facts and advise management. While some of our communication may be verbal, our basic product is a piece of paper. We cannot rely solely on accounting schedules, statements, or work sheets. We must write—reports, memorandums, letters, proposals, and so on.

Mr. Shultis gave an easy and practical list of rules to follow. He said that they are not rules of grammar (we have too much grammar already) but rules of communication which, if fol-

lowed, will improve our ability to communicate.

### Organize!

Organize reports, proposals, and memorandums to *highlight the key points first*. If you think your idea may save your company \$250,000, say so in the first paragraph, or better yet, in the first sentence or in the title. Lead with your Sunday punch. That will encourage your reader to read on.

### Use Plenty of White Space

Readers need plenty of white space around the print. You may have noticed that even staid old newspapers tend toward a more readable format recently. Their major change? They have added more white space.

We can do the same thing easily. Adding white space to our reports means little more than using a few extra sheets of paper and a little imagination. Reports are usually more inviting to read when:

- Margins are wide (at least  $1\frac{1}{8}$  inches all around).
- Lines are short (never more than 6 inches).
- Subheads are numerous. (They not only add white space but also allow the reader to scan the report.)
- Paragraphs are varied in length, but generally are brief. (The *Wall Street Journal*, for example, averages about 10 lines to the paragraph.)

All these methods lead to one objective—more white space.

### Use Active Voice

Sentences in the passive voice are just as correct grammatically as those in the active voice, but they don't communicate as well. Active? Passive? Let's call these sentences what they really are: direct order (active voice) and indirect order (passive voice).

The rule is certainly not a new one. Every writing consultant emphasizes the need to use direct order sentences. We usually speak in direct order but inevitably switch to indirect order when we write. *Using the passive voice is probably the most common writing fault among businessmen today.*

### Bring Out the People

Use personal pronouns wherever possible because they represent people. He, we, you, us, they, etc., are flesh and blood. They put life into our writing.

Nothing is quite so precious to a person as his name. We attend seminars and read books on how to improve our memories. What this eventually boils down to is a series of tricks to remember people's names. However, when it comes to writing clearly, do we inject a person's name into the body of a letter or memorandum? Try it sometime. It adds a personal touch and enables you to communicate with the reader more easily. He *likes* to see his name in print.

### Keep Your Sentences Short

Use one idea per sentence and an *average* length of 14 to 18 words. Some sentences will be longer than



this; many will be shorter. The point is, most readers have difficulty digesting more than one idea before they reach a mental stopping point, that is, a period.

**Know Your Audience**

Do we know whom we are writing for? Usually we do. Sometimes, however, our writing doesn't show that we did.

Whether writing to other accountants or to plant managers, make sure that you are writing in terms that your primary audience can understand. Be sure to define any words which you think might not be clear to the reader. The purpose of writing is to communicate, not to impress the reader with your vocabulary. Let's "turn out the

lights" instead of "terminating the illumination" from now on.

**Be Specific—Be Positive**

Many accountants, when they write, become fence straddlers, too. They equivocate, generalize, hedge.

Don't hide behind flat, colorless phrases, such as "indications are," "perhaps," "apparently," and so on. State your point positively, definitely, confidently. You'll be the better communicator for it.

**Effective Oral Communications**

John L. McGrath of Price, Waterhouse & Co. summarized a number of useful do's and don'ts in his discussion on organizing and presenting oral statements.

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Do's	Don'ts
1. Maintain eye control	1. Don't mumble
2. Speak clearly	2. Don't read the speech
3. Be positive	3. Don't memorize
4. Be prepared	4. Don't worry about being nervous
5. Be natural	5. Don't apologize
6. Know your audience	6. Don't distract the audience
7. Above all, know when to <i>stop</i>	7. Don't exceed time limits

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# The Watchdog Reports

*The following are items from past issues of The Watchdog, monthly newspaper of the GAO Employees Association, republished for the benefit of GAO's present professional staff.*

## **GAO Activities Under Contract Settlement Act**

August 1949

Comptroller General *Lindsay C. Warren* informed Congress recently that "fraud" and "waste" on Government contracts have cost taxpayers millions of dollars.

In a blistering report on the audit of some \$1,165,000,000 worth of contracts, Mr. Warren said there "were improper payments in excess of \$6,280,000" that "were induced by fraud."

Of this, he added, only about \$107,882 "has been recovered" and the outlook for additional recovery is slim. Mr. Warren said another \$2,340,000 was paid through "improper or excessive payments" that did not involve fraud.

He said the General Accounting Office had recovered \$474,717 but that Government agencies which made the overpayments generally refused to attempt recoveries, but insist on defending their actions.

Mr. Warren blamed most of the "waste and fraud" on a "Contract Resettlement Act of 1944" passed by Congress which he said allowed Gov-

ernment agencies to settle contracts in full before they had been properly audited by the General Accounting Office or any outside agency.

"The 1944 act," he said, "paved the way for the improper payment of many millions of dollars of public funds through fraud, collusion, ignorance, inadvertence, or overliberality in effecting termination settlements."

"The act," continued Mr. Warren, "limits GAO to actions where there is evidence of fraud," adding this "places the Government in the unenviable position of locking the barn after the horse is stolen."

The Contract Settlement Act of 1944 authorizes the contracting agencies, without prior independent audit by any other government agency, to effect settlement of their terminated contracts. These settlements, in the absence of fraud, are made final and conclusive by the act and can be reopened only by mutual agreement.

The audit functions of the General Accounting Office with respect to such settlements are confined to that of determining, after final settlement of termination claims by the contracting agency (1) whether the payments to

the war contractor were in accordance with the settlement agreement, and (2) whether the records transmitted to the GAO, or other information, warrant a reasonable belief that the settlement was induced by fraud.

Mr. Warren concluded his report by stating "When and if the need ever again rises for any legislation relating to contract terminations, it is hoped that the experience gained under the Contract Settlement Act will show Congress the way to enactment of effective, properly balanced legislation—far different from that act—which will provide adequate protection and appropriate safeguards to both the Government and its contractors, while at the same time in no way risking the national security or economy.

"If such is the result, my criticism of the Contract Settlement Act, and my reports on operations thereunder will not have been in vain."

#### **Unbiased Reports by GAO Lauded**

October 1949

The General Accounting Office was recently commended by the Government Operations Subcommittee of the House Committee on Executive Expenditures. The Subcommittee noted that "The Comptroller General has performed a valuable service to the Congress by submitting the special report which caused this inquiry. The special report opened unexplored areas of statutory deficiencies and abuses of administrative discretion."

The report referred to was prepared by members of the Corporation Audits Division and resulted from the regular

audit of the U.S. Maritime Commission's affairs. It indicated that excessive contributions had been made by the Commission, estimated at not less than \$25,000,000, in the construction of vessels for private operators. This was due to various procedures: inaccurate calculations and unjustifiably liberal interpretations of statutory language.

Following the release of the report on July 11, inquiries were received from members of Congress. The Government Operations Subcommittee, after a brief executive session, held open hearings on the report.

Throughout the hearings the GAO representatives were under vehement attack by the Commission. The latter charged the GAO with "illegal zeal, usurpation of authority and exceeding their proper function."

The Subcommittee's report rejected all the charges against the GAO and remarked that the statements were "wholly without justification." In its report the Subcommittee noted that:

"The reports of the Comptroller General, in addition to being informative to the Congress, provide administrative agencies with a means for correcting inefficiencies and poor administrative practices and procedures. Your committee takes the view that the agencies should welcome these reports as providing an objective basis upon which they can account to the Congress and to the people for their stewardship."

The Subcommittee's action illustrates graphically the value of the performance by the GAO of its duty to report to the Congress matters affect-

ing the public purse. Timely, accurate, and objective reporting enables the latter to maintain proper control over public funds and property, to evaluate performance by the agencies, and to formulate sound legislation.

The constructive value of reporting has been demonstrated effectively in this instance. Yet it places a grave responsibility on the GAO and its employees. It, and they, must follow avidly the principles of timeliness, absolute accuracy, objectivity, and impartiality.

### Comprehensive Audit Subdivision

October 1949

The Comptroller General, *Lindsay C. Warren*, today announced the setting up of a new unit in the General Accounting Office's Audit Division which will make "comprehensive field audits" of selected departments and agencies of the Government. The audit will combine (1) an analysis of the agency's fiscal affairs, (2) the property audit called for by a recent act of Congress, and (3) the transaction audit under the Budget and Accounting Act.

This move is described as one of the most far-reaching steps ever taken in the audit phase of GAO's work, and it is in harmony with the joint accounting program now being carried on by the General Accounting Office, the Treasury Department, and the Bureau of the Budget.

*William A. Newman, Jr.*, an Assistant Director of the Corporation Audits Division of GAO, has been selected to

head the new subdivision. He is a certified public accountant (N.Y.), who will bring to it his wide experience on both commercial and governmental accounting. In the selection of personnel to staff the subdivision, emphasis will be placed on public accounting experience.

Initially, the new type of audit will be limited to the Coast Guard but will be extended to other agencies as circumstances warrant.

**Charles O. Magnetti**

August 1950

*Charles O. Magnetti*, Administrative Officer of the Audit Division, graduated from the National University School of Law as valedictorian of his class. Magnetti and 30 others, the largest class since the war, were conferred Bachelor of Law degrees at the Chamber of Commerce Auditorium after an address by House Speaker Rayburn of Texas. Presiding at his first commencement as chancellor of the university was Supreme Court Justice William O. Douglas.

Magnetti received five prizes. Included were a United States Savings Bond for the highest average in the senior class; the Sigma Delta Scholastic Key to the graduating member of the Mu Chapter having the highest scholastic standing during four years of study; the Lawyers Cooperative Publishing Company and the Bancroft Whitney Company prizes for the highest recognition in Administrative Law and Conflict of Law, and the Bureau of National Affairs prize to the gradu-

ating student who in the judgment of the faculty most merits the award. He was elected to the National University Honor Society.

### Corporation Audits Has Fifth Birthday

By Frederic H. Smith

August 1950

On July 10 Corporation Audits Division celebrated its fifth birthday. Five years ago, Office Order No. 67 established the Division with the responsibility to "audit the accounts and books and examine the financial transactions, preparing reports necessary in connection therewith, of all Government corporations pursuant to the provisions of section 5 of Public Law 4, 79th Congress, approved February 24, 1945, and of other Government agencies whose accounts are to be audited by the General Accounting Office in accordance with principles applicable to commercial transactions \* \* \*."

The job confronting the new Division was a big one. The 101 Government corporations covered by the 1945 act had about 30 billion dollars in assets and included what were probably the largest corporations or centers of corporate aggregates in the world. Also, since the act required the first audits to be made for the fiscal year 1945 and reports thereon submitted by January 15, 1946, the work was in arrears even before any men were on hand to begin it.

Recognizing the magnitude and complexity of the job ahead, the Comptroller General obtained as first

Director of the new Division *T. Coleman Andrews*, a certified public accountant with extensive experience in public affairs. Notwithstanding the fact that most trained accountants were at that time in the Army or Navy or with war contractors, Mr. Andrews began the recruitment of a staff of experienced and qualified accountants.

It will be to the everlasting credit of the Comptroller General, Mr. Andrews, and others associated with them during the formative period of CAD, that today that Division can present the largest and finest concentration of accounting talent to be found anywhere in the Government.

Although a highly competent staff of nearly 200 men had been assembled by July 1947, many audits were long past due, and completion of others appeared indeterminably far in the future. Much of the difficulty came from the incomprehensible neglect of accounting by corporate management; other delays resulted from the normal growing pains any new organization must experience.

Now most of these troubles have been cured; corporate accounts are improved and internal problems are few and minor. By June 1950 all required audits were completed and by July 31 all required reports had been submitted. So, at the end of 5 years, the Division can start the next 5 years with a clean slate.

Now that the birth pangs have been almost forgotten and the audit backlog cleared away, a new challenge has been offered CAD. On July 3, 1950,

Supplement 17 to Office Order No. 67 gave CAD the responsibility for the conduct of comprehensive audits of Government agencies as contemplated by the joint program of the Comptroller General, the Director of the Bureau of the Budget, and the Secretary of the

Treasury to improve accounting in the Federal Government.

How well CAD discharges its new responsibility will be for a future historian to record. Members of CAD only say "It takes us a little longer to do the impossible."

## Case for Cost Accounting

The assembling of expenditures—i.e., disbursements, by fiscal years and by appropriations—does not give a clear conception of the results obtained nor of the total costs, as in some cases separate units are maintained with funds from several appropriations, items charged to one appropriation are used years afterwards in other work, and materials and supplies purchased for a certain project are actually used at a later date on an entirely different project. With a well-formulated cost-keeping system the actual costs can be secured and reported with neither additional nor undue expense.

The keeping of cost records provides the yardstick so necessary for the measurement of work accomplished with the funds provided. An expenditure of \$100,000 for services and other expenses in connection with the purchasing and handling of supplies in one bureau may be justified, while an expenditure of only \$10,000 in another bureau for the same class of work may be wasteful. The total spent does not give a proper comparison, but a system of accounts so arranged as to show the cost per purchase order, or on a percentage, or both, will show whether the amount expended in making the purchases was in the proper proportion to the total number of purchases made or the amount expended for the purchase price of the supplies.

Should it develop that in one bureau the cost of purchasing is only 1 percent of the total expended for the purchase, in another 2 percent, and in others from 5 to 10 percent, a study can then be made of the conditions which cause this wide difference, and the reasons for the variance could be discovered, such as the fact that modern methods were not used, or that the laws affecting the particular department caused additional expense that could not be avoided.

Annual Report of the Comptroller  
General of the United States, fiscal  
year 1927

# Method Engineering and Work Study

*The following is the report by a work study engineer after a visit to a symphony concert at the Royal Festival Hall in London. The Review thanks Robert Drakert, Chairman, International Board of Auditors for NATO, for contributing this item from the NATO Staff Association Bulletin, May 1972.*

For considerable periods the four Oboe players had nothing to do. The number should be reduced and the work spread more evenly over the whole of the concert, thus eliminating peaks of activity.

All the twelve violins were playing identical notes; this seems unnecessary duplicating. The staff of this section should be drastically cut. If a larger volume of sound is required, it could be obtained by means of electronics apparatus.

Much effort was absorbed in the playing of demi-semi-quavers; this seems to be an unnecessary refinement. It is recommended that all notes should be rounded up to the nearest semi-quaver. If this were done it would be possible to use trainees and lower grade operatives more extensively.

There seems to be too much repetition of some musical passages. Scores should be drastically pruned. No useful purpose is served by repeating on the horns a passage which has already been handled by the strings. It is estimated that if all redundant passages were eliminated the whole concert time

of two hours could be reduced to twenty minutes and there would be no need for an interval.

The conductor agrees generally with these recommendations, but expresses the opinion that there might be some falling off in box-office receipts. In that unlikely event it should be possible to close sections of the auditorium entirely, with a consequential saving of overhead expenses, lighting, attendance, etc. If the worst came to the worst, the whole thing could be abandoned and the public could go to the Albert Hall instead.

Following the principle that "there is always a *Better* method" it is felt that further review might still yield additional benefits. For example it is considered that there is still wide scope for application of the "Questioning Attitude" to many of the methods of operation, as they are in many cases traditional and have not been changed for several centuries. In the circumstances it is remarkable that Methods Engineering principles have been adhered to as well as they have. For example, it was noted that the pianist

was not only carrying out most of his work by two-handed operation, but was also using both feet for pedal operations. Nevertheless, there were some excessively reached-for notes on the piano and it is probable that redesign of the keyboard to bring all notes within the normal working area would be of advantage to this operator. In many cases the operators were using one hand for holding the instrument, whereas the use of a fixture would have rendered the idle hand available for other work.

It was noted that excessive effort was being used occasionally by the players of wind instruments, whereas

one air compressor could supply adequate air for all instruments under more accurately controlled conditions.

Obsolescence of equipment is another matter into which it is suggested further investigation could be made, as it was reputed in the programme that the leading violonist's instrument was already several hundred years old. If normal depreciative schedules had been applied the value of this instrument should have been reduced to zero and it is probable that purchase of more modern equipment could have been considered.

M.L.M.F.

## Social Measurement

One of the most significant problems in the planning and programming processes is the problem of measuring the contribution that existing programs have made toward achieving stated goals and assessing the potential contribution of alternative programs. The problem of defining measurement criteria is especially complex when we seek to measure effectiveness of social programs. Measurement criteria must directly reflect the goals or aims of a program if the criteria are to allow reliable measurement of effectiveness. However, absolute agreement on goals and aims is often lacking, and the relative weight to be given different specific objectives often defies definition. What criterion will permit us to choose between saving one human life and preventing a large number of cases of blindness? If we are choosing among lives to save, what criterion tells us which lives?

*Elmer B. Staats*

Comptroller General of the United States  
Testifying before the Senate Committee on  
Government Operations on Planning-Pro-  
gramming-Budgeting, March 26, 1968



# FROM GAO SPEECHES

## Accounting for Performance in Social Programs

Elmer B. Staats, *Comptroller General*, speaking on "Governmental Auditing in a Period of Rising Social Concerns" before the Eastern Area Conference of the Financial Executives Institute in Nassau, Bahamas, May 12, 1972.

In reviewing the effectiveness of programs having to do with such matters as the environment, education, welfare, health, and housing, GAO is treading on grounds that are largely unsurveyed. Few standards for measuring performance exist. Planners and managers of programs attacking social ills do not have an overabundance of information as to how to achieve the most effective results.

Further, there are difficult problems of measuring progress or accomplishment—of knowing where we are—in many of these programs. Our concepts and our methods of accounting for the results of social programs are primitive at best. Our roadsigns in these areas are not accurate. As a Nation, we need to develop methods of accounting for these programs that will not only clearly show what we invest in them but what is accomplished in relation to what is intended.

We need techniques to measure the differences in social conditions that result from infusing public funds and other resources into improving those conditions. This type of accounting is needed by policymakers and planners, by managers and operators, and by reviewers of performance, including auditors.

It is a problem to be worked on not only by accountants but by many other professions. It is not an easy problem but it does seem to me to be essential that more rapid progress be made on it than is apparent to date. A system that feeds back understandable information to managers, legislators, and the public on what is being accomplished from spending public funds, should help us do a better job of improving our programs for solving pressing social problems.

## Forces of Change

Robert F. Keller, *Deputy Comptroller General*, speaking on "Financial Management Developments in State and Local Governments in the Conduct of Federally Assisted Programs," before the 21st annual national symposium of the Federal Government

*Accountants Association, Los Angeles, June 21, 1972.*

I think our work in the intergovernmental area is a good example of "Forces of Change" in action. It arose because of the greatly increased Federal spending at the State and local levels. This was brought about by external forces—the many needs of our society. We are meeting the accountability problem by bringing about internal changes in auditing both at the Federal and at the State and local level with the development of audit standards and other related activities. And, the GAO and others involved in the project have themselves become a force for change by recognizing the need and marshaling the facts and interest to bring it about.

### Nonmonetary Measurement

William L. Campfield, *associate director, Office of Program Planning, speaking on the "Expanded Role and Opportunities for Auditing in the Public Sector" at the Conference on Audits of Federally Financed Programs sponsored by the California CPA Foundation, San Francisco, May 22, and Los Angeles, May 25, 1972.*

And herein lies the value of the "commonsense" dimension to decision-making. Only by adding some "intuitive sensing" or judgment of the rightness of a proposed action to the scientifically derived options or simulations available to him does the decision-maker enable himself to take timely action over a wide range of people, problems, and needs. Herein also lies

the clue or touchstone for the auditor who finds himself facing a situation calling for an evaluation but for which he does not have a "built in" standard for measurement or guidance. What is most important in this regard, as most knowledgeable social scientists will attest, is for responsible people in our society to get at the task of developing and using modest, viable social indicators and measurements as quickly as possible. As a corollary, they need to accept the hard fact that crude measures are better bases for action than no measures at all.

It ought to be self-evident that the social programs, e.g., enhancing the dignity of humans or improving their sense of political awareness, which by their nature are not susceptible to easy quantification, are not easily fitted into the calculus of economic behavior with which accountants customarily deal. But economist Kenneth Boulding relieves some of our frustration by giving us a classical example of nonmonetary measurement. He cites a proposal of a 19th century economist, P. H. Wicksteed, in which he poses a means of calculating the value of a mother-in-law. This proposal would present the measurement value in terms of how high a cliff a person would jump off to save his mother-in-law; 5 feet, yes; 50 feet, no; 10 feet, yes; 40 feet, no. Mean average decision point is 12.3 feet. That is, at any height less than 12.3 feet the individual would jump to save his mother-in-law. This obviously is a ridiculous example, but it does illustrate the way in which nonmonetary measures may be used to value "calculated behavior."

The amendment to the Defense Production Act of 1950 passed in August 1970 which provided for the establishment of the Cost Accounting Standards Board designated the Comptroller General as Chairman and authorized him to appoint the other four members. The law further specified that two of the additional members are to be from the accounting profession; one is to be representative of industry; and one is to be from a Federal department or agency.

On January 21, 1971, the Com-

Accounting Standards Board (Public Law 91-379) was passed by the Congress following an 18-month study by the General Accounting Office undertaken by previous direction of the Congress. In this study GAO found that such standards were both feasible and desirable. The Board was then incorporated in the amendments to the Defense Production Act approved August 15, 1970. Funds for the establishment of the Board were approved recently by the Congress.

The Board will have the responsi-

On March 5, 1971, Mr. Staats, Chairman of the Board, announced that the Board had selected *Arthur Schoenhaut* as Executive Secretary.

Mr. Schoenhaut has served the Federal Government since 1950. Until 1964 he was with the General Accounting Office and served as Deputy Director of the Civil Division from 1964 to 1967. Since 1967 he has been Deputy Comptroller of the Atomic Energy Commission.

Mr. Schoenhaut received his B.B.S. degree from the City College of New York.

## Expanded Audit Standards Published

"Standards for the Audit of Governmental Organizations, Programs, Activities and Functions"—in development since February 1970—was formally issued by the Comptroller General on August 1, 1972. These standards augment the standards of the American Institute of Certified Public Accountants (AICPA) for audits of financial statements by providing for a broader scope of auditing to include:

- More emphasis on evaluating compliance with pertinent statutes and regulations.
- Examining the efficiency and economy practiced in the use of resources.
- Evaluating the extent to which program objectives are being achieved.

GAO conducted this project with the assistance of representatives of Federal agencies, State and local governments, leading professional organizations, public interest groups, and the academic community.

Some of the standards are similar to the generally accepted auditing standards of the AICPA mentioned above and they include requirements that:

- Auditors possess appropriate skills, be independent, and use due professional care in performing their work.
- Work be planned adequately, assistants be supervised properly, internal controls be reviewed, and sufficient evidence be collected to support opinions and conclusions.

New and important additions include:

- A standard expanding the scope of an audit to include an examination of how well the entity audited (1) carries out its financial and accounting responsibilities, (2) complies with applicable legal and regulatory requirements, (3) economically and efficiently uses financial, property, and personnel resources, and (4) achieves the objectives of its programs and activities.
- A number of requirements that reports on audits include a full disclosure of facts supporting findings and recommendations, pertinent comments of officials of audited entities, emphasis on future improvement, and avoidance, when possible, of criticism of past mistakes.

In issuing the new standards the Comptroller General said:

In my opinion, these new, expanded auditing standards are a very important landmark in the auditing field. They provide for a scope of auditing of government programs and activities that, properly applied, should result in much better information for managers, legislators, and the public on how public funds are administered and expended and whether results intended are being achieved.

We are hopeful that these standards will foster broader and more responsive auditing at all levels of government, and that they will be a real force for improvement in those State and local governments that still are performing financial audits of limited scope and are not responding to the needs of users for more and better information on public programs. I believe this aspect is of special importance at this time of growing concern with accountability for how public funds are managed and the consideration being given to sharing Federal revenues with State and local governments.

On August 1, 1972, a public briefing on the new standards was conducted in the GAO Building by the Comptroller General, *Elmer B. Staats*, and *D. L. Scantlebury*, director, Financial and General Management Studies Division. The briefing was attended by about 100 representatives of Federal agencies, professional associations, State and local governmental organizations, and the press.

### Treasury Tax and Loan Accounts

The Subcommittee on Domestic Finance of the House Banking and Currency Committee published in May 1972, as a Subcommittee print, a staff report entitled "Commercial Banks Holding Treasury Tax and Loan

Account Balances on February 14, 1972."

As of the date of the study, the report lists balances by individual banks totaling \$5.8 billion in 12,838 commercial banks.

GAO has examined this subject from time to time. The staff report refers to this work in the Chairman's transmittal letter as follows:

Almost from the time that the Treasury Department began using tax and loan accounts in 1917, there has been a controversy over whether or not the accounts are a subsidy to the commercial banking system or a method of channeling funds through the money market without major disruptions. Since the early 1950's, the General Accounting Office has consistently recommended changes in the tax and loan account structure including a recommendation that the law be changed to allow banks to pay interest on these demand deposits. In return the Government would pay the banks for services rendered on the part of the banks for the Government.

### Auditing of Manpower Contracts

During the hearings for 1973 before the Subcommittee on the Department of Labor—Health, Education, and Welfare of the House Appropriations Committee (Apr. 14, 1972), Congressman Silvio O. Conte of Massachusetts asked why the Department of Labor was proposing to audit manpower projects with in-house staff instead of contracting such work to private firms.

Frank G. Zarb, Assistant Secretary for Administration and Management, replied as follows:

The extensive use of CPA firms to audit manpower training contracts was an emergency measure to supplement the Depart-

ment's audit staff in dealing with the rapidly expanding manpower programs. We now propose to do a larger part of the auditing through Federal auditors. Because of the specialized training and knowledge of the Department's audit staff, they can provide better and more valuable audit service. We are accordingly reducing the funds expended for public accountant services and using those funds for Federal auditors. We believe this will provide more economical and more effective audit service. We will continue to use CPA firms to audit the smaller contracts where the primary need is for a cost audit.

Net savings resulting from this change will be \$123,000. However, gross savings in the superior quality of the audit service will far exceed that figure.

### **Working With Our Canadian Neighbors**

Polluted water has no respect for international boundaries. Therefore, in a current review of efforts to clean up the Great Lakes, the Detroit regional office decided that Canada's work must also be considered. Canada borders on four of the five Great Lakes.

*Oliver W. Krueger* and *Oliver G. Harter* of the Detroit regional office went to Ontario to discuss Canada's research program with officials of the Canadian Centre for Inland Waters and the Province of Ontario Ministry of the Environment.

These officials were most helpful in providing an overview of Canadian research operations on the Great Lakes—including the extent of research, how research priorities are established, how and by whom the research is carried out, and how efforts are coordinated in-house and with the United States.

Messrs. Krueger and Harter re-

turned with a promise of continued cooperation throughout the review.

### **Reuse of Housing Designs**

Last year, the Comptroller General sent the Congress a report on benefits that could be realized through the reuse of designs for public housing projects (B-114863, Dec. 2, 1971). The report concluded that millions of dollars of design and construction costs could be saved through appropriately reusing existing designs for housing projects rather than individually designing each project.

Copies of the report were sent by *H. L. Krieger*, manager, Washington regional office, to a number of housing authority officials in the Washington area. Some of the responses showed interest and enthusiasm for the proposals in the Comptroller General's report.

The executive director of the Housing Authority of the city of Rockville, Md., stated:

Frankly it is the best idea I've heard in a long time for saving taxpayers' money.

I would like to see HUD compile a catalog of the designs successfully used by LHAs, include the names and addresses of the architects and the cost of the housing constructed. Obviously moderations to foundations and adaption to sites would have to be made but some architects are so much more imaginative than others and LHAs have little to choose from when setting out on a development design.

The executive director of the Alexandria Redevelopment and Housing Authority responded:

The findings of the Comptroller General are certainly very interesting, and, with proper flexibility, could prove beneficial to

all those concerned with providing much-needed housing for low-income families.

### Compliments

Continuing the presentation of excerpts from letters of appreciation for the quality of assistance rendered by GAO staff members, *The GAO Review* is glad to quote the following.

*From Representative Emanuel Celler, Chairman of the House Committee on the Judiciary, April 19:*

\* \* \* at the recent hearings of the Commission on the Bankruptcy Laws of the United States excellent testimony was presented by Messrs. Dan Stanton, James Neely, and George Doyle of the General Accounting Office—all of whom had previously participated in a comprehensive study of bankruptcy administration.

Once again I would like to commend you and the staff of the General Accounting Office for the exemplary contributions that you are making to the processes of our government.

*From Representative Peter A. Peyser, April 25:*

I have had the opportunity of having Sam Bowlin work for me as a Congressional Fellow for the past four months.

I wanted you to know that I have never had a more enthusiastic and dedicated worker than Sam. If he is typical of the type of men you have on your staff, you are indeed fortunate.

*From Senator Abraham Ribicoff, Chairman of the Subcommittee on Executive Reorganization and Govern-*

*ment Research, Senate Committee on Government Operations, to the Comptroller General, May 9:*

On behalf of the Subcommittee on Executive Reorganization and Government Research, I would like to thank you very much for the testimony of Mr. Gregory Ahart on May 3 \* \* \*. His comments were enormously helpful to us in our consideration of S. 3419.

I would like to thank you especially for your very fine report of March 28 entitled "Problems Involving the Effectiveness of Vaccines." More than any other single document, this report was responsible for executing long-needed changes in personnel and structure in the federal government's vaccine regulation program. The team which prepared the report, headed by Mr. Mort Myers, has done an outstanding job in producing a solid and hard-hitting analysis of the performance of the Division of Biologics Standards. Their work has notably contributed to better public health programs in this country \* \* \*.

*Senator Ribicoff also sent letters of appreciation directly to the following staff members of the Manpower and Welfare Division for their work on the report on "Problems Involving the Effectiveness of Vaccines," National Institutes of Health (B-164031(2), Mar. 28, 1972): Morton A. Myers, assistant director, Frank D. Etze, supervisory auditor, Jeffrey E. Heil, supervisory auditor, and Peter J. Oswald, auditor.*

*From Representative Jerome R. Waldie, Chairman of the Subcommittee on*

*Retirement, Insurance, and Health Benefits, House Committee on Post Office and Civil Service, to Herbert Feay, assistant director and actuary, Financial and General Management Studies Division, May 12:*

On behalf of the Subcommittee \* \* \* and myself, I want to thank you for your very valuable assistance recently and to commend you for the concise manner in which you presented information to the Subcommittee.

Mr. Mulholland, my staff assistant, informed me of your great assistance and cooperation in Chicago and in meetings both prior to and subsequent to that trip.

*From Senator Vance Hartke, Chairman of the Senate Committee on Veterans' Affairs, May 23:*

On Thursday, May 18, Dean K. Crowther, Deputy Director of Manpower and Welfare Division of the General Accounting Office, appeared before the Subcommittee on Readjustment, Education and Employment, which I am privileged to chair, to testify on veterans and correspondence courses. This is a very important area for the Committee and we were most impressed by the testimony provided. Of even greater importance was the competence and expertise exhibited by Mr. Crowther and those who accompanied him in response to questions propounded by the Subcommittee. It was a competence born of obvious preparation and thorough familiarity with the subject matter. This was a refreshing change to one who too often must listen to the dreary refrain, "We'll

have to try to supply that for the Record" from the witnesses appearing before the Committee.

Mr. Frank M. Mikus, Assistant Director, Civil Division, who is no stranger to the Committee, has and continues to be of immeasurable help in quickly obtaining reliable information needed by our staff in this and other matters. Irving T. Boker of the Civil Division and Clement F. Preiwisch, Audit Manager of the Chicago Regional Office, also clearly maintained the standards of excellence that were exhibited Thursday. I understand, by the way, that your Chicago office was quite active in obtaining much of the information in which the Committee was interested.

In sum, the men who appeared before this Committee were of great assistance to us and a fine credit to your office.

*From Representative John D. Dingell, Chairman of the Subcommittee on Fisheries and Wildlife Conservation of the House Committee on Merchant Marine and Fisheries, May 25:*

I want to thank you again for the excellent report prepared by the General Accounting Office for our Committee on the implementation of the National Environmental Policy Act. The report and your helpful testimony have already been of considerable value and assistance to us, and we expect that it will continue in this regard.

I am especially appreciative of the fine work contributed by Messrs. Choruby, Zimmerman, Campbell and Hirschorn. I am aware of the very considerable effort which this report re-

quired, and which they provided in ample measure. Without this fine work, the report would not have been nearly so useful as it has proved to have been.

*From Representative John S. Monagan, Chairman of the Legal and Monetary Affairs Subcommittee of the House Committee on Government Operations, May 23:*

As you are aware the Subcommittee on Legal and Monetary Affairs has been conducting an extensive investigation of the operations of the Federal Housing Administration in Detroit, Michigan. Throughout its investigation the Subcommittee has had the assistance and cooperation of the GAO-HUD audit group headed by Baltas Birkle. The Subcommittee appreciates the help it has received from Mr. Birkle and Clare Rohrer of the HUD audit group in Washington.

The Detroit regional office of GAO has also provided valuable assistance to the Subcommittee in its investigation. As I have had occasion to mention to you before, Regional Administrator Charles Moore is to be complimented on the high quality of the work performed by his office. The testimony received from Assistant Regional Administrator Robert Piscopink on May 4th has been very valuable to the Subcommittee in its analysis of the effectiveness of HUD's area office in Detroit in dealing with mounting foreclosures in that city.

The Subcommittee also wishes to express its appreciation to you for having assigned Robert Tracy and Phillip Andres of the Detroit regional office

staff to the Subcommittee on a temporary basis. These two men have worked hard and acquitted themselves well. They provided a valuable "on the spot" extension of the Subcommittee staff during its investigation.

*Also, from Representative Monagan, June 1:*

I want to express the deep appreciation of the Subcommittee for the assistance of the General Accounting Office in the Subcommittee's study of the block grant programs of the Law Enforcement Assistance Administration. Particularly, I wish to note and express thanks for the valuable assistance rendered by Mr. William C. Lynch who, while on assignment to the Subcommittee by the GAO, rendered invaluable auditing and investigative assistance. Some of the more significant findings during the Subcommittee's investigation resulted from Mr. Lynch's fact-finding. Throughout the eleven months that he served with the Subcommittee Mr. Lynch performed above and beyond the call of duty working long hours side-by-side with the Subcommittee staff wading through extensive documentation and assisting ably in the definition of issues.

The Subcommittee's investigation and the Committee report have already had important salutary effects. No mean portion of the credit for the reforms goes to your office and to Mr. Lynch.

*From Representative William J. Randall, Chairman of the Special Studies Subcommittee of the House Committee on Government Operations, June 2:*



During the past twelve months Mr. Alan Hooper has been diligent in applying himself to the task for which he was assigned to this Subcommittee and the information he has developed is infinitely valuable in connection with our study of the economy and efficiency of international market promotion by the Foreign Agricultural Service \* \* \*.

On behalf of the Special Studies Subcommittee and its staff I wish to commend Mr. Hooper for the fine work he has performed for us.

*From Senator Warren G. Magnuson, Chairman, Senate Committee on Commerce, June 12:*

Today we are releasing to GAO's Boston office, Mr. Donald Keelan who has been on assignment to the Committee for the past several months. We do so reluctantly because Mr. Keelan has proven such a valuable addition to our staff \* \* \*.

We have found Mr. Keelan to be top flight in every respect. Not only is he a gifted and imaginative accountant, but also a splendid individual. During this assignment he has had to travel extensively, to spend weeks away from his home and family, and to work a good deal of overtime in the evenings and on weekends. He has done so cheerfully and without the slightest hint of reluctance.

If Mr. Keelan is typical of other GAO employees, I am confident that the Office is in good hands.

*From Representative Thaddeus J. Dulski, Chairman of the House Post Office and Civil Service Committee, June 14*

*(similar letter from Representative David N. Henderson, Chairman of the Subcommittee on Manpower and Civil Service, June 15):*

I wish to express my appreciation for the services of Mr. C. Thomas Metz, Investigator on loan to the Committee from the General Accounting Office.

\* \* \* \* \*

\* \* \* Mr. Metz has served with the Subcommittee a year and his background, experience, and overall knowledge of the mission of the Subcommittee, have made him a most valuable asset in our subcommittee work. He has also initiated and assisted in a number of studies and investigations that have proved to be most productive.

*From Representative Wayne L. Hays, Chairman of the Committee on House Administration, June 23:*

I should like to express the appreciation of the Committee on House Administration for the service rendered by the General Accounting Office in connection with an audit of a contract between the Stanford Research Institute and this Committee.

Mr. Frank B. Graves and Mr. Way S. Hew of your San Francisco Regional Office prepared a comprehensive and detailed analysis and audit of all financial records and supporting documents relating to this contract. Because of their efforts, the Stanford Research Institute has cancelled its final billing in the amount of \$40,090.81.

Messrs. Graves and Hew are to be complimented on their highly profes-

sional work and the expeditious manner in which they completed their assignment.

*From Representative Joe L. Evins, Chairman of the House Select Committee on Small Business, June 26:*

The assignment to the Committee of Messrs. Chester F. Michewicz, GS 11, and Joe Wagoner, GS 7, of your Agency, for staff assistance was of tremendous help in connection with the recent hearings held on Minority Enterprise by our Subcommittee on Minority Small Business Enterprise.

These two gentlemen were extremely helpful and cooperative. I do not hesitate to commend them on their fine work.

*From Barry J. Shillito, Assistant Secretary of Defense (Installations and Logistics), July 11:*

Messrs. Frank Chemery and Gerald J. Marks of your office recently provided us in Department of Defense with a valuable service in agreeing to discuss their impressions gained during the effort you have underway to evaluate the Department of Defense "should cost" efforts. On June 19th Mr. Marks informally discussed his summary findings with the DoD Should Cost Coordinating Committee. On June 27th both gentlemen met with me and Service Representatives at a Material Secretaries breakfast. Their frank discussion of the values that are being gained from should cost studies and their equally frank discussions of areas where we might interject improvements, was most well received by all in attendance.

Please convey my personal appreciation to both individuals for an outstanding job. I believe such interchange of information on an informal basis can often do more to improve operations than formal reports.

*From Senator John A. Pastore, Chairman of the Joint Committee on Atomic Energy, July 17:*

I should like to express the appreciation of the Joint Committee for the outstanding assistance rendered by your supervisory auditor, Mr. Thomas Melloy, during his recent assignment to the Committee. The Committee has completed its review of the fiscal year 1973 authorization bill for the Atomic Energy Commission and its efforts were aided materially by Mr. Melloy's very significant contribution.

He demonstrated the highest professional competence together with the willingness to work long hours in this year of intense effort to accelerate the legislative budgeting process. The demands of his services were many and varied—none were unfulfilled.

*From Mario T. Noto, special counsel, Subcommittee on Labor, Senate Committee on Labor and Public Welfare, July 26:*

Miss Carrie Stevens, a mathematician from the General Accounting Office \* \* \* has been assisting in the conduct of a study of the private pension system in the United States which was mandated by Senate Resolution 235, agreed to March 6, 1972. In implementing this study the Subcommittee has been methodically collecting a variety of data and statistics which

have proved indispensable for analytical purposes in order to define the various deficiencies and inequities of such system. This has entailed accumulation of much statistical information and similar data and Miss Stevens has been very actively involved not only in this phase of the operation, but also in analysis of the same. Miss Stevens also actively participated in the preparation of Subcommittee hearings on legislation pending before the Committee, S. 3598, representing the legislative efforts to produce remedial measures in our private pension plans.

I believe you should be apprised that Miss Stevens has performed competently not only duties assigned to her, but also has exhibited independent initiative, without direction or assistance, in pursuing pertinent data which in her opinion would and, in fact did, serve to further the Subcommittee's mandate.

She has performed her duties conscientiously and in a manner which reflects credit to her office and permanent assignment. She has displayed a sincere attitude toward her work and has maintained at all times an effective and productive work relationship with the staff and others with whom she has come into contact. Her assignment by your office to the Subcommittee has reflected credit to the Subcommittee and on behalf of the Chairman, Senator Harrison A. Williams, Jr., we wish to express our appreciation to you for having assigned Miss Stevens to us.

### **Audit Definitions**

Viewpoints and definitions as to the

objectives of audit work of various categories tend to vary considerably among audit organizations. The following statements are those of the Office of the Auditor General of the State of Michigan in its 1971 annual report.

The governmental post audit function essentially includes three general phases of auditing; namely, financial auditing, compliance auditing, and performance review.

In government, financial auditing is an examination, by a qualified person, of financial and accounting records, documents, and reports of a governmental department or agency to enable the examiner to arrive at an opinion as to the material accuracy and reliability of the information contained therein.

In compliance auditing the examiner determines, usually during the financial examination, that established procedures and regulations are followed, and that related systems and records are adequate and conform to governmental standards.

A performance review is an evaluation of the managerial performance and general level of operational effectiveness of a governmental department or agency as it relates to a planned program as approved by the Legislature.

### **Inadequate Internal Audit Coverage**

Under the financial management concepts expressed by the Congress in the Budget and Accounting Procedures Act of 1950, responsibility for adequate systems of accounting and internal control, including internal audit, is placed with the head of each executive agency.

A recent GAO examination of the accounts of accountable officers at the headquarters office of the National Aeronautics and Space Administration (NASA) revealed a lack of internal audit attention to the activities of such

officers and to the effectiveness of administrative procedures and controls.

This unsatisfactory situation was presented to NASA headquarters officials in a report signed by *H. L. Krieger*, manager of the GAO Washington regional office, as follows:

The Comptroller General, in a memorandum to Heads of Departments and Agencies dated August 1, 1969 (B-161457), reemphasized that department and agency procedures and controls should include systematic internal reviews of accountable officer functions.

In examining into the extent of internal audit coverage given to accountable officer activities, we found that audits had not been performed in this area in recent years for the Headquarters Office.

In our discussions with the Director, NASA Management Audit Office, we were informed that financial audits had been made a number of years ago but no matters of significance were disclosed. The Director stated that the audit office has attempted to use its resources in a balanced way, emphasizing priorities established on the basis of dollar volume, management interest, and other pertinent factors.

We recognize that performing financial reviews, including the activities of accountable officers, must be considered in the context of NASA's total audit requirements. However, a balanced audit coverage must include reviews of financial activities, controls, and procedures inasmuch as it is the individual agencies who have the primary responsibilities in this area. Accordingly, it is our view that increased audit coverage should be directed at evaluating the effectiveness of NASA Headquarters' financial operations.

### Senate Use of GAO Report

The GAO report on "Improvements Needed in Administration of Federal Coal-Leasing Program, Department of

the Interior" (B-169124, Mar. 29, 1972) has been included in full in the printed hearings before the Minerals, Materials, and Fuels Subcommittee of the Senate Interior and Insular Affairs Committee on bills concerned with regulating surface mining operations (Serial No. 92-13, Part 3).

### Timesharing Terminals in GAO

In February of this year, the ADP staff of the Financial and General Management Studies Division began a study of the feasibility of installing timesharing terminals in GAO regional offices. The objectives of this study are to:

- Determine if the installation of timesharing terminals would be of benefit to regional office audit activities.
- Select the vendor or vendors of timesharing services to be used if these services are extended to the regional offices.
- Develop a training program for auditors in the use of timesharing services.
- Develop policies and procedures for the administration of the use of timesharing services.

Currently, the Washington regional office is conducting an evaluation of timesharing services. The results of this work will be used to select a vendor or vendors to supply timesharing services to seven regional offices (Cincinnati, Denver, Kansas City, Philadelphia, San Francisco, Seattle, and Washington) which have agreed to participate in a pilot installation of

timesharing terminals. Upon completion of the pilot study, the ADP staff will be in a position to evaluate the cost of extending timesharing services to all regional offices in relation to the benefits to be gained.

### **GAO Overseas**

The Manila office of the Far East Branch, International Division, closed June 30, 1972, and the functions, duties, and several members of that office

were transferred to Bangkok, Thailand, effective July 1. *Fred E. Lyons* was designated manager.

*Louis W. Hunter*, manager of the New Delhi Office, European Branch, was assigned to the European Branch office, Frankfurt, Germany, as an assistant director, effective August 14.

*Robert H. Drakert* was reappointed by the North Atlantic Council, Brussels, Belgium, as Chairman of the International Board of Auditors of NATO for a period of 1 year beginning August 1, 1972.

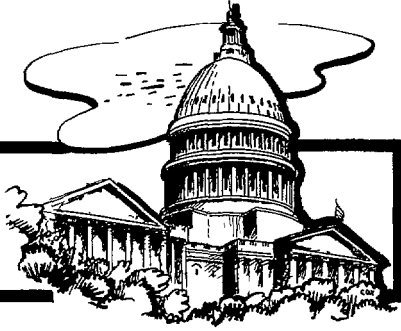
## **Good Target for GAO Auditors Too**

The liberally educated man is articulate. He has a respect for clarity and directness of expression. He is at home in the world of quantity, number and measurement. He thinks rationally, objectively and knows the difference between fact and opinion. When the occasion demands, however, his thought is imaginative and creative. His mind is flexible and adaptable, curious and independent. He can use the written word with judgment and discrimination.

*Authorship unknown*

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# HEARINGS *and* LEGISLATION



By JUDITH HATTER

*Assistant Chief, Legislative Digest Section, Office of the General Counsel*

An integral part of the legislative process is the conduct of hearings by congressional committees. In his discussion of committee activities, George B. Galloway made the following observation about hearings:

\* \* \* Congress also has a right to secure the disclosure of all pertinent facts bearing on proposed legislation, including not only the arguments of special interest groups with axes to grind, but also the testimony of disinterested experts and spokesmen for the public interest.<sup>1</sup>

Officials of the General Accounting Office are frequently requested to appear as witnesses on diverse topics. Fiscal year 1972 saw an increase in participation over the preceding fiscal year. During May and June, for example, GAO was requested to testify on 14 different occasions. A résumé of each presentation follows.

## Access to Records

On May 16, before the House Foreign Operations and Government Information Subcommittee, Robert F. Keller, Deputy Comptroller General, outlined the difficulty GAO has had in obtaining information from executive departments and agencies. Problem

areas have been with the Department of State and the Department of Defense involving relations with foreign countries and certain activities of the Treasury Department, the Federal Deposit Insurance Corporation, and recently, the Emergency Loan Guarantee Board. (Other participants: Messrs. Duff, Rothwell, Smarrelli, Masterson, and Sperry)

Senator Stuart Symington of Missouri discussed at length the continuing executive branch denial of essential information to the General Accounting Office. Referring to Mr. Keller's testimony, he stated:

\* \* \* Reading of this testimony by any Member of Congress can only leave the Member in question with a sense of indignation, because the denials and long delay in the production of executive branch documents to GAO is tantamount to a refusal to give such information to Congress.<sup>2</sup>

## Prescription Drug Procurement and Reimbursement

The Comptroller General, Elmer B. Staats, appeared on May 10 at hear-

<sup>1</sup> George B. Galloway, *The Legislative Process in Congress* (New York, Thomas Y. Crowell Company, 1953), p. 299.

<sup>2</sup> *Congressional Record*, Vol. 118 (June 29, 1972), p. S 15086.

ings on direct and indirect expenditures by Federal agencies for prescription drugs before the Monopoly Subcommittee of the Senate Select Committee on Small Business to discuss GAO work related to procurement and reimbursement for prescription drugs by the Federal Government. Mr. Staats outlined (1) actions taken to insure that only effective and low-cost equivalent drugs, when available, are procured by the Government or paid for under Government sponsored medical programs, (2) information used by physicians in selecting drugs, (3) use of Government specifications in procuring drugs, (4) quality assurance and inspection procedures of Federal agencies, (5) coordination and cooperation between Federal agencies which buy drugs, (6) procurement of drugs of foreign origin, and (7) policies and practices pertaining to furnishing drugs under the Medicare and Medicaid programs. (Other participants: Messrs. *Ahart, Crowther, Collins, Shnitzer, and Fitzgerald*)

### **Narcotic Addiction Treatment and Rehabilitation**

On May 8 *Dean K. Crowther*, deputy director of the Manpower and Welfare Division, discussed the GAO report on Narcotic Addiction Treatment and Rehabilitation Programs in Washington, D.C., before Subcommittee No. 4 of the House Judiciary Committee. The report was made at the request of the Subcommittee's Chairman, Representative Don Edwards of California. Various aspects of the program were reviewed, including pro-

gram goals, criteria used to select patients, sources of funding, number of patients by treatment modality and services available, cost of various modalities of treatment, program assessment efforts, and program results. (Other participants: Messrs. *Elmore and Fenstermaker*)

### **Federal Executive Service**

On May 2 the Comptroller General appeared before the House Manpower and Civil Service Subcommittee to comment on the principal features of 92d H.R. 3807, which would establish the Federal Executive Service. He discussed the bill in relation to its impact on GAO and its contribution to improving the management of the Government's executive manpower resources. (Other participants: Messrs. *Morris, Barclay, Browne, Herbert, and Blair*)

### **Nonappropriated Fund Activities**

On May 10 the Deputy Comptroller General appeared before the House Armed Services Special Subcommittee on Nonappropriated Funds in the Department of Defense to discuss the GAO review of the management of nonappropriated funds in the Department.

Suggestions designed to improve management and controls in the following areas were discussed: accounting for appropriated fund support; allocation of exchange profits of welfare and recreation activities; financing clubs and messes; procurement practices; internal and external audits;

controls over assets; and investments, loans, and grants.

Mr. Keller also discussed major areas that should be considered by the Department of Defense Nonappropriated Fund Management Study Group, which was established to determine what controls are necessary over nonappropriated fund activities and to develop policy guidelines for implementing such controls. (Other participants: Messrs. *Morris and Boegehold*)

On June 26 *Fred J. Shafer*, deputy director, Logistics and Communications Division, also testified before the House Special Subcommittee on the GAO survey of the military commissaries in Europe. The survey, which was undertaken to appraise the adequacy of commissary management and the quality of service to commissary customers, concluded that improvements in inventory and personnel management could raise the level of service to the customers, and specific recommendations for improvement were discussed. (Other participants: Messrs. *Colbs, Davis, and Gregory*)

### **National Environmental Policy Act**

The Comptroller General discussed improvements needed in Federal efforts to implement the National Environmental Policy Act of 1969 before the House Subcommittee on Fisheries and Wildlife Conservation of the Merchant Marine and Fisheries Committee on May 25. Particular attention was directed to preparation of the environmental impact statements required by section 102 of the act. Suggestions for

uniformity in implementation and the guidance and technical assistance role of the Council on Environmental Quality, the Environmental Protection Agency, and the Office of Management and Budget were discussed. (Other participants: Messrs. *Eschwege, Campbell, and Zimmerman*)

### **Consumer Safety Act of 1972**

The Subcommittee on Executive Reorganization and Government Research of the Senate Committee on Government Operations conducted hearings on May 2 on S. 3419, the Consumer Safety Act of 1972. *Gregory J. Ahart*, director, Manpower and Welfare Division, commented on the proposal in light of GAO work in consumer protection. Mr. Ahart observed that improvements are needed in (1) the administration, management, and use of enforcement authorities to better assure consumers the protection intended by programs for regulating pesticides and (2) the enforcement of sanitation standards at meat and poultry slaughtering and processing plants and in the food-processing industry. Overlapping roles of Federal departments in food inspection should be reassessed, and improvements should be made to assure quality, safety, and usefulness of certain drugs and vaccines. (Other participants: Messrs. *Crowther, Myers, Berry, Tipton, and Sperry*)

### **Service Contract Act Administration**

On June 1 *Gregory J. Ahart*, direc-



tor, Manpower and Welfare Division, discussed the Labor Department's administration of the Service Contract Act of 1965 at hearings before the Special Subcommittee on Labor of the House Committee on Education and Labor. Processing of notices of intention and wage determinations, coverage and source of data for wage and fringe benefit determinations, and number of employees covered by individual contracts were among the administrative matters discussed. (Other participants: Messrs. *Henig, Peck, Brown, Miller, and Sperry*)

#### **Davis-Bacon Act Amendments**

*Gregory J. Ahart*, director, Manpower and Welfare Division, presented a statement on June 20, before the Senate Subcommittee on Housing and Urban Affairs on administration of the Davis-Bacon Act by the Department of Labor and a bill, S. 3654, to remove federally assisted housing construction under the National Housing Act and the United States Housing Act of 1937 from the requirements of the Davis-Bacon Act. A determination could not be made of the exact effects of the bill, but program levels pursuant to the two housing acts totaled about \$5 billion in fiscal year 1971.

The findings, conclusions, and recommendations of a report entitled "Need for Improved Administration of the Davis-Bacon Act Noted Over a Decade of GAO Reviews" were discussed. (Other participants: Messrs. *Henig, Peck, Brown, and Miller*)

#### **Single-Family Mortgage Insurance Programs Administration**

On May 4 *Robert J. Piscopink*, audit manager, Detroit regional office, appeared before the Legal and Monetary Affairs Subcommittee of the House Committee on Government Operations. He discussed the GAO review of actions taken in Detroit to improve the management of the single-family mortgage insurance programs authorized by title II of the National Housing Act, as amended, and administered by the Detroit area office of the Department of Housing and Urban Development. (Other participants: Messrs. *Farkas, Birkle, and Sperry*)

#### **Highway Safety Improvement Program**

On June 21 the Comptroller General outlined problems in implementing the highway safety improvement program administered by the Federal Highway Administration for the House Public Works Subcommittee on Investigations and Oversight.

After 8 years, the highway safety improvement program has not become fully effective because (1) the Highway Administration has not required the States to reserve a specific portion of Federal aid highway funds for use in safety programs and (2) quantified goals have not been established. (Other participants: Messrs. *Eschwege, Kelly, Sargol, and Blair*)

#### **Veterans Correspondence Courses**

*Dean K. Crowther*, deputy director,

Manpower and Welfare Division, testified on May 18 before the Senate Veterans Affairs Committee concerning completion rates for veterans taking correspondence courses authorized by the Veterans' Readjustment Benefits Act of 1966.

On the basis of a GAO review of Veterans Administration education records and responses to questionnaires sent to veterans who had enrolled in correspondence courses, it was recommended that VA periodically compile data regarding course enrollment, completion, and discontinuance by veterans and distribute the information to personnel responsible for assisting veterans. It was also suggested that veterans be more fully informed of certain correspondence school practices.

(Other participants: Messrs. *Mikus, Boker, Preiwisch, and Sperry*)

### **Army Intelligence School Relocation**

On May 10 *J. Kenneth Fasick*, director, Logistics and Communications Division, appeared before the Special Subcommittee on Armed Services Investigation of the House Armed Services Committee. He summarized the GAO report on the relocation of the Army Intelligence School from Fort Holabird, Md., to Fort Huachuca, Ariz., and the establishment of an Army Intelligence Center. (Other participants: Messrs. *Rothwell and Ober-son*)

## **The F.A.I.I.R. System**

In a government of, for and by the people, a citizen may expect his legislature to be Functional, Accountable, Informed, Independent and Representative.

These characteristics, then, become the five major criteria for evaluating state legislatures.

*Citizens Conference on State Legislatures Report on an Evaluation of the 50 State Legislatures*



**Robert G. Rothwell**

Robert G. Rothwell was designated deputy director for facilities and acquisition management, Logistics and Communications Division, effective August 20, 1972.

Mr. Rothwell served with the U.S. Army Counterintelligence Corps during World War II. He joined the General Accounting Office in 1951 after working for 5 years in public accounting in New York City. He received Bachelor of Science and Master of Business Administration degrees from New York University and completed the Advanced Management Program, Harvard Business School.

Mr. Rothwell served in numerous supervisory positions in the former Defense Division and was associate director in charge of the Facilities and Support Services Group of that Division until April 3, 1972, when the GAO operating divisions were reorganized. He also served for 3 years with the European Branch.

Mr. Rothwell is a CPA (New York) and a member of the Federal Government Accountants Association. He received the GAO Meritorious Service Award in 1968.

**Marvin Colbs**



Marvin Colbs was appointed manager of the Atlanta regional office, effective August 28, 1972. Mr. Colbs succeeds Richard J. Madison, who retired June 29, 1972, after more than 38 years of Federal service.

Mr. Colbs is a CPA (Pennsylvania) and a member of the American and Pennsylvania Institutes of CPAs. He joined the General Accounting Office in its Dayton regional office in 1955 after 5 years in public accounting. He transferred to the Defense Division in Washington, D.C., in 1963 and since 1970 has been an associate director concerned with reviews of logistics activities in the Department of Defense.

He graduated from Temple University in Philadelphia in 1950. From 1968 to 1969 he attended a 10-month resident course in national security affairs at the National War College at Fort McNair, Washington, D.C. He received a master's degree in international affairs from The George Washington University in September 1969.



**William L. Campfield**

William L. Campfield, associate director, Office of Program Planning, retired from active Government service on June 30, 1972.

Mr. Campfield joined the staff of the former Office of Policy and Special Studies in October 1966 as an assistant director and participated actively on special projects and other activities carried out under the Joint Financial Management Improvement Program.

Before coming to GAO, Mr. Campfield was chief of Professional Activities Division of the Defense Contract Audit Agency (DCAA). From 1952 to 1965, when the DCAA was formed, he served in the U.S. Army Audit Agency, first in San Francisco and later in Washington, D.C. Earlier Federal service included assignments in the Office of Price Stabilization and the Navy Cost Inspection Service.

Mr. Campfield is a CPA and holds a B.C.S. degree from New York University, an M.B.A. degree from the University of Minnesota, and a Ph.D. degree from the University of Illinois. During his Federal service he was frequently granted leaves of absence to be a visiting professor at several major universities. He is the author of many articles published in professional journals and has received numerous citations and awards during his career, including the Army Meritorious Civilian Service Award in 1962 and the GAO Meritorious Service Award in 1970. He is a member of the American Institute of CPAs, the Federal Government Accountants Association, and the American Accounting Association and has been active in committee and other operations of all three.

Mr. Campfield plans to pursue his career further as a teacher. He will be a visiting professor of accounting at Virginia Polytechnic Institute and State University during the fall of 1972 and at the University of Minnesota in the spring of 1973.

**Clifford I. Gould**



Clifford I. Gould was designated an associate director in the Federal Personnel and Compensation Division, effective July 23, 1972. In this position he is responsible for Government-wide reviews of Federal compensation and the acquisition, utilization, and retention of Federal personnel.

Mr. Gould served in the U.S. Air Force from 1946 to 1949 and from 1951 to 1952. He graduated from Kansas State University in 1953 with a bachelor's degree in business administration and has done graduate work in economics. He completed the Program for Management Development at the Harvard University Graduate School of Business Administration in 1962.

Since joining the General Accounting Office in 1954, Mr. Gould has served as an audit manager in the Kansas City regional office, as assistant director of the Far East Branch, and as assistant regional manager in charge of the St. Louis suboffice. He is a member and a past chapter president of the Federal Government Accountants Association. He received the GAO Meritorious Service Award in 1958 and the GAO Career Development Award in 1969.



**Louis Palmer**

Louis Palmer was designated assistant general counsel for military, Office of the General Counsel, effective May 28, 1972.

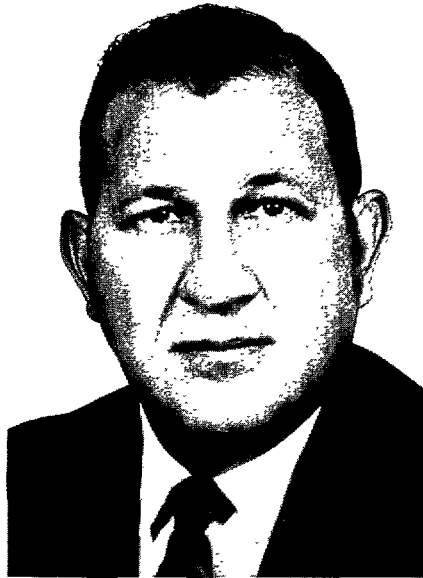
Mr. Palmer joined the General Accounting Office in September 1936 after a short period of service with the Resettlement Administration. He served in the Claims Division in positions of increasing responsibility until 1945, when he transferred to the Office of the General Counsel as an attorney.

Most of his assignments in the Office of the General Counsel have related to the pay and allowances entitlements of members of the uniformed services. He has served as deputy assistant general counsel for military since 1967.

Mr. Palmer received Bachelor of Science and Juris Doctor degrees, both from the University of Utah. He received the GAO Meritorious Service Award in 1961, 1963, and 1966.

He is a member of the Utah State Bar and the Bar of the District of Columbia.

**Robert W. Benton**



Robert W. Benton was designated assistant director for automatic data processing, Financial and General Management Studies Division, effective July 9, 1972, with basic responsibilities in the research and development areas.

Mr. Benton served in the Naval Air Corps from 1944 to 1948. He then attended Purdue University where he received a B.S. degree in 1951 and an M.S. degree in 1959. He has been with GAO since 1969 and previously served as director of the GAO Data Processing Center.

Before coming to GAO he served in the Department of the Army. There he participated in the design and development of the Army Headquarters information system and was the Army representative on the Department of Defense triservice board for the Five Year Defense Program, a member of the Editorial Board for the Army's AIDS technical bulletin series, and the Army data processing expert on the board to evaluate and select a cost model for the Department of the Army. He also assisted in designing and developing the Federal Information Exchange System for OEO/BOB and the first successful computerization of the President's Budget for the Bureau of the Budget.





**Frank Borkovic**

Frank Borkovic was designated manager of the International Division's Saigon office, Far East Branch, effective August 20, 1972. In this position he will be responsible to the director, Far East Branch, for GAO activities and staff assigned to the Saigon office.

Mr. Borkovic served in the U.S. Army from 1954 to 1956. He received a Bachelor of Science degree in business administration with a major in accounting from Geneva College in 1961. He joined the Defense Division in 1961 and was assigned to the International Division in 1969.

Mr. Borkovic is a CPA (Virginia). He received the Meritorious Service Award in 1963, the Career Development Award in 1968, and the GAO Special Educational Award in 1970.

**W. A. Broadus, Jr.**



W. A. Broadus, Jr., was designated assistant director for recruitment and assignment in the Office of Personnel Management, effective July 9, 1972. He is responsible for all GAO professional, secretarial, and support staff recruitment.

Mr. Broadus served in the U.S. Air Force from 1956 to 1960. He graduated with high distinction from Eastern Kentucky University in 1962 with a Bachelor of Science degree in accounting. He has done postgraduate work in business administration at Xavier University and is currently pursuing a master's degree in public administration at The George Washington University.

He joined the Cincinnati regional office in June 1962 and transferred to the Office of Personnel Management in June 1970.

Mr. Broadus is a CPA (Ohio) and a member of the American Institute of CPAs, the American Accounting Association, the Ohio Society for CPAs, and the Federal Government Accounting Association (FGAA). He is currently serving on two national FGAA committees and is past president of the Cincinnati Chapter of FGAA. He received the GAO Career Development Award in 1969.



**John P. Carroll**

John P. Carroll was designated assistant manager of the Washington regional office, effective July 9, 1972.

He served in the U.S. Navy from 1953 to 1955 and joined the General Accounting Office in the New York regional office in June 1958 upon graduation from Iona College, where he received a B.B.A. degree with a major in accounting.

Mr. Carroll was on the internal audit staff of the Federal Aviation Agency from August 1963 to March 1966 when he joined the Washington regional office. Except for 1 year in the Defense Division, Mr. Carroll has been with the Washington regional office.

Mr. Carroll is a member of the Northern Virginia Chapter of the Federal Government Accountants Association.

**Donald E. Day**



Donald E. Day was designated an assistant director in the Procurement and Systems Acquisition Division, effective July 9, 1972. In this position he will share the responsibility for auditing work pertaining to the acquisition of major systems by defense and civil agencies.

Mr. Day served in the U.S. Marine Corps from 1951 to 1953. He received a Bachelor of Science degree with a major in accounting from the University of Maryland in 1958. Since joining GAO in 1958, he has had responsibility for assignments in procurement, communications, construction, and major acquisitions.

Mr. Day is a CPA (Maryland) and a member of the American Institute of CPAs and Beta Alpha Psi.



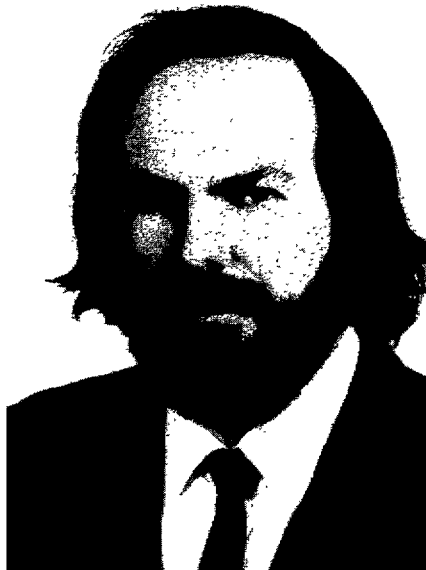
**George L. DeMarco**

George L. DeMarco was designated an assistant director in the International Division, effective July 9, 1972. He is responsible for the audits of international security and other international programs of the Department of Defense.

Mr. DeMarco served in the U.S. Air Force from 1950 to 1954. He joined the General Accounting Office in August 1959 in the New York regional office. He served with the Far East Branch in Tokyo in 1963 and 1964 and, from 1968 to 1970, was associated with the Department of Defense Audit Office in Taipei. Since returning to GAO in 1970, he has been assigned to the International Division in Washington and, since January 1971, has been audit manager in charge of defense international activities.

Mr. DeMarco received a Bachelor of Science degree in accounting at Fairleigh Dickinson University in 1959 and has recently done graduate work in public administration at The George Washington University.

**Thomas E. Dooley**



Thomas E. Dooley was designated an assistant director in the Financial and General Management Studies Division, effective July 9, 1972. In this capacity he is responsible for the research, development, and application of benefit/cost methodology (including models for this purpose), parametric cost estimate techniques, and for providing technical assistance in the use of these methods in GAO review work.

Mr. Dooley was a member of the U.S. Air Force Reserve from 1956 to 1964. He was graduated from the University of Maryland with a Bachelor of Science degree in mathematics and a minor in electrical engineering. He has taken a number of graduate courses in data processing, economics, and mathematics and is continuing his education toward a degree in managerial economics at The American University.

Mr. Dooley joined the staff of the General Accounting Office in December 1970. During his service with GAO he has provided expert assistance on a number of reviews dealing with major weapon systems and space systems. Prior to joining GAO, Mr. Dooley was with the Institute for Logistics Management, Resource Management Corporation, and Vitro Laboratories, where he participated in a variety of operations research and resource analysis studies.



**Robert V. Farabaugh**

Robert V. Farabaugh was designated an assistant director in the Financial and General Management Studies Division, effective July 9, 1972. In this position he is responsible for assisting audit staffs in the implementation of systems analysis in audits and reviews.

Mr. Farabaugh served in the U.S. Air Force from 1954 to 1958. He was graduated from St. Francis College in 1962 with a Bachelor of Science degree in accounting. While in college he was on the staff of a public accounting firm.

He joined the staff of the General Accounting Office in 1962 and participated in various audit assignments in the former Civil Division. In 1969 he was awarded a fellowship for graduate study at the University of California at Irvine under the Educational Program in Systems Analysis. Upon completion of study he was transferred from the Civil Division to the systems analysis group in the former Office of Policy and Special Studies.

Mr. Farabaugh is a CPA (Virginia) and a member of the Association for Public Program Analysis.

**Martin J. Fitzgerald**



Martin J. Fitzgerald was designated attorney-adviser for legislation in the Office of Legislative Liaison, Office of the Comptroller General, effective July 9, 1972. He has been serving in the Office of Legislative Liaison since September 1970.

Prior to joining GAO in the Office of the General Counsel in 1968, Mr. Fitzgerald was a law clerk to the Michigan Court of Appeals in Detroit.

He was graduated *magna cum laude* from Catholic University of America in 1964 with an A.B. degree in English literature and received his J.D. degree from The Georgetown University Law School in 1967. Mr. Fitzgerald is a member of Phi Beta Kappa and was admitted to the State Bar of Michigan and the Federal Bar Association.





**Robert M. Gilroy**

Robert M. Gilroy was designated assistant director in the Office of Internal Review, effective July 9, 1972.

Mr. Gilroy served in the U.S. Navy from 1951 to 1953. He was graduated *cum laude* from the University of Scranton in 1957, receiving a Bachelor of Science degree in business administration with a major in accounting.

Since joining the General Accounting Office in 1957, Mr. Gilroy has had a wide variety of assignments and responsibilities in the Philadelphia regional office, the European Branch in Frankfurt, Germany, and the Defense Division in Washington. In addition, he was on loan for a year to the Senate Select Committee on Improper Activities in the Labor or Management Field. He has been associated with the Office of Internal Review since November 1971.

Mr. Gilroy received a GAO Superior Performance Award in 1967 and was a participant in a Meritorious Service Group Award in 1970. He is a member of the Federal Government Accountants Association.

**James L. Hedrick**



James L. Hedrick was designated an assistant director in the Financial and General Management Studies Division, effective July 3, 1972. In this position he is responsible for research of state-of-the-art evaluation, including measurement of its benefits, design of evaluations, survey of status and progress of Federal agency evaluations, and provision of technical assistance in the use of this information in GAO reviews.

Mr. Hedrick received both a Bachelor of Science and a master's degree in agricultural economics from Virginia Polytechnic Institute and a Ph.D. in economics from North Carolina State University.

Prior to joining the General Accounting Office, Mr. Hedrick was with the Institute for Interdisciplinary Studies, the Resource Management Corporation, and Operations Research, Inc., where he directed studies of numerous Federal programs and activities. Mr. Hedrick also served in the Economic Research Service, Department of Agriculture, where he participated in studies of the effects of farm support programs on land use and land values and the effects of highway and river basin development.



**Robert D. Jones**

Robert D. Jones was designated an assistant director in the Financial and General Management Studies Division, effective July 9, 1972. In this capacity he is responsible for providing assistance in systems analysis to the General Government Division and the Logistics and Communications Division and for assisting in GAO training in systems analysis.

Mr. Jones served in the U.S. Army from 1951 to 1953. He received a Bachelor of Science degree in accounting from the Pennsylvania State University in 1957 and was elected to the Phi Kappa Phi national honorary society. He began his career in the General Accounting Office in June 1957 with the Philadelphia regional office. Mr. Jones joined the systems analysis group, Office of Policy and Special Studies, following completion of the Mid-Career Program in Systems Analysis at Stanford University in June 1968.

**Daniel P. Leary**



Daniel P. Leary was designated assistant manager in the Washington regional office, effective July 10, 1972.

Mr. Leary served in the U.S. Army from 1953 to 1955. After receiving a Bachelor of Science degree from LaSalle College in 1959, he joined the General Accounting Office. He received a Master of Business Administration degree from The American University in 1962. In 1969 he attended the Program for Management Development at the Harvard University Graduate School of Business Administration.

He is a CPA (Maryland) and a member of the National Association of Accountants.



**James P. Oliver**

James P. Oliver was designated an assistant director in the Financial and General Management Studies Division, effective July 9, 1972. He will be responsible for cooperative assistance work and accounting systems approval for a significant segment of the Department of Defense.

Mr. Oliver is a graduate of the University of Kentucky, attaining B.A. and M.A. degrees in economic history. He was a fellow and graduate assistant in economic history at the University of Kentucky. He also attended the University of Florida, Harvard University, and The George Washington University for specialized courses.

Mr. Oliver joined the staff of the General Accounting Office in December 1968, upon retirement as a commander from the United States Navy. Prior to joining the General Accounting Office, he held responsible positions involving supply management and audit functions.

**John R. Ritchie**



John R. Ritchie, an assistant director in the Procurement and Systems Acquisition Division, retired June 30, 1972, after a career of Federal service extending over a period of almost 31 years, all of which were with the General Accounting Office.

Mr. Ritchie holds a Bachelor of Science degree from the University of Missouri and did graduate work in accounting from 1953 to 1955 at Denver University, where he was elected to membership in Beta Alpha Psi national honorary accounting fraternity.

Mr. Ritchie had been with GAO since August 1941 and was assigned to the staff of the former Defense Division in August 1956. He received the GAO Meritorious Service Award in 1967.



**Bertram H. Rosen**

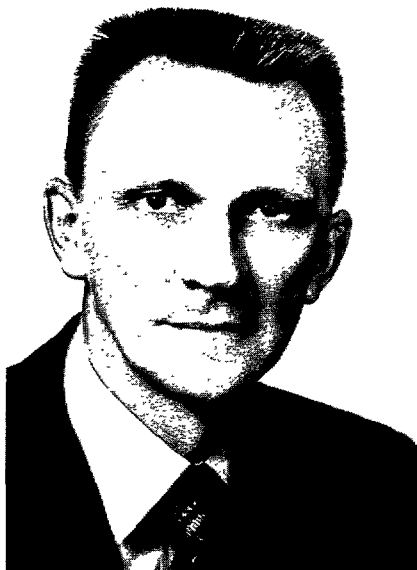
Bertram H. Rosen was designated an assistant director in the Financial and General Management Studies Division, effective July 9, 1972. He is the Executive Secretary of the Joint Financial Management Improvement Program (JFMIP) and is responsible for developing and coordinating its activities.

Mr. Rosen received a Bachelor of Science degree with a major in accounting from the Ohio State University in 1961.

He first joined the General Accounting Office in 1961. Prior to accepting a position with the National Aeronautics and Space Administration in 1967, he had varied experience in the conduct of audits in the Civil Division. In November 1969 Mr. Rosen became Executive Secretary of the JFMIP and has served with the chairmen of that program at the Department of Treasury and the Office of Management and Budget.

Mr. Rosen is a member of the Federal Government Accountants Association.

**Frank V. Subalusky**



Frank V. Subalusky was designated an assistant director in the Resources and Economic Development Division, effective July 9, 1972. In this position he is responsible for audit assignments involving housing programs of the Department of Housing and Urban Development.

Mr. Subalusky served in the U.S. Air Force from 1950 to 1954. He joined the General Accounting Office in 1958 after receiving a Bachelor of Science degree in business administration with a major in accounting from Pennsylvania State University.

Since coming to the General Accounting Office, Mr. Subalusky has had widely diverse assignments, including responsibility for audits at the Department of Agriculture; the U.S. Postal Service; the Tennessee Valley Authority; the Department of the Interior; the Department of the Treasury; the Department of Health, Education, and Welfare; and the Department of Housing and Urban Development.

In 1969 Mr. Subalusky attended the first Brookings Institution Intergovernmental Affairs Fellowship Program. He received the GAO Meritorious Service Award in 1964 and the GAO Superior Performance Award in 1970.

Mr. Subalusky is a CPA (Virginia) and a member of the American Institute of CPAs and the National Association of Accountants.





**Stewart L. Tomlinson**

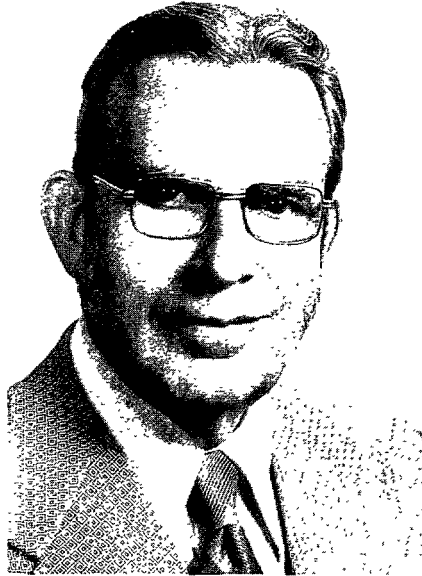
Stewart L. Tomlinson was designated an assistant director in the International Division, effective July 9, 1972. He is responsible for Far East country and regional program audits of the International Division.

Mr. Tomlinson served in the U.S. Army from 1954 to 1957. He joined the Civil Division of the General Accounting Office in 1957. A member of the International Division since its formation, he was assigned to the Far East Branch in Tokyo from 1960 to 1962 and in Honolulu from 1967 to 1969.

Mr. Tomlinson has had a wide variety of responsibilities with GAO, including active participation in the application of new concepts in making countrywide and regional reviews of U.S. foreign assistance activities.

He received a Bachelor of Science degree from Susquehanna University in 1954 and has done graduate study at Pennsylvania State University and The American University. He is a CPA (Virginia) and a member of the American Institute of CPAs.

**Lloyd H. Volkart**



Lloyd H. Volkart was appointed senior attorney, Office of the General Counsel, effective July 9, 1972.

Mr. Volkart joined the General Accounting Office in October 1930 and served in various positions in the former Postal Accounts, Records, and Claims Division before joining the Office of the General Counsel in 1960.

He attended Gates Business College, The George Washington University, and the Washington College of Law. He received his LL.B. degree in 1939 and holds a J.D. degree from The American University. He is a member of the District of Columbia Bar.

### Office of the Comptroller General

The Comptroller General, *Elmer B. Staats*, addressed the Naval War College, Newport, R.I., on "GAO Activities in Relation to the Department of Defense," July 17.

Mr. Staats has an article entitled "The GAO: Government Watchdog, Analyst, Critic," in the June 15 issue of *The Money Manager*. This article is reprinted in this issue of the *Review* on page 1.

*Robert F. Keller*, Deputy Comptroller General, participated in a panel at the American Bar Association Convention, San Francisco, August 15, on "Advent of the Uniform Cost Accounting Standards and Implications."

*E. H. Morse, Jr.*, Assistant Comptroller General, discussed the work of GAO with students of the Maxwell Graduate School of Syracuse University, June 12. On August 30 he discussed "Accountability in the Administrative Process: The Role of the General Accounting Office" at the Civil Service Commission's Kings Point, N.Y., executive seminar on "The Dynamics of Public Policy."

Mr. Morse has been reappointed as a member of the joint AICPA-NASBA Committee on Professional Recognition and Regulation.

*A. T. Samuelson*, Assistant Comptroller General, has an article entitled

"The New Postal Service: A Managerial Challenge" in the June issue of *Management Accounting*.

### Office of the General Counsel

*Paul G. Dembling*, general counsel:

Participated in the National Institute on Public Contracts sponsored by the American Bar Association and spoke on "Public Contracts and Bid Protest Remedies" at Washington, D.C., May 11-12.

Spoke before the Advisory Board of Federal Contract Reports on "GAO Views the S&E Decision of the Supreme Court" at Washington, D.C., May 23.

Attended the American Bar Association annual convention and participated in a panel discussion on "Interest on Delayed Payments" at San Francisco, August 11-20.

*Robert H. Rumizen*, assistant general counsel:

Spoke before the National Contract Management Association on "The Procurement of Professional Services—Competition and Codes of Ethics" at San Francisco, May 22-24.

Spoke before the Defense Advanced Procurement Management Course on "Problems in Formal Advertising" at Fort Lee, Va., June 8.

*Paul Shnitzer*, assistant general counsel:

Participated in a Government Contracts Symposium sponsored jointly by the Detroit Chapter of the Federal Bar Association and the Government Contracts Association of Michigan at Detroit, May 17-20.

Spoke before the 19th Annual Institute on Government Contracts sponsored by The George Washington University's National Law Center and Federal Publications, Inc., on "The Year's Highlights: GAO/Laws/Regulations" at Washington, D.C., May 22-23.

Spoke before the Defense Advanced Procurement Management Class on "Problems in Formal Advertising" at Philadelphia, August 2-3.

*Martin Glass*, attorney-adviser, participated in a Government Contracts Symposium sponsored by the Detroit Chapter of the Federal Bar Association and the Government Contracts Association of Michigan at Detroit, May 17-20.

### Office of Legislative Liaison

*Martin J. Fitzgerald* and *Roger L. Sperry* spoke before seven groups of high school and college students from Connecticut in June, July, and August on GAO's role in the relationship between the Congress and the executive branch. The students were participating in an internship program sponsored by Senator Lowell P. Weicker, Jr., and Congressmen Stewart B. McKinney and Robert H. Steele, all of Connecticut.

### Office of Policy

*Allen R. Voss*, director, spoke at the Civil Service Commission executive seminar on Federal Procurement Management on "The Oversight Role of GAO," Oak Ridge, Tenn., June 28.

*Eugene L. Pahl*, assistant director, discussed GAO functions and activities with the Government Operations Committee of the National Association of Manufacturers, June 7.

### Federal Personnel and Compensation Division

*Forrest R. Browne*, deputy director, addressed the Seminar for Public Program Management at the U.S. Civil Service Commission Executive Seminar Center, Oak Ridge, Tenn., August 10. He spoke on "GAO and Its Responsibilities."

*Robert H. Campbell*, supervisory auditor, attended the Management of Managers Course at the University of Michigan, June 11-15.

### Financial and General Management Studies Division

*Donald L. Scantlebury*, director:

Spoke to a workshop at the 31st annual International Meeting of the Institute of Internal Auditors at Los Angeles, June 19. The subject was "Standards for Audit of Governmental Organizations, Programs, Activities, and Functions."

Led a research project for the Northern Virginia Chapter of FGAA on educational opportunities for op-

erational auditors that won first prize in the FGAA annual workshop competition.

Has been appointed to the Committee on Auditing Procedure, a senior committee of the American Institute of Certified Public Accountants. He will serve a 3-year term beginning October 1, 1972.

*Edward J. Mahoney*, deputy director for automatic data processing:

Spoke to the Government-wide Interagency Committee on Automatic Data Processing on May 9 on "GAO's Increased Emphasis on Automatic Data Processing Activities in Government."

Spoke to the Washington area Federal ADP Users Group on May 23 on "GAO's Increased Emphasis on ADP under the New Organizational Alignment."

Addressed the spring meeting of the Business Equipment Manufacturers Association at Boca Raton, Fla., on May 26 on "Major Government Procurement Trends."

*Mortimer A. Dittenhofer*, assistant director:

Spoke on "The CPA and Standards for the Auditing of Governments" before the Missouri Society of Certified Public Accountants on May 17 in Jefferson City, Mo., and at the California CPA Foundation in San Francisco, May 23.

Discussed the audit standards and model audit laws on May 28 with the National Accounting and Auditing Committee at the Municipal Finance Officers Association National Convention in Denver.

Spoke on "Research Project on State Internal Auditing" at a President's Breakfast of the Institute of Internal Auditors in Los Angeles, June 20.

Attended the investiture of Joseph H. Burris as State Legislative Auditor of Louisiana, August 1. A congratulatory letter from the Comptroller General was presented to Mr. Burris.

Presided over a workshop at the National Legislative Conference Convention in New Orleans on "Accounting Principles for State Accounting," August 2.

Has been appointed editor of the Government Section of the Institute of Internal Auditors' publication, *Internal Auditor*.

*Rodney E. Espe*, supervisory auditor, spoke on May 26 to the Society of Certified Public Accountants at Los Angeles on "The CPA and Standards for the Auditing of Governments."

#### **Conference on Evaluation of Education Programs**

From May 25 to 27, in cooperation with the National Academy of Public Administration, the Financial and General Management Studies Division conducted a conference in Rockville, Md., on evaluation of education programs. This was the second in a series of conferences dealing with program evaluation.

Drawing from their experience with recent education programs, researchers, consultants, and Government officials in education discussed the methods and the problems of evaluat-

ing program results in the education field.

GAO participants at the conference were: *Elmer B. Staats*, Comptroller General; *Thomas D. Morris*, *E. H. Morse, Jr.*, and *A. T. Samuelson*, Assistant Comptrollers General; *Allen R. Voss*, Office of Policy; *Gregory J. Ahart*, *Dean K. Crowther*, *Morton E. Henig*, *Harold L. Stugart*, *George D. Peck*, *James E. Kelly*, and *Marcus R. Clark*, Manpower and Welfare Division; *Stephen J. Varholly* and *Willard L. Russ*, General Government Division; *H. L. Krieger* and *Charles H. Moore*, Field Operations Division; *D. L. Scantlebury*, *Frederic H. Smith*, *Keith E. Marvin*, *James Hedrick*, and *Ralph J. Guokas*, Financial and General Management Studies Division.

### International Division

*Joseph E. Kelley*, audit manager, attended the Program for Management Development at the Harvard University Graduate School of Business Administration, Boston, from February to May 1972.

*Eugene C. Wohlhorn*, assistant director, attended the Executive Management Program at Pennsylvania State University, July 2-28.

*Frank M. Zappacosta*, assistant director, spoke on the role and functions of GAO at the Basic Administrative Course conducted by the Foreign Service Institute for State Department personnel, July 27.

*Samuel W. Bowlin*, audit manager, was a fellow in the program of Fellowships in Congressional Operations for Executives sponsored by the Civil

Service Commission in cooperation with the American Political Science Association, Washington, D.C., from November 1971 through August 1972.

### Manpower and Welfare Division

On August 14 *John D. Heller*, associate director, addressed the Twelfth Workshop on Public Welfare Research and Statistics at the Statler Hilton Hotel in Washington, D.C. The subject of his talk was "Audits of Social Programs—The Auditor As He Relates to the Researcher."

### Procurement and Systems Acquisition Division

*Harold H. Rubin*, deputy director, lectured on the GAO audit function at the Civil Service Commission Executive Institute on Management of Scientific and Engineering Organizations, held at the National Academy of Sciences, April 21. Mr. Rubin was also a panelist on Federal Patent Policy and Accounting Practices and Disclosures in a seminar entitled "Toward a Definition of Research and Development," conducted by Edward & Hanley, a stock brokerage firm, on June 8.

*James H. Hammond*, deputy director, spoke on Government-contractor relationships at the Eleventh Annual Government Procurement Seminar co-sponsored by the Government Contractors Association and the Detroit Chapter, Federal Bar Association, Detroit, May 18.

*Andrew B. McConnell*, assistant director, was a guest lecturer on Au-

gust 14 at the Operational Test and Evaluation Force, U.S. Naval Base, Norfolk, Va. He spoke on GAO activities in connection with the acquisition of major weapons systems, with particular emphasis on testing.

*Timothy D. Desmond*, supervisory management analyst, participated in the Army's 11th annual operations research symposium on risk analysis at Duke University, May 16-18. His topic was developmental prototyping of major weapons systems as a means of reducing program risk.

*R. Stanley LaVallee*, operations research analyst, spoke on some aspects of efficiency in defense management at the Military Operations Research Symposium at the U.S. Air Force Academy at Colorado Springs, June 27.

### Resources and Economic Development Division

*J. Dexter Peach*, assistant director, participated in a seminar on Federal Organization for Federal Executives at the Federal Executive Institute, Charlottesville, Va., July 23-27.

*Edward A. Densmore, Jr.*, assistant director, addressed the Agency Management Analysis Officers Group on "Program Auditing in the General Accounting Office" in Fredericksburg, Va., June 12.

*Roy J. Kirk*, supervisory auditor, participated in the Inter-Governmental Affairs Fellowship Program, January 10-March 30, Richmond, Va.

### Transportation and Claims Division

*W. F. McDade*, supervisory transportation specialist, and *Lowell James*, supervisory management auditor, attended the semiannual meeting of the Cargo and Passenger Accounting Committees of the Airline Finance and Accounting Conference, Washington, D.C., September 19-21. Mr. McDade discussed various problems encountered by carriers in connection with Government traffic. Mr. James reported on the current status of the implementation of the Joint Agency Transportation Study recommendations.

### Field Operations Division

*Ramon A. Looney*, supervisory auditor, Atlanta, was elected director of membership of the Atlanta Chapter of FGAA for fiscal year 1973.

On July 27 *Martin J. Cain*, audit manager, Chicago, spoke to the Kiwanis Club of LaGrange, Ill., on the mission of GAO.

*Paul I. Wilson* and *Leonard J. Yoerger*, supervisory auditors, St. Paul, were elected treasurer and director, respectively, of the Minneapolis-St. Paul Chapter of FGAA for fiscal year 1973.

*Elmer Taylor, Jr.*, assistant regional manager, Cincinnati, was elected vice president of the Central Region of FGAA for fiscal year 1973.

Cincinnati staff members will hold the following offices in the Cincinnati Chapter of FGAA during the 1973 fiscal year: *James L. Silvati*, supervisory auditor, president; *Daniel L.*

*McCafferty*, supervisory auditor, secretary; and *John D. Gentry*, auditor, director.

Dallas staff members will hold the following offices in the Dallas Chapter of FGAA during the 1973 fiscal year: *Ronald D. Kelso*, audit manager, president; *Daniel C. White*, audit manager, president-elect; *Patrick T. Stelzer*, supervisory auditor, treasurer; and *Deon H. Dekker*, assistant regional manager, director. Mr. White has also been named to the Data Processing Committee of the Dallas Chapter, Texas Society of CPAs for fiscal year 1973.

*Irwin M. D'Addario*, regional manager, Denver, conducted a seminar on performance auditing for a graduate class in Public Administration at the University of Denver, May 9.

*John E. Murphy*, assistant regional manager, and *Billie J. North*, audit manager, Denver, were appointed to the Committee for Recruiting Minority Students, Colorado Society of CPAs.

*Bernard L. Lowery*, audit manager, Denver, was elected treasurer of the Denver Chapter, National Contract Management Association, for fiscal year 1973.

*Edgar L. Hessek*, audit manager, Denver, was elected director of meetings of the Denver Chapter of FGAA for fiscal year 1973.

*Duane A. Lownsberry*, audit manager, Denver, was appointed to the Committee for Assistance to Minority Businessmen, Colorado Society of CPAs.

*Earl D. McCartney*, audit manager, Denver, was appointed to the National Public Relations Committee of the FGAA and to the Newsletter Commit-

tee of the Utah Association of CPAs.

*Cleamont D. Palmer*, supervisory auditor, Denver, was elected a director of the Salt Lake City Chapter, FGAA, for the 1972-73 year. He was also appointed to the Social Responsibilities Committee of the Utah Association of CPAs.

Newly elected officers of the Detroit Chapter of FGAA for fiscal year 1973 are: *Robert O. Gray*, audit manager, president; *Solon P. Darnell*, audit manager, executive vice president; *Oliver W. Krueger*, audit manager, treasurer; and *Donald R. Schmidt*, audit manager, secretary; and *Charles R. Coughenour* and *Hiawatha H. Barber*, supervisory auditors, and *Robert J. Piscopink*, audit manager, directors.

Cleveland staff members will hold the following offices in the Cleveland Chapter of FGAA for fiscal year 1973: *Melvin G. McCombs*, supervisory auditor, president; *William F. Laurie*, supervisory auditor, secretary; and *John H. Gellner*, audit manager, director.

*Kenneth F. Luecke*, assistant regional manager, Kansas City, and *Mortimer A. Dittenhofer*, assistant director, Financial and General Management Studies Division, met with members of the Nebraska Legislature, July 21. The purpose of the meeting was to discuss the advantages of making the responsibility for audit of State agencies a legislative function and the advantages to the State of performance auditing.

*J. H. Stolarow*, regional manager, Los Angeles, participated in a program by Federal Publications, Inc. entitled "Living with GAO," July 20-21 at Century City, Calif.



*Victor Ell*, audit manager, Los Angeles, spoke to the Beta Alpha Psi Accounting Society of California State University at Los Angeles, May 18, on the functions, duties, and responsibilities of GAO. He was elected president of this University's School of Business and Economics Alumni Association in June and will also serve as vice president of the Los Angeles Chapter of FGAA for fiscal year 1973.

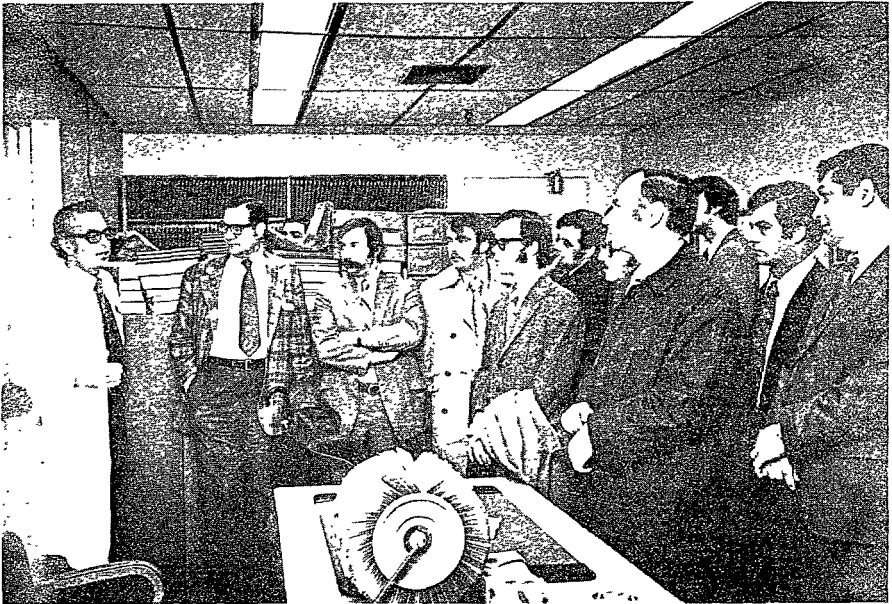
*James E. Cravens*, management analyst, Los Angeles, spoke before the National Contract Management Association, San Fernando Valley Chapter,

May 18, on "Defense Profits."

*Joseph J. Eglin, Jr.*, supervisory auditor, Los Angeles, was a team teacher in a CSC course on Governmental Bookkeeping and Accounting. The course was held in Honolulu, Hawaii, June 5-9.

*Garry W. Martin*, supervisory auditor, Los Angeles, participated as a member of the State of California Qualifications Appraisal Panel, August 7.

The AEC Brookhaven National Laboratory on Long Island was the site of a faculty seminar on May 4-5 spon-



AEC Brookhaven National Laboratory Photo

*Dr. Stanton Cohn explains the applications of a whole-body counter used in medical research at the Brookhaven National Laboratory on Long Island to participants of a faculty-placement conference cohosted by the Boston and New York regions of GAO on May 4 and 5. From the left: Dr. Stanton Cohn, Brookhaven; Jack Obecny, Rutgers University; Val Bielecki (mostly hidden), New York; Robert Barbieri, New York; Edward Kennedy, New York; Robert McKay, St. Peter's College; Phil Doherty, Boston; Stanley Dennis, Suffolk University; Joseph Eder, Boston regional manager; Ron Fekete (partially hidden), New York; Herve Guerette, Boston; Alfonso Strazzullo, New York regional manager.*

sored by the New York and Boston Regions. *Alfonso J. Strazzullo*, regional manager, New York, and *Joseph Eder*, regional manager, Boston, were cohosts to representatives of several colleges and universities in the New York and New England area. As part of the seminar, special tours of several laboratory facilities were made and tied in with related GAO past and present audits. (See picture on page 141.)

*Walter H. Henson*, regional manager, Norfolk, was a guest speaker at the June Management Information Luncheon at the Norfolk Naval Shipyard. He spoke on "The General Accounting Office—Its Role as It Affects Activities of the Department of Defense."

*George J. Anthony* and *John T. Ratliffe*, supervisory auditors, Norfolk, spoke before the following groups on "Computer Output in Microfilm Form":

The Tidewater ADP Council in Norfolk, July 13.

The Federal Executive Association of Greater Tidewater Area in Virginia, August 2.

The Data Processing Management Association of Norfolk, August 10.

Norfolk staff members were recently appointed as associate directors to the following committees of the Hampton Roads Chapter of NAA: *Steve Fox* and *Douglas Mills*, Committee for Membership Attendance; *Ronald Maccaroni*, Committee for Membership Acquisition; *Nixon Williams* and *John Ratliffe*, Committee for Special Projects; *Albert Hutchens* and *Priscilla Williams*, Committee on Meetings; and

*Lindsay Harwood*, Committee for Member Relations.

*Harold D'Ambrogia*, assistant regional manager, and *Mary Noble*, supervisory auditor, San Francisco, were elected president and secretary, respectively, of the San Francisco Chapter of FGAA for fiscal year 1973.

*Jack L. Birkholz*, audit manager, San Francisco, chaired a 2-day conference, "Audits of Federally Financed Programs," sponsored by the California State Society of CPAs.

*Frank Graves*, supervisory auditor, San Francisco, was a recent guest speaker at the Lawrence Livermore Laboratory, Summer Computer Institute. His subject was "The Use of Computers in the Federal Government."

*Gary D. McGill*, supervisory auditor, Seattle, participated in a seminar sponsored by the Puget Sound Governmental Conference at Seattle, July 11. His topic was "Housing for the Indian Poor."

*Kenneth W. Edmonson*, supervisory auditor, Seattle, has been appointed a member of the Accounting and Finance Technical Advisory Committee of the Seattle Community College District. The purpose of this committee is to assist in planning occupational curriculums.

*H. L. Krieger*, regional manager, Washington, was elected to serve on the Economic Opportunity Committee, American Institute of CPAs, for fiscal year 1973.

*Gretchen C. Schwarz*, supervisory auditor, Washington, was elected president of the Northern Virginia Chapter of FGAA for fiscal year 1973. Also

*John C. Carroll*, assistant regional manager, and *Margaret H. Dyess* and *Jerry C. Skelly*, supervisory auditors, were elected directors of this chapter.

### FGAA Symposium

The 21st annual national symposium of the Federal Government Accountants Association was held in Los Angeles, June 21–23, 1972. The primary theme concerned the internal and external forces of change. GAO participants in the plenary sessions and seminars were:

*Robert F. Keller*, Deputy Comptroller General, panelist on plenary session on “The Internal Forces of Change.”

*E. H. Morse, Jr.*, Assistant Comptroller General, presiding at plenary session on “The CPA and Financial Management.”

*Gregory J. Ahart*, director, Manpower and Welfare Division, moderator for plenary session on “An Evaluation of Reordering Priorities—Converting from Defense to Non-Defense Activities.”

*William L. Campfield*, associate director, Office of Program Planning, moderator for plenary session on “New Horizons in Accounting Education.”

*Mortimer A. Dittenhofer*, assistant director, Financial and General Management Studies Division, moderator for workshop on “Developments in Accounting Research.” *Donald L. Scantlebury*, director, Financial and General

Management Studies Division, and *John Carroll* of the Washington regional office also participated in this workshop.

*Harold Fine*, Office of Personnel Management, assistant in conducting a workshop on “Dynamic Report Writing.”

GAO representatives on the 14-member symposium committee were:

From the Los Angeles regional office—

*Milo L. Wietstock*, chairman

*Victor Ell*

*Robert L. Stotts*

*Patrick F. Gormly*

From Washington—

*Harry C. Kensky*, associate director, Financial and General Management Studies Division

*Sam Pines*, assistant director, Procurement and Systems Acquisition Division

### Congressional Operations Fellows

Twenty-six Federal employees, eight political scientists, six journalists, and one law professor have been selected as fellows for the 1972–73 Congressional Operations program administered by the Civil Service Commission and the American Political Science Association. The program starts November 9, 1972.

The objective of the program is to give promising young Federal executives, journalists, political scientists, and educators a thorough understanding of congressional operations.

The program includes a comprehensive orientation by the American Political Science Association to prepare fellows for work assignments with Representatives, Senators, and congressional committees. Weekly seminars with members of Congress and authorities

on government are conducted throughout the fellowship year.

GAO participants are:

*John J. Adair*, Washington regional office

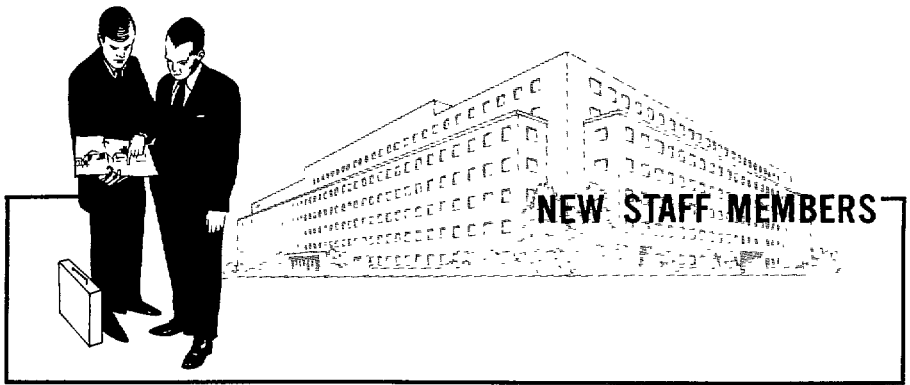
*Carl F. Bogar*, Procurement and Systems Acquisition Division

## Productivity of Federal Employees

\* \* \* our productivity has been increasing and \* \* \* I think the Government is being effectively managed. Now, there are many points of view that sometimes you get when people are dealing with the administration of the law, but there are certain things that are required in that law because we have three branches of Government and there are checks and balances. It may not be the most efficient way in terms of operating something but it's something that meets the public interest and is demanded of the Federal administrator and even with constraints that we have on management in this public administration area, I think it's a tribute to Government management that with population growth, program growth, and growth in industry and State, that we have maintained a fairly steady work force. This indicates to me that Federal employees are all right in terms of producing what is expected of them.

*Robert E. Hampton*

Chairman, U.S. Civil Service Commission  
Speaking before the House Post Office and  
Civil Service Committee, March 2, 1972



The following new professional staff members reported for work during the period May 16, 1972, through August 15, 1972.

<b>Office of Federal Elections</b>	Greenhalgh, Gary L. Lawson, Gary V. Roman, Peter F. Sullivan, Lawrence R.	University of Virginia University of Virginia Yale University U.S. Postal Service
<b>Federal Personnel and Compensation Division</b>	White, Francis W., Jr.	U.S. Army
<b>Financial and General Management Studies Division</b>	Gottlieb, Benjamin I. Hedrick, James L.  Rosen, Bertram H.	Health, Education, and Welfare Resource Management Corporation Ohio State University
<b>Office of the General Counsel</b>	Conway, Richard J. Gallagher, Andrew K. Lupton, Johnnie E.  Miller, John R.   Monsma, Edwin J.  Peaco, James W., Jr.	Georgetown Law School Duke University The George Washington University The George Washington University and Mason, Fenwick and Lawrence Law Firm  Office of Management and Budget  U.S. Air Force
<b>General Government Division</b>	Dobrow, Donald D.	State Department
<b>Logistics and Communications Division</b>	Haynes, Frederick L.	Department of Defense

NEW STAFF MEMBERS

<b>Manpower and Welfare Division</b>	Solomon, Matthew R.	U.S. Postal Service
<b>Procurement and Systems Acquisition Division</b>	Fundingsland, Osmund T.	Consultant—GAO
<b>Washington Headquarters Divisions Career Group</b>	Allard, Clarke W. Aughenbaugh, Keith W. Baney, Robert J. Berran, David I. Bickert, Raymond G. Bixler, David P. Bracey, Karen E. Bramble, Peter M., Jr. Chambers, Christopher B. Coleman, Frank D. Eirich, Thomas H. Evangelista, Steven A. Felder, Frederick W. Fleming, Daniel M. Flood, Theodore L. Fulk, Harold W. Gross, Frank J. Hackett, David S. Hamilton, James R. Hamm, Robert E. Harris, Herbert M. Henry, Donald M., Jr. Hobbs, Joseph H., Jr. Huntington, Albert H., III Jack, Donald E. Johnson, Richard S. Kenny, William R. Krawchyk, James K.  Lacy, Gwynette P. Laudermilch, Alan B. McDevitt, Charles R. McKenzie, Rosemary Manchir, John C. Menchaca, Joseph Monteith, Richard T., Jr. Newton, James A. Ogles, Lewis M.  Opalack, Paul Parulis, John A. Poindexter, George F. Polach, Michael F., II Rahl, Michael J. Reed, Wrightly T. Repasch, Thomas A., Jr.	Thunderbird Graduate School Pennsylvania State University Fairmont State College Bloomsburg State College Bloomsburg State College Elizabethtown College Wake Forest University Austin-Peay State University Virginia Polytechnic Institute Columbia Union College The Johns Hopkins University University of Rhode Island Baptist College University of New Haven East Tennessee State University Pennsylvania State University Cleveland State University Thunderbird Graduate School Elizabethtown College Virginia Polytechnic Institute Baltimore College of Commerce Point Park College Mount St. Mary's College Lehigh University West Liberty State College Lehigh University University of Pennsylvania Indiana University of Pennsylvania Lincoln University Pennsylvania State University University of Pittsburgh Alabama A & M University West Liberty State College Cannon College University of South Carolina Albright College Middle Tennessee State University Lehigh University Wilkes College Lincoln University West Virginia University Quinnipiac College University of Tennessee Moravian College

**Washington Headquarters  
Divisions Career Group  
—Continued**

Rice, Willard M.	Gannon College
Rooney, James P.	Baptist College
Rothouse, Stanton J.	Yale University
Roush, Ronald D.	West Virginia Technological Institute
Ruple, Thomas M.	Kent State University
Russell, Robert C.	Thunderbird Graduate School
Rutherford, Teresa E.	Winthrop College
Schultz, Herbert W.	Delaware Valley College
Senick, George B.	Moravian College
Smith, Ned L.	Pennsylvania State University
Stoltz, Joseph F.	Pennsylvania State University
Swenson, Christopher H.	Thunderbird Graduate School
Thomas, Phillip J.	Sacramento State College
Turner, Robert J.	Stanford University
Tyler, Richard B.	University of Baltimore
Wallace, Rebecca J.	University of Delaware
Walsh, Samuel L.	U.S. Air Force Academy
Weeter, Gary K.	Indiana University of Pennsylvania
Weiss, Todd D.	Point Park College
Wood, William B., Jr.	University of Texas
Yeager, Douglas J.	Gannon College
Ziombra, Gregory K.	University of Missouri

**REGIONAL OFFICES**

**Atlanta**

Bailey, Foster P., Jr.	University of Alabama
Faircloth, David W.	University of Georgia
Noel, George W., Jr.	University of Mississippi
Smith, William C.	Western Carolina University
Trimble, Douglas K.	Florence State University
Walls, Maxie W.	University of Montevallo
Warren, Max E., Jr.	Mississippi State University
Wong, Margaret	University of Mississippi
Worrell, Bobby R.	University of Montevallo

**Boston**

Renaud, Leona	Southern Massachusetts University
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**Chicago**

Evans, James A.	University of Illinois
Feltz, Laurence L.	University of Wisconsin
Wicklender, Kenneth F.	Bemidji State College
Wuori, Robert C.	DePaul University

**Cincinnati**

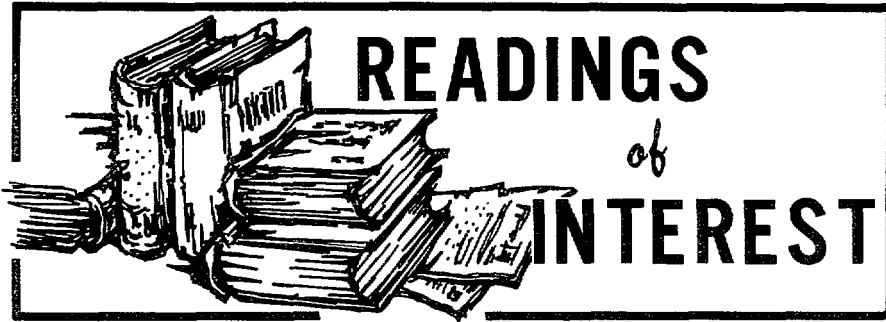
Booth, Gregory G.	Ohio University
Broughton, Challis	Union College
Davis, Terence J.	University of Dayton
Gover, John C.	Wright State University
Kirwin, Daniel J.	Robert R. Rockenfield and Associates

NEW STAFF MEMBERS

	Klein, Kenneth C.	Eastern Kentucky University
	Klocke, Donald W.	Xavier University
	Schneider, Tommy L.	Indiana University
	Weartz, Kenneth R.	Murray State University
<b>Denver</b>	Enenback, Joseph H.	Colorado State University
	Guthrie, Ronald J.	San Francisco State College
	Heldt, Sharon A.	University of Colorado
	Kiefer, Dieter M.	University of Denver
	Kingham, Thomas R.	University of Denver
	Madsen, Kenneth E.	University of Utah
	Meissner, James K.	University of Utah
	Pratt, Edward W., Jr.	South Dakota State University
<b>Detroit</b>	Ellis, Donald R., Jr.	Central Michigan University
	Scully, Richard J.	Computer Manufacturer
<b>Kansas City</b>	Cosson, John C.	Drake University
	Matzen, Jerome E.	Drake University
	Symons, Gregory J.	University of Wisconsin
	Trowbridge, Norman W.	Northeast Missouri State College
<b>Los Angeles</b>	Blanchette, Charles T.	University of California
	Berkes, Leslie J.	State University of New York
	Coffman, Charles A.	San Diego State College
	Friedman, Gary L.	San Fernando Valley State College
	Gallegos, Frederick	California State Polytechnical College
	Kuykendall, Lester L.	University of San Diego
	Roberts, Allan	University of California at Los Angeles
	Waldron, Jeffrey L.	San Diego State College
<b>New York</b>	DeGrandis, Philip E., Jr.	Marist College
	Gerrity, John J.	DePaul University
	Grillo, Dennis J.	Rutgers University
	Hurtado, Diana M.	Hunter College
	Jackson, William A.	St. John's University
	Korb, Lawrence M.	University of Maryland
	McCloskey, Michael D.	St. Francis College
	Minore, Frank J.	Wagoner College
	Murray, Robert G.	St. John's University
	O'Connell, Ngaire E.	College of New Rochelle
	Raimondi, Vincent P.	Fordham University
	Reid, James H.	Long Island University
	Rooney, William A.	St. Peter's College
	Stambler, Alan	Long Island University
	Thompson, Ronald J.	State University of New York
	Verlezza, Vincent J.	Manhattan College



<b>Norfolk</b>	Arcenia, Robert V.	East Carolina University
	Bartholomew, Philip L.	Atlanta Christian College
	Harrison, Fred S.	University of Richmond
	Kalk, Patrick J.	College of William and Mary
	Payne, John C.	Appalachian State University
	Powell, Eric W.	North Carolina Central University
<b>Philadelphia</b>	Schmanke, William F.	Temple University
<b>San Francisco</b>	Black, Thomas G.	University of Santa Clara
	Hammond, Philip H.	San Jose State College
	Hayes, Thomas W.	San Jose State College
	Howard, Kenneth J.	San Francisco State College
	Hughes, Sharon A.	College of New Rochelle
	Lundberg, Anne M.	University of Nevada
	Pankhurst, Robert C.	University of Nevada
	Perez, Michael J.	San Jose State College
	Thilmony, Harold E.	San Jose State College
	White, Philip W.	Sonoma State College
Williams, Cornelius P.	Alabama State University	
<b>Washington (Falls Church)</b>	Cantor, Eugene H.	University of Maryland
	Faley, Joseph J.	Pennsylvania State University
	Flanagan, James M.	University of Notre Dame
	Givens, Chelton T.	University of Richmond
	Hudson, James R.	University of Wisconsin
	Larsen, Alan S.	Bucknell University
	Miller, John D.	Kent State University
	Neff, Donald R.	West Virginia Institute of Technology
	Spargo, Alice H.	George Mason College



*The reviews of books, articles, and other documents in this section represent the views and opinions of the individual reviewers, and their publication should not be construed as an endorsement by GAO of either the reviewers' comments or the books, articles, and other documents reviewed.*

### **Improving Management for More Effective Government**

*50th Anniversary Lectures of the United States General Accounting Office 1921-1971*

By David E. Bell, H. M. Boettinger, Harlan Cleveland, John J. Corson, Alan L. Dean, William Gorham, Walter G. Held, Chet Holifield, John W. Kendrick, Harold Leventhal, George P. Shultz, Hugh Sidey, Leonard P. Spacek, Elmer B. Staats, Russell E. Train, Alexander B. Trowbridge, Robert C. Weaver, and James E. Webb. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.; 285 pp., \$2.75 (paperback).

It is not a rule of authorship that because a book has 18 authors it must have 18 disparate messages. One might

expect that and nominally be correct—authorship or personal opinion being what one man thinks. In this book the authors, working independently of one another, have singularly uniform things to say about management policies of government departments and programs, the Federal Government in particular, and the need to manage government activities better.

This book was not created spontaneously; it was, in a manner of speaking, a command performance. The Comptroller General of the United States, Elmer B. Staats, invited each of the contributors—men experienced in the arts of accountability, government, private enterprise, law, and journalism—to come to the General Accounting Office in 1971 and help, through lectures, to put the spotlight on the need for more effectiveness by government and its services.

The Comptroller General arranged the lectures as an appropriate way to honor GAO's 50th anniversary, 1921-1971. Of this event he said:

The GAO has contributed immeasurably over half a century to economy and effective management in the Federal Government, and has increasingly provided assistance to the Congress in carrying out its legislative duties. It is a suitable time to reassess how the GAO can become even more effective in the years ahead. The GAO—like any other organization—cannot rest on its laurels.

No professional in public administration or government management is likely to "rest on his laurels" after he reads some of the warnings and views of these 18 experts. It is fair to characterize this volume as a textbook in modern management, largely government. Its authors are experts in their fields, as a glance at the table of contents will tell. One would have to search sedulously to find so many complex subjects compressed so skillfully.

How, then, are its contents to be summarized satisfactorily? One way is to let the authors speak for themselves. This method is not without its limitations since excerpts must be selected more or less arbitrarily. What follows, nevertheless, is an attempt to bring to the reader a sampling of what the book contains.

*David E. Bell, Executive Vice President, The Ford Foundation:*

We are in a period \* \* \* in which the ability of the U.S. Government, or any government, to get things done is under great question. People in this country and in many countries \* \* \* are increasingly skeptical that any government—Federal, State, local, provin-

cial, whatever the terms may be in the country in question—can act effectively for the common good. People say that governments have been working on slums for years and the slums are worse than ever; governments have been attacking drugs, but more of our kids are in drug trouble every day; pollution increases; hunger does not diminish; and so on. Most of us who work, or have worked, in government consider that these charges are greatly overdone and are prepared to defend government as an institution. Nevertheless, I think all of us would agree that there are very serious shortcomings in what governments have been able to do until now.

*H. M. Boettinger, Director of Management Sciences, American Telephone and Telegraph Company:*

We are gathered here to celebrate a milestone in the history of Government management and its quest for efficiency. "Management," says Servan-Schreiber, "is the art of arts, because it is the organizer of talent," and the management systems of greatest scope are found in the realm of government \* \* \*. I believe that the opportunity in this area for management science is even greater in the Government than in private business, even though it's of great potential in private business.

*Harlan Cleveland, President, University of Hawaii, referring to a 1957 report on manpower needs:*

There is a premium, the report went on, "on men and women with a talent for innovation, for individuals who

can move beyond the limits of present fashion. In a time of breathtaking technological and social changes there is a need for people who understand the process and the nature of change and who are able to cope with it. We should educate our young people to meet an unknown need rather than prepare them for needs already identified."

Fourteen years of dust have collected on that report, but the wisdom of that passage survives intact.

*John J. Corson, Chairman of the Board, Fry Consultants, Inc.:*

I start by agreeing with Alan Dean that it isn't size that makes the management of a Federal executive department difficult. It is the diversity of programs a department must administer, and the multiplicity of constituent pressure groups associated with such programs that make the departmental management job difficult.

*William Gorham, President, The Urban Institute:*

We are deluding ourselves if we think that we can remedy our social problems without investing in the answers. We did not expect that in defense or in space efforts. But in the social arena \* \* \* the research budgets are puny. Some have taken this as evidence that the Nation does not want to solve the domestic ills. My own opinion is that this underfunding reflects a popular but mistaken view that research is best suited to technical rather than human problems. In fact, most of our domestic problems require a combination of technological, behav-

ioral, economic, and political research efforts.

*Chet Holifield, Chairman, Committee on Government Operations, House of Representatives:*

Considering that Mr. Staats served so many years in the executive branch and the presidential orbit, I find it interesting that he has committed himself so firmly to shaping the *GAO as a service agency to the Congress*. And, more than his predecessors, he has refashioned the GAO as an institution to keep it abreast of the times, to expand its horizons, to diversify its skills.

*John W. Kendrick, Professor of Economics, The George Washington University:*

Cost-reducing innovations usually stem from applied research and development programs, both formal and informal. It is surprising that so little research and development has been undertaken within or for Government, with the objective of developing cost-reducing equipment or procedures. Agency managers and engineers should also, of course, work with suppliers of equipment or intermediate goods, and construction contractors, in stimulating them to develop products that contribute to greater efficiency of governmental operations.

*George P. Shultz, formerly Director, Office of Management and Budget, now Secretary of the Treasury:*

\* \* \* The fourth thing I shall mention is \* \* \* a more overwhelming need in Government to have terminal facilities on activities or programs. It

seems to be practically impossible to stop something once Government starts it. No matter how bad it is, it just keeps going. The only question is whether it should be bigger, but never whether or not it should be eliminated.

*Hugh Sidey, Chief, Time-Life, Washington News Bureau:*

\* \* \* Government is people, who work for people. Yet, far too many of us both in government and in the press consistently try to filter out the human factors in our stories and reports. We have developed a box score mentality which deals with billions of dollars appropriated, numbers of bills passed, masses enrolled, gross national product produced. In the end we sometimes produce a bloodless, dull, and often inaccurate narrative of the affairs of the Government.

*Leonard P. Spacek, Senior Partner, Arthur Andersen & Co.:*

Misleading reports too often provide those who wish to criticize reported results with half-truths or whole untruths that can be damaging. We must eliminate such reports. An attorney in his role of an advocate will use various approaches to try to get the witness to weaken or damage his case, regardless of the facts, if he can. We in accounting cannot indulge in the same sport. We must have a more sincere response to "effective management" by the public, so that the public can impose more "effective management" on governments, corporations, and legislators.

*James E. Webb, former Administrator, National Aeronautics and Space Administration:*

Apollo succeeded and NASA survived because it followed a clear management philosophy and steadily tested its assumptions as well as its hardware. The basic assumption was that rocket-powered transportation for men cannot avoid high risks and public visibility; that rockets are much more dangerous and difficult to use than other machines; that bold objectives require conservative engineering; that in rocketry if anything can go wrong, it will; that even the best of plans cannot incorporate all contingencies; and that when an unplanned-for event occurs the immediate need is to find out what happened, to apply the best available knowledge and technology to fix it, and to thoroughly test the fix.

\* \* \* \* \*

Copies of this book of lectures have been provided each member of GAO's professional staff. It is "must" reading for all of them if they wish to broaden their perspectives and fully benefit from a study of the views of the outstanding speakers who came to GAO for its 50th Anniversary.

*Roland J. Sawyer*  
Information Officer

**The Limits to Growth**

By Donnella H. Meadows, Dennis L. Meadows, Jorgen Randers, and William Behrens, III; a Potomac Associates book published in 1972 by Universe Books, New York, N.Y.; 204 pp.; \$2.75 (paperback).

"The Limits to Growth" describes a major computer simulation model of world trends, constructed at M.I.T.,

which concludes that humanity may be confronted with a precipitous collapse within 100 years. The model strongly suggests that deliberate changes in world policies should be made to establish a global equilibrium in which population and resource-consuming growth are stabilized. Its conclusions indicate that issues relating to the distribution of wealth will become increasingly more significant. For example, although the United States has about 6 percent of the world's population, it consumes at least 30 percent of the world's nonrenewable resources. The international cooperation and related revolution in current human values that will be needed to accomplish such a turnabout staggers the mind.

The research of the world model discussed in the book was sponsored by the Club of Rome. The Club of Rome is an international group, composed of businessmen and scientists, which first met in Rome in 1968 to discuss the world's broadest and most perplexing problems. These problems encompass not only the limitations of finite resources available for an ever-increasing population but also qualitative aspects, such as deterioration of urban life and alienation of youth.

Professor Jay Forrester of M.I.T. initially conceptualized the world model which was further refined at M.I.T. by an interdisciplinary team headed by Dennis L. Meadows. The methodology employed in the model was also developed over the past 15 years by Professor Forrester and is called systems dynamics. Professor Forrester has written three major books on the application of systems dynamics. His initial

book, which focused on industrial dynamics, was followed by urban dynamics and more recently by world dynamics, which conceptually supports the version of the world model discussed in "The Limits to Growth."

Although the book has been issued only a few months, it has been severely criticized, highly applauded, or viewed with a wait-and-see attitude. It is my opinion that if one carefully assesses the model, including the supporting conceptual work contained in another book by Professor Forrester, "World Dynamics," he will conclude that the model's objective has been and will continue to be met. The major purpose of the model is to generate a fascinating debate and a motivation to deal with issues of great concern by providing a better and more easily understood framework of world trends.

The book's unique and major contributions are in the model structure. The structure provides a framework for systematically studying the impact of a wide range of alternative policy changes on long-term interaction of key world variables. It is also unique in that its mathematical equations force a clarification of intuitive assumptions and their impact on the world system behavior.

The most important set of principles in systems dynamics concerns the view that any system which changes through time can be represented by using only levels and rates. Levels are the accumulations (or integrations in mathematical terms) within a system. The rates (or policies) are the actions or flows that cause the levels to change. For example, an order rate

changes the level of an inventory. The new level of inventory results in information which returns to influence the order rate. The interaction of levels and rates within a system is always related in a cause-and-effect relationship called a feedback loop. The loop is then symbolized in the form of several mathematical equations for manipulation by a computer which then simulates inventory activities over a time period. A feedback loop represented by the order rate and inventory level can then be tied to other feedback loops to study relationships in a broader system, such as a warehouse distribution system.

In addition to viewing system relationships in terms of feedback loops, systems dynamics merges the scientific method with systems analysis and the computer. The scientific method is necessary because the model structure may contain hypothesis testing related to about a hundred cause-and-effect relationships. These are asserted on the basis of the best available data and expert knowledge, even though ultimate scientific proof of each relationship is not yet available. Systems analysis is employed because (1) interdisciplinary teams are used to develop a model that attempts to represent reality, (2) a systematic examination is made of the interaction of the major components of a large and complex system, and (3) sensitivity analysis is applied as a means for studying the effects of alternative policies (or assumptions) on system behavior.

The effective application of such techniques would not have been possible without the computer, which per-

mits the simultaneous manipulation of hundreds of relationships and their influence upon each other over long periods of time.

The principles of systems dynamics stress that what may be an underlying cause in a small system may be a symptom of a more important underlying cause in the larger system. The world model demonstrates how large-scale social problems may be generated by policies taken to alleviate shorter term problems.

An important beginning approach used in systems dynamics is the view that only a few basic elements interact to generate the significant overall behavior of a large social system. Several critics of the book believe that the high level of aggregation required severely limits the accuracy of the model.

In the case of the world model, the time period extends from the year 1900 to 2100, or over the past 70 and next 130 years. Thus, it emphasizes past, current, and future behavior with respect to changes in the major key variables and numerous cause-and-effect relationships. Validation of the model is primarily performed by comparing the behavior of past world trends with the model's output. The book asserts that validity of the model holds up to the point in each plotted graph at which growth ceases and collapse begins.

Because the model can be used to replicate past behavior, it can, with some confidence, be used to predict the future. However, the book highly qualifies the predictive ability of the model and stresses that future behavior pat-

terns are predictions only in a limited sense and that the cause-and-effect relationships are probably accurate in the middle range of certainty. *Many critics of the book fail to note this qualification.*

In the world model the structure consists of five major level variables—population, capital, food, nonrenewable resources, and pollution—all of which are joined together by about a hundred feedback loops. These loops can either be positive or negative. A positive feedback loop accentuates a phenomenon on an exponential basis. This type of relationship generates rapid growth; i.e., 1, 2, 4, 8, 16, rather than linear growth, 1, 2, 3, 4. For example, the larger the population level the more babies will be born, given a constant average fertility rate. The more babies, the larger the population will be the following year, and so on.

A negative feedback loop tends to diminish and control the disturbance and seeks equilibrium. For example, the mortality rate, which plays a large part in controlling population, is based on such factors as average life span, health services, and the average age of population, all of which tend to diminish population growth. Because the dynamic interaction of the factors in just these loops can be quite complicated, a computer is needed to keep track of them.

In a larger context, population and capital can influence each other in many different ways. For example, agricultural capital influences the amount of food produced, which influences the birth and death rates of a population.

The resulting level of population returns to affect the amount of agricultural capital. These variables affect each other differently at different points in time. This simultaneous interaction of all variables is considered important because attention to the interaction of merely one or two major variables will not give the full story.

Based on historical and current trends, the model predicts exponential growth of population and capital followed by a collapse. This behavior appears to hold even when many different assumptions about technological improvements and breakthroughs are used in the model. The behavior of overshoot and collapse due to exponential growth and to time delays needed for adjustment is central to the world-system behavior findings in the book.

As an example of delays, the U.S. population would still continue to grow for 70 years even if we started to limit the number of children to the replacement rate (slightly over two per couple). This happens because the age structure of a previously growing population consists largely of the young and it takes several decades for mortality to catch up with a stabilized birth rate.

I have given attention to the more technical aspects of the world model because future auditing work may increasingly encounter complex models of social systems in computer simulations. Whether we agree or disagree with the systems dynamics or similar simulation models, they are being used and will be used increasingly for decisionmaking, particularly for major policy issues.



How would one audit such a model? First, an interdisciplinary team would evaluate the validity of the model as it portrays past phenomena for several highly specialized areas, such as pollution, agricultural economics, administration, and resources. The team would emphasize an assessment of the soundness of the model's basic structure and would determine the extent to which input data is valid and whether better input data is available.

"The Limits to Growth" attempts to answer the question of how much growth the physical system will support, assuming that the best possible social conditions will prevail. Thus, even if the highly quantifiable areas are reasonably correct, field experimentation—to validate the cause-and-effect relationships in the model's structure and predictability—would have to be performed over a long period.

The very high level of aggregation used in the model may be an important shortcoming. For example, a nation, region, or city could be used to verify the cause-and-effect relationships underlying the behavior of overall key variables plotted over time by the model. The critical assumptions which the model holds on the ranges of factors for reducing or increasing pollution, the probability of technological breakthrough, and the availability of substitute materials also will have to be extensively assessed. It is important that this data and probabilities of assumed factors not only be checked but also be related simultaneously to all key variables.

World overshoot and rather sudden subsequent collapse can stem from technology insufficient for adequately expanding nonrenewable resources soon enough or from lack of technological advances needed for increasing food production and reducing pollution levels and birth rates. Several critics challenge the model because it treats population and other resources exponentially and treats some technology in a linear manner. The book notes that it is not possible to generalize the dynamic behavior of technology because the rise of technology in any one sector of the model influences quite different sectors in different ways. In any case it would be impossible to keep track of all the interactions without the computer's assistance.

The systems dynamics approach to the study of complex social systems is most noteworthy and should be studied by all serious students of the state-of-the-art. The book simplifies a complex subject into easily understood language. I understand that a similar model is being developed for studying health systems, and I believe that similar models will be used extensively for education purposes in the near future. I don't recommend reading this book and then contemplating suicide. However, I highly recommend a careful reading of "Limits to Growth" in combination with "World Dynamics."

*Joseph Comtois*  
 Assistant Director  
 Financial and General  
 Management Studies Division.

## **Auditing — Operational, Management, Performance, Effectiveness**

A compendium prepared by a special research team of the Northern Virginia Chapter of the Federal Government Accountants Association for the joint OMB-CSC-GAO project team on improving productivity, June 1972.

The Northern Virginia Chapter of the Federal Government Accountants Association has produced a very useful compilation of selected articles on advanced auditing, sometimes labeled operational auditing, management auditing, performance auditing, or effectiveness auditing.

The compilation was prepared for the project team on improving Federal productivity, a joint project of the General Accounting Office, the Office of Management and Budget, and the Civil Service Commission, under the general leadership of *Thomas D. Morris*, Assistant Comptroller General.

The compilation contains 17 articles selected from professional journals. The individuals who assembled these articles concluded that no books were in existence which contained a satisfactory presentation of the concepts of management auditing. They also con-

cluded that the best literature on the subject appeared in articles in professional journals, and from over 100 articles in numerous publications, they selected 17 as the most useful.

GAO fares well in the selections inasmuch as four of the articles are from the pens of GAO officials and four others are from former GAO staff members.

The compilation was the work of a special research team of members of the Northern Virginia Chapter of the FGAA under the direction of *D. L. Scantlebury*, director, Financial and General Management Studies Division. Other members of this team from GAO were *John Carroll*, *Robert McLaughlin*, *Richard E. Nygaard*, *C. O. Smith*, and *Charles Wolfe*. The compilation competed as a research project in the FGAA's annual national research competition in 1972, and it was awarded first place.

For those interested in a convenient and comprehensive presentation of the basic concepts and principles of management or operational auditing, this compilation provides an excellent single source.

*E. H. Morse, Jr.*

Assistant Comptroller General

## Annual Awards for Articles Published in The GAO Review

Cash awards are available each year for the best articles written by GAO staff members and published originally in *The GAO Review*. Each award is known as the Award for the Best Article Published in The GAO Review and is presented during the GAO awards program held annually in June in Washington.

One award of \$250 is available to contributing staff members 35 years of age or under at the date of publication. Another award of \$250 is available to staff members over 35 years of age at that date.

Staff members through grade GS-15 at the time of publication are eligible

for these awards.

The awards are based on recommendations of a panel of judges designated by the Comptroller General. The judges will evaluate articles from the standpoint of the excellence of their overall contribution to the knowledge and professional development of the GAO staff, with particular concern for:

- Originality of concepts.
- Quality and effectiveness of written expression.
- Evidence of individual research performed.
- Relevancy to GAO operations and performance.

### Statement of Editorial Policies

1. This publication is prepared for use by the professional staff members of the General Accounting Office.
2. Except where otherwise indicated, the articles and other submissions generally express the views of the authors, and they do not necessarily reflect an official position of the General Accounting Office.
3. Articles, technical memorandums, and other information may be submitted for publication by any professional staff members. Submissions may be made directly to liaison staff members who are responsible for representing their offices in obtaining and screening contributions to this publication.
4. Articles submitted for publication should be typed (double-spaced) and range in length between five and 14 pages. The subject matter of articles appropriate for publication is not restricted but should be determined on the basis of presumed interest to GAO professional staff members. Articles may be submitted on subjects that are highly technical in nature or on subjects of a more general nature.