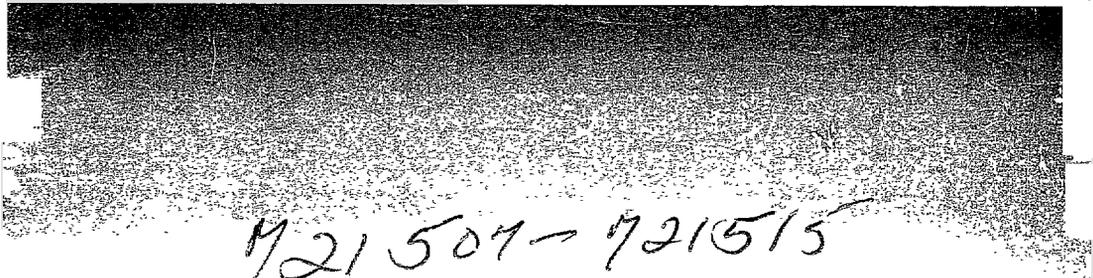




# THE GAO REVIEW



721507-721515

7  
21190

---

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.  
Price 40 cents (single copy). Subscription price: \$1.50 per year; 50 cents additional for foreign mailing.



**Contents**

Managing U.S. Interests in International Organizations FRANK C. CONAHAN .....	721509	1
Weapon Systems Cost-Effectiveness Studies JAMES P. WRIGHT .....	721508	9
Adequacy of Contractors' Cost Records MILTON H. HARVEY .....	721509	17
Concepts of Auditing and Systems Analysis ELLSWORTH H. MORSE, JR. ....	721510	23
Job Satisfactions of Accountants ROBERT H. STRAWSER, JOHN M. IVANCEVICH, AND LEO HERBERT .....	721619	28
Behavioral Science—A Management Tool ROBERT Y. HILL, JR. ....	721511	37
Legislative Control Over Expenditures GERALD GOLDBERG .....	721512	40
An Old Lady Gets a New Dress G. V. GRANT .....		47
Auditape to the Rescue CLIFFORD L. GARDNER .....	721513	51
Application of Marketing Concepts to the Analysis of a Government Program or Agency BILL COX .....	721514	60
Cost Accounting Standards Board Appointed ..		68
From GAO Speeches .....		71
News and Notes .....		74
Hearings and Legislation ..	721515	82
GAO Staff Changes .....		84
Professional Activities .....		92
New Staff Members .....		101
Readings of Interest .....		102

# Managing U.S. Interests in International Organizations

7/21/71

*How do nations that contribute funds to international organizations influence the management of the activities of those organizations? How do they assure themselves that funds are being managed and applied properly and effectively? GAO's increased involvement in these kinds of questions, as far as U.S. participation in international organizations is concerned, is described below.*

Several years ago a cynic was overheard to say that U.S. management of its interests in international organizations was based on faith, hope, and charity:

- Faith in the ability of the organizations to do the job,
- Hope that some results will be achieved, and
- Charity to show continuing support for faith and hope.

We assert that we are not cynics. Moreover, at about the time we heard this story, the executive branch was making representations quite to the contrary. It was contending, at least publicly, that its management of U.S. interests in international organizations was well in hand.

This article discusses a GAO review effort in this area and how it contributed to clearing the official air.

## Some Necessary Background

The United States participates in two categories of international organizations. One category includes the United Nations system of organizations, regional organizations such as the Organization of American States, and a rather long list of relatively small international cooperative ventures. The Secretary of State has primary responsibility for managing U.S. interests in these organizations. The State Department estimated that the United States would contribute \$418 million to these organizations in fiscal year 1971.

---

Mr. Conahan is an assistant director in the International Division. He holds a B.S. degree in accounting from King's College, Wilkes Barre, Pa., and completed the Executive Development Program at the University of Michigan Graduate School of Business Administration. Except for 2 years active duty in the Navy, Mr. Conahan has been with GAO since 1955.

---

The other category consists of the international financial institutions such as the World Bank and the regional development banks. Responsibility for managing U.S. interests in these institutions rests with the National Advisory Council on International Monetary and Financial Policies under the chairmanship of the Secretary of the Treasury. The United States has purchased capital or otherwise contributed over \$9 billion to these institutions.

### Arrive on the Scene, GAO

In 1967 GAO decided to take a look at U.S. participation in the first category of organizations—those for which the Secretary of State has responsibility for managing U.S. interests.

After a preliminary look-see, we saw our objective as determining how well the executive branch was able to bring its influence to bear on (1) the level, content, and formulation of the programs and budgets of the organizations which were supported by our contributions, and (2) the economical and efficient management of these activities. Our objective recognized that GAO had no authority to make audits of the international organizations themselves.

From the outset, eyebrows were lifted and questions were raised as to just what GAO thought it could accomplish in this area. After all, the United States is only one of 100 or more member governments who do not have any specific charter rights of inspection or examination of source data relating to implementation of the programs of the international organizations. How far can one member go, and how far can GAO expect one member to go, in ana-

lyzing programs and budgets and in evaluating performance?

Surface problems were easily detected. The United States was contributing more to some of the international organizations than it wanted to and, because it was not obtaining adequate information from the organizations, it was not entirely certain what the contributions were being used for. Other more deeply rooted problems were beginning to be seen.

### Initial Representations

At an early point this author met with Mr. X who was the responsible State Department official, randomly opened a copy of the World Health Organization budget document, and asked what Mr. X knew about the programs discussed on that particular page.

Mr. X said that the State Department did not have that kind of information and referred the author to Mr. Y in the Department of Health, Education, and Welfare who had “all that kind of information.”

Mr. Y said it was the U.S. Mission in Geneva, Switzerland, the location of the headquarters of the World Health Organization, that had “all that kind of information” and to see Mr. Z.

Mr. Z said that he regretted to tell me, after such a long trip, that the Mission did not have the information. He was troubled, however, that I had come all the way from Washington because it was Mr. X in the State Department who had “all that kind of information.”

One might tend to look at the exercise just described as a typical run-around and let it go at that. However,

consider the following. In March 1967, a State Department witness was telling a House Appropriations Subcommittee:

\* \* \* Of course we know how many persons there are in this [international] organization. When you say, "You negotiate," I don't personally negotiate. We have field missions. Ambassador Goldberg and Ambassador Tubby and our people in Geneva do the negotiating—our representative in UNESCO does the negotiating—the Assistant Secretary is sitting back here in Washington—these people in our missions are all fully familiar with the number of people in these organizations. And they have the number of people in these organizations. And they have knowledge not only of personnel, but the programs in the budget. They have got all the intimate details.

At that same time, Ambassador Tubby in Geneva was complaining that the United States did not know nearly enough about United Nations projects. The Ambassador, since 1962, had repeatedly reported to the State Department his deep concern over the total lack of information from U.S. Government sources regarding the effectiveness of such projects.

Other examples could be cited where the State Department chose to defend its activity and to make statements indicating that a given situation was more satisfactory than it actually was rather than taking those actions required to meet and deal with the admittedly very difficult problems that had to be dealt with.

Was this simply a case of the State Department trying to cover up its shortcomings in this area? Such would be understandable enough. Yet, our reviews were beginning to suggest that international organization affairs commanded a very low priority in the State Department scheme of things and that

the Department's authority was being eroded and its responsibility was being diffused because other U.S. departments and agencies enjoyed a relatively more powerful or influential position in regard to individual international organizations. Moreover, we were still getting the Mr. X-Y-Z treatment referred to above.

### Two Years Later

In 1969, we made the following reports to the Congress:

U.S. Participation in the World Health Organization (B-164031 (2), Jan. 9, 1969).

U.S. Financial Participation in the Organization of American States (B-165850, Apr. 9, 1969).

U.S. Financial Participation in the United Nations Children's Fund (B-166780, July 8, 1969).

U.S. Financial Participation in the Food and Agriculture Organization of the United Nations (B-167598, Nov. 17, 1969).

In 1969, we also completed a review of the United Nations Development Program and issued a report to the Congress on "Management Improvements Needed in U.S. Financial Participation in the United Nations Development Program" (B-168767, Mar. 18, 1970).

Our reviews and reports dealt with problems associated with the role of the United States in relation to the programs and priorities of the organizations, improving their management capability, monitoring their activities, and assessing their accomplishments and efficiency of operations. We made a number of specific recommendations aimed at improving the management of

U.S. participation with the view of increasing the effectiveness of the international organizations themselves in contributing to their respective objectives.

In light of the long history of "business as usual" surrounding U.S. financial participation in international organizations, it should not have been surprising that little attention was being given by the executive branch to seeking the needed improvements. A consideration in this history could have been that U.S. contributions to the organizations were relatively small when compared with the U.S. bilateral assistance programs.

### A Turning Point

However, the decade of the sixties saw the pendulum begin to swing toward multilateral assistance and at the end of the decade its momentum accelerated. In September 1969, the Commission on International Development<sup>1</sup> recommended that aid donors channel more of their foreign assistance through international organizations and institutions. The Commission recognized at the same time that improvements were needed in these multilateral agencies. About a week later, the President appointed a Task Force on International Development. This Task Force recommended in March 1970 that international institutions become the major channel for developmental assistance and that U.S. bilateral assistance be confined essentially to security purposes.<sup>2</sup>

<sup>1</sup> *Partners in Development: Report [to the President of the World Bank] of the Commission on International Development*, Lester B. Pearson, Chairman—Sept. 15, 1969.

<sup>2</sup> *U.S. Foreign Assistance in the 1970's: A New Approach*, Report to the President from the Task Force on

Also in September 1969, a study made for the United Nations concluded that the capacity of the United Nations system to handle development projects was overextended and that unless substantial reforms were undertaken the capacity of the system to effectively absorb projects was limited to its then current level.<sup>3</sup>

While all this public debate was taking place, we were quietly pursuing our objective—what needs to be done so that the United States can achieve effective participation in these organizations?

In December 1969, congressional members of the U.S. Delegation to the 24th Session of the United Nations General Assembly asked us to come to New York and assist in their work. During that visit we emphasized the need for according international organization affairs a higher priority within the U.S. Government and recommended that there be established a central authority within the executive branch to manage U.S. participation in the developmental assistance activities of international organizations. We said that the central authority within the executive branch should review, coordinate, and clear all U.S. positions; develop priorities and long-range objectives; and establish appropriate machinery for appraising, monitoring, and evaluating the economic and technical assistance programs of international organizations. The Delegation's report cited our findings and recommended the estab-

International Development, Rudolph A. Peterson, Chairman—Mar. 4, 1970.

<sup>3</sup> *A Study of the Capacity of the United Nations Development System*, by a team of experts headed by Sir Robert Jackson—Sept. 30, 1969.

lishment of a central authority.<sup>4</sup> This was the first real external support of our views.

In early 1970, we were also auditing a fellowship fund administered for the United States by the United Nations in New York. We found incorrect financial reporting by the United Nations. We were also completing, at that time, a review regarding the International Labor Organization. These reviews resulted in a report to the Secretary of State entitled, "Review of Adlai E. Stevenson Memorial Fellowship Program" (B-165161, Sept. 14, 1970) and a report to the Congress entitled, "U.S. Participation in the International Labor Organization Not Effectively Managed" (B-168767, Dec. 22, 1970).

Our conclusions were similar to those expressed in our earlier reviews. The responses of the executive agencies were about the same as their responses to our earlier reviews—agreement in concept, but little in the way of corrective action.

### Another Platform—Then Others

In early 1970, the Comptroller General was asked to appear before the Subcommittee on International Organizations and Movements, House Committee on Foreign Affairs, during its review of the performance, operations, and future goals of the United Nations. The Comptroller General appeared on March 5, 1970, and, after a thorough review of our findings, conclusions, and recommendations, offered to prepare a detailed outline of the machinery we felt was needed for a more effective

executive branch organization for managing U.S. participation in the developmental assistance activities of international organizations. This outline was submitted to the subcommittee on April 15, 1970, and subsequently to the State Department and the Office of Management and Budget.

The pace quickened. On May 1, 1970, we testified before the Subcommittee on Foreign Operations and Government Information, House Committee on Government Operations, and subsequently detailed a staff member to work with the subcommittee in its further review of U.S. participation in the United Nations developmental assistance activities.

On May 6, 1970, the *Cleveland Plain Dealer* editorialized:

#### GAO WARNING ON FOREIGN AID

There is strong feeling in the Nixon administration that less U.S. foreign aid money should be given directly to other countries, that more should be distributed through international agencies.

Well and good. That route might be one approach to the goal of a "low profile" for America abroad. But those in the executive and legislative branches who go along with the idea should heed a caution signal raised by the General Accounting Office (GAO).

Looking into U.N.-administered programs, GAO found the United States has no assurance that the major contributions it provides are spent as intended, and that U.S. diplomatic officials in beneficiary nations frequently are unaware of the programs.

On June 1, 1970, the House Committee on Appropriations reported out the bill making appropriations for voluntary contributions to international organizations for fiscal year 1971.<sup>5</sup> The

<sup>4</sup> "To Save Succeeding Generations . . ." Report by members of the U.S. Delegation to the 21th Session of the General Assembly of the United Nations—H. Rept. 91-837—Feb. 10, 1970.

<sup>5</sup> Report from the Committee on Appropriations on the Foreign Assistance and Related Programs Appropriations Bill, 1971—H. Rept. 91-1134—June 1, 1970.



*The Comptroller General and officials of the International Division testifying before the Subcommittee on International Organizations and Movements of the House Committee on Foreign Affairs, March 5, 1970. From the left: the author, Frank C. Conahan, assistant director; Elmer B. Staats, Comptroller General; Ove V. Stovall, director; and John E. Milgate, assistant director. Seated behind Mr. Stovall is William McCandless, consultant to the Comptroller General.*

committee cut the administration's request by \$37,620,000. The committee's report said in this connection:

According to a recent report from the Comptroller General of the United States, dated March 18, 1970, and based on a study entitled, "Study of the Capacity of the United Nations Development System", made by a team of experts headed by Sir Robert Jackson of Australia, the United Nations Development Program (UNDP) has not been operating in the most effective manner. Some of the broad conclusions reached were \* \* \*.

During Committee hearings, it was indicated that these reports were presently under consideration but no conclusions or recommendations have yet been formulated. Pending any positive action on the part of the UN Development Program concerning this report, the Committee is of the opinion that a reduced level of funding should be allowed.

In view of all the indications that the administration would propose the channeling of increasing amounts of U.S. developmental assistance through the international organizations, and the mounting criticism of the multilateral machinery and U.S. participation in it, some action by the State Department was certainly to be expected.

### **The Conclusion Seems Near**

The President's September 15, 1970, message to the Congress on "Foreign Assistance for the Seventies" confirmed previous recommendations that international institutions should become the major channel for developmental assistance.

On September 16, 1970, the State Department advised our Office that it had considered the organizational and staffing changes which were needed to effect improvements and, to improve its operations, had initiated action essentially in line with the steps set forth in

the outline we had prepared earlier in the year. The Department reported that it was also working towards an improved U.S. system for evaluating programs of the international organizations and for related improvements. The Department further said that it was strongly supporting efforts to improve the United Nations developmental machinery.

Two days later, the Department appeared before the Subcommittee on Foreign Operations and Government Information, House Committee on Government Operations, and elaborated on the corrective actions taken and initiated. The Department expressed oneness with the objectives of the General Accounting Office and pledged to make every effort to bring about needed improvements.

In December 1970, at the request of the chairman of the House Foreign Affairs Committee, we made a report to him entitled, "Comments and Suggestions for Independent Review and Evaluation of International Organizations and Institutions" (B-161470, Dec. 4, 1970). On December 15, 1970, the chairman sent a copy of the report to the Secretary of State and asked to be advised of the State Department's plans to implement our suggestions. (At the time this article was written, the State Department's response had not been received.) With the increasing concern from various quarters, it would seem that the State Department will need to strenuously follow through on its pledge to work toward needed improvements in this area.

Is the situation thus well in hand? No. Much, much remains to be done. But, the situation is quite different

from that of 3 or 4 years ago when the State Department was telling the Congress that it had all the intimate details on the programs and operations of the international organizations—which it did not—without any mention of the serious deficiencies both in the management of U.S. interests in the organizations and in the organizations themselves. In this latter connection, although some efforts are being made, actual accomplishment of financial and management reforms needed within the international developmental agencies associated with the United Nations seems almost as remote as it did 4 years ago.

Our work is thus not finished. Moreover, we have not dealt with the international financial institutions which were mentioned briefly at the outset of this article. Early in 1970 we directed our attention to U.S. participation in these institutions. We again met with skepticism, foot-dragging, and resistance—perhaps even greater than that encountered 3 years earlier. But we were resolved to persist here too. As our operating instructions tell us, start at the beginning: legislative history, appropriation considerations, hearings, etc. We did. And guess what we found.

### Initial Representations—Again

In a recent request for appropriations for a contribution to one of the international financial institutions, the executive branch said to the Congress: <sup>6</sup>

<sup>6</sup> Special Report of the National Advisory Council on International Monetary and Financial Policies—H. Doc. 299—Apr. 25, 1968.

To avert a shut down of this unique, valuable, and unquestionably effective international financial institution, its 18 economically advanced member governments plus Switzerland have agreed, subject to necessary legislative approval, on a replenishment of [its] resources \* \* \*.

\* \* \* \* \*

The National Advisory Council \* \* \* fully supports the desirability of continuing this useful and important institution at an increased level. It is economical and effective in its operations \* \* \*.

Requesting appropriations for a contribution to another of the financial institutions, the Secretary of the Treasury said to the Congress: <sup>7</sup>

\* \* \* the United States receives full information upon not only lending operations but also policy issues as they evolve. This information is used by the Treasury staff and the other agencies of the NAC—including the Department of State, the Federal Reserve, the Export-Import Bank, and the Department of Commerce—in advising me how the United States should instruct the U.S. Executive Director to vote on a particular issue. Therefore, it is with experience, exposure, and full information that the United States pursues its responsibilities with this Bank.

Because the United States has such a stake in the international financial institutions, we believe it is important to carry on the review we have undertaken in order to make an independent assessment of the “experience, exposure, and full information” with which the United States pursues its responsibilities in these institutions.

<sup>7</sup> Statement of the Secretary of the Treasury before the Committee on Banking and Currency, House of Representatives on H.R. 18236—June 30, 1970.

# Weapon Systems Cost-Effectiveness Studies

721508

*Recently there has been increasing scrutiny of the defense budget by the Congress. In line with this interest, GAO has expanded its efforts to inform the Congress of the process by which the Department of Defense acquires weapon systems. An integral part of this process—the analysis performed to compare alternative methods of fulfilling military objectives—is discussed below.*

During the past 2 years, in response to both stated and implied congressional interest, the General Accounting Office has to a greater extent than ever before been examining into the decision-making process of the Department of Defense as it relates to the acquisition of weapon systems. In carrying out such examinations GAO auditors have encountered and are likely to continue to encounter reports of the results of cost-effectiveness studies performed either by or for a military service and related to the system or systems under review.

The intent of this article is to describe in general terms what an auditor might expect to find in such a report. Although many kinds of analytical effort related to weapon system development and acquisition can be appropriately referred to as cost-effectiveness studies, in this

article the discussion is limited to those studies that compare various complete weapon systems, either existing or proposed. These studies may be contrasted with comparisons of various possible components for the purpose of deciding upon the best combination for use in a single system.

Weapon system cost-effectiveness studies are highly technical and often contain much that is relatively unfamiliar to GAO staff members. Frequently present are complex formulas, equations, and graphs, as well as unfamiliar terminology. For this reason, one can easily become lost in the trees and thus lose sight of the forest. I hope that this article will, by focusing on what a study does and citing some examples of how it might do it, help the auditor to remain forest-oriented.

---

The author is a member of the Systems Analysis Staff of the Office of Policy and Special Studies. He has been with GAO since 1961, first with the Philadelphia Regional Office and, since July 1969, with OPSS. He holds a bachelor's degree from La Salle College and an M.B.A. from Temple University.

---

## Cost-Effectiveness Defined

Perhaps an appropriate point of departure is the term itself—cost-effectiveness. Initially, it is important to think of cost-effectiveness as a relative, rather than an absolute, concept. It does not appear to be very useful to speak of a weapon system as being cost-effective. The term has significance only when used to describe a relationship between one system and something else. Thus, whereas a statement such as “system A is more cost-effective than system B” is useful, a statement such as “system A is cost-effective” seems totally devoid of significance.

Now that this distinction between relative and absolute cost-effectiveness has been made, it would appear useful to provide a short and simple definition of cost-effectiveness. I know of no definition or description that better captures the essence of cost-effectiveness than does the oft-repeated phrase “bang per buck.” While suggesting this definition as a useful one, I should also point out that the “bang” portion of it may be somewhat misleading.

Ordinarily, “bang” connotes an amount or degree of blast or firepower; e.g., one megaton. In that sense, “bang” would usually represent not effectiveness, but merely output. Although frequently the size of the blast produced by a weapon system is a prime determinant of its ability to destroy its designated targets, and as such is one of the more important output measures related to the system, it is not usually a valid measure of the system’s effectiveness.

A weapon system, or anything else, is effective only to the extent to which it meets its objective. Thus, if its mili-

tary objective were the destruction of a certain kind of target, a weapon system should be judged, as to effectiveness, on the basis of its ability to destroy such targets, not on the basis of the size of the blast which it produces. Under the assumption that the reader will agree to interpret “bang” as “the ability to meet the desired objective,” I shall continue to advocate the use of the “bang per buck” definition of cost-effectiveness. This distinction between output and effectiveness is, in my opinion, an important one to remember when reviewing any cost-effectiveness study, whether or not weapon systems are involved.

## The Study Defined

Under the above definition, the objective of a cost-effectiveness study would be to determine which of the known ways of carrying out a military mission provides the most “bang per buck.” This desire to obtain the most “bang per buck” follows directly from the traditional assumption of economics that resources are limited. Here, defining resources as dollars available to the Department of Defense, one would probably concede the validity of this assumption.

To ascertain which of the available alternatives provides the most “bang per buck,” a cost-effectiveness study compares the costs and effectiveness of those alternatives. In such comparisons, there are two basic approaches, either or both of which may be found to have been followed in any study which GAO staffs might be required to review.

The first is to assume a desired level of effectiveness, such as the ability to

destroy 100 targets of a specific kind per day for a year, and then examine alternative ways of achieving the objective in an effort to determine the least costly of the alternatives. The second approach is to assume a fixed level of expenditure, i.e., a budget level, such as \$100,000 per year, and then attempt to find the alternative that provides the most effectiveness, again possibly the number of targets destroyed per day for a year, for that budget expenditure.

In order to make these "least costly" or "most effective" determinations, it is necessary for those performing the study to calculate the costs estimated to be incurred under each of the alternatives being examined as well as the amount of effectiveness expected to be provided by each. The description of the methods and data used in and the presentation of the results of these calculations constitute the major portion of the document that I refer to as the study.

Before proceeding to a discussion of the contents of a study, I would like to mention a second distinction, not totally unrelated to that between output and effectiveness. This distinction might be labeled one between "competing" and "similar." As indicated earlier, the emphasis in a cost-effectiveness study should be on determining the most "bang per buck" way of achieving the desired objective. In order to be considered a competitor for this designation, it is necessary only that a candidate system or method be capable of achieving that objective. It is not necessary that the candidate method be similar to the other method or methods being studied.

Thus, if the mission of an antiballistic missile system were defined as the protection of Minuteman missile sites, an alternative which could appropriately be included in a study related thereto would be a program of hardening the Minuteman sites. In such an instance, two distinctly dissimilar approaches, one involving complex data gathering and processing hardware and software as well as highly sophisticated missile-firing equipment, and the other involving only the comparatively simple process of reinforcing the Minuteman silos with concrete or other appropriate materials, would be viewed as competing alternatives in terms of cost-effectiveness.

### Cost Estimates

In accordance with the sequence of the term, cost-effectiveness, as well as that of the alphabet, I have chosen to briefly discuss the cost portion of a study before proceeding to a more lengthy discussion of the effectiveness aspects. In doing so, I would not wish to imply to the reader that this is the order in which he will find these matters presented in a study.

Usually a study will refer to the cost model being used. Essentially, the model, which may appear as a series of lengthy formulas or equations, is merely a description of the manner in which the costs related to each alternative have been calculated, or, stated differently, the rules followed in making such calculations.

For example, if, as is usually the case, the study were examining one or more proposed systems in comparison with existing systems, the cost model would ordinarily specify the inclusion

of such one-time costs as those of research, development, engineering, and special tooling in the estimate of the total costs of the proposed system or systems, but exclude such costs from calculations related to existing systems. Such exclusion is appropriate, since, for existing systems, these items constitute sunk costs, in that they have already been incurred, and thus are not relevant to a decision regarding future actions. It is only those additional costs, which would be incurred as a result of a decision to continue the use of an existing system, that should be considered to be the costs of that system.

In addition to specifying the kinds of costs included in the study's calculations, the cost model will usually set forth the period for which costs have been calculated. The time period involved might be that of a specific combat engagement, a 10-year peacetime period, or the total expected life of each system being considered.

### **Effectiveness Calculations**

Although, as mentioned earlier, they may be cloaked in unfamiliar notation, the cost calculations performed in a cost-effectiveness study certainly do not constitute anything which the typical GAO auditor has not previously encountered. The calculations related to effectiveness, however, may often involve approaches less familiar to the GAO auditor.

In reviewing the effectiveness aspects of a study, one will usually find reference to a scenario. In simplest terms, a scenario is merely a set of assumptions under which the performances of the systems being studied are to be com-

pared. For example, in a study comparing alternative methods of performing an anti-aircraft mission, the scenario might be that there would be an enemy air attack of a specific number of aircraft, with the attacking aircraft carrying a specific number of weapons and being accompanied by a specific number of escort aircraft. Additionally, there would probably be specific assumptions concerning weather conditions and visibility during the attack as well as jamming techniques and attack tactics employed by the enemy. There would also probably be specific assumptions regarding the geographical location of the site being attacked, and a large number of other assumptions which in total would tend to paint a picture of the combat environment in which the performance of a proposed system and that of possible alternative systems are to be examined and compared.

After describing the scenario, a cost-effectiveness study will usually present its calculation of the effectiveness of each of the various systems in carrying out the intended mission in that scenario. Generally, effectiveness calculations are made either by computer simulation of military engagements or by the use of any of a number of mathematical analysis techniques.

In some cases, the simulations are performed solely by computers, while in others, humans are permitted to participate, as in the case of some simulations of aircraft operations in which experienced pilots interact with the computer. Whether it be in the form of a computer simulation or that of an extensive mathematical analysis, the calculation of effectiveness is based

upon large amounts of data of varying degrees of reliability.

For example, in the hypothetical antiaircraft case, the final results of the calculation of the effectiveness of each system would depend on such factors as the probability that (1) the system's radar would be able to detect the incoming enemy aircraft, (2) the system's weapons would fire when called upon to do so, (3) the system's missiles or other munitions would be delivered accurately; i.e., would hit their intended enemy aircraft targets, and (4) when hit, an enemy aircraft would be rendered harmless.

For the existing systems being considered, much of the required data will be historical, although much may of necessity be in the nature of informed estimates. The data related to proposed systems, however, often has a strong flavor of subjectivity in that it essentially consists of the results of many military and engineering judgments as to the probable performance of the systems. In some studies, it may even be that extensive quantitative analysis, either electronic or manual, is not in evidence, and instead, the entire effectiveness calculation for each competing system is shown in terms of engineering judgments as to its probable ranking, relative to the other alternatives, in each of several performance characteristics that, in the opinion of military experts, are important in carrying out the intended mission.

### **Effectiveness Measures**

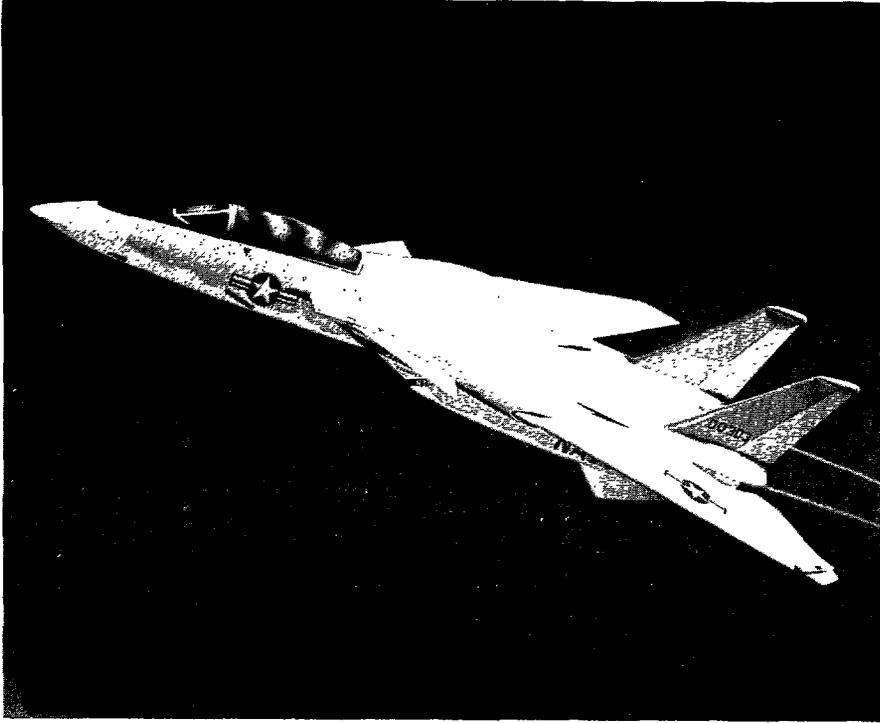
Earlier, I cited a hypothetical military objective of destroying targets of a specific kind. In a study related to such an objective, the effectiveness of

each competing alternative might be stated in terms of the estimated number of target kills per day which one unit of each alternative could achieve, as determined by technical judgments, computer simulations, mathematical analyses, or combinations thereof. Thus, the number of target kills achievable per day by one unit of each competing weapon system would be the measure of effectiveness used in the study. Each study applies one or more such measures of effectiveness in comparing the alternative systems' performance.

The early identification of the effectiveness measure or measures being employed greatly facilitates the review of a cost-effectiveness study. For this reason, I will now try to illustrate the kinds of measures which a reviewer might expect to find.

In addition to the target kills just referred to, the number of enemy casualties inflicted might be an appropriate effectiveness measure. If the mission being addressed in the study were essentially defensive, the effectiveness measure used might be the number of attacking enemy vehicles destroyed or the number of U.S. weapons or personnel surviving the attack.

Another effectiveness measure that might be found in such a study would be the number of days of service of equipment lost as a result of an enemy attack. Since it is obviously desirable to minimize such losses, the competitor achieving the "low" score would be the most effective. Conversely, if in a study related to a defensive mission the effectiveness measure were some element of cost to the enemy, such as the number of enemy aircraft re-



U.S. Navy Photo

*Prior to approval of continued development of the F-14 aircraft, shown here, a Navy study compared the cost-effectiveness of the F-14 and other aircraft in carrying out specific missions.*

quired in order to inflict a specific level of destruction on U.S. forces, the most effective alternative would be the one "scoring" the highest.

### **Cost-Effectiveness Determinations**

After using its cost model to calculate the costs of each alternative and in some way estimating the effectiveness of each, although not necessarily in that order, a study will compute the relative cost-effectiveness of the alternatives, using either one or both of the previously mentioned "least costly" or "most effective" approaches. This ranking of the competing alternatives in terms of cost-effectiveness is the ulti-

mate purpose of performing the study. In a single study, however, there might be several calculations and rankings of cost-effectiveness.

It may be, for example, that separate cost-effectiveness calculations are made for each of several specific combat scenarios deemed relevant in light of the overall mission involved. The scenarios could differ in either the nature of the engagement or in the level of effectiveness considered necessary for success. Similarly, separate calculations of cost-effectiveness might be made for each of several expenditure levels.

Additionally, within each scenario one or more assumptions may be changed, and the cost-effectiveness re-

sults examined in that light. The exploration of the cost-effectiveness question under differing assumptions in this manner, frequently referred to as sensitivity analysis, is useful to the decisionmaker both in allowing him to apply his experienced judgment as to the relative likelihood that each of the assumptions would be valid and in providing him with "what if" information regarding those occurrences which he believes to be comparatively unlikely.

To summarize then, a cost-effectiveness study consists of a comparison of the costs and effectiveness of competing systems. The time periods for which costs are estimated and the kinds of costs included in the estimates may vary greatly among studies, as may the effectiveness measures used. In all studies, however, the essential elements remain the same, in that in some way the effectiveness of each competing system is estimated, as are its costs, with the intent of determining the most cost-effective of the available alternatives.

### Limitations

From the standpoint of balance, it would seem appropriate before closing this article to mention two limitations of cost-effectiveness studies. These are their inability to deal with all considerations pertinent to a weapon system choice and their reliance upon assumptions.

Their inability to deal with all pertinent considerations follows from the nonquantifiable nature of some such considerations. Although it is true that a study usually contains a narrative portion that qualitatively discusses

many factors not included in the quantified portion, as stated previously, a study's primary objective, and thus the aspect receiving most attention, is the ranking of the competitors in terms of cost-effectiveness.

Their reliance upon assumptions is necessitated by the fact that, regardless of the amount of time and money available, no study could possibly examine every conceivable alternative under every conceivable future circumstance. In this regard, the mark of a satisfactory study is the success of those performing it in achieving the currently overworked term, relevance, when deciding which assumptions to use.

Some may believe, with some justification, that the limitations of cost-effectiveness studies number more than the two just stated. I have mentioned these two because each should be of particular interest to those of us in GAO.

By remaining aware of the first limitation, we may be able to appropriately separate in our review work the cost-effectiveness decision from the related weapon choice decision, which might reflect considerations not included in the cost-effectiveness study. It may be that the most cost-effective system as determined by a study is not the "best" weapon choice. For example, in the choice of an aircraft, such possibly nonquantifiable factors as pilot safety might outweigh the quantified conclusions of a cost-effectiveness study performed on the subject.

With regard to the second limitation, I would suggest a review of a study's assumptions as an excellent starting point for an examination into the validity of its conclusions.

**Value of Studies**

In spite of these limitations, as well as others which someone else might point out, these studies can serve a useful purpose for the decisionmaker. They can provide him with an orderly and explicit consideration of factors important in the final decision as to

weapon selection. In doing so they can also serve as valuable information sources to the Congress and to GAO as an agent of the Congress, regarding the decisionmaking process by which the Department of Defense enters upon the costly and complex acquisition of major weapon systems.

## Adequacy of Contractors' Cost Records

721527

*GAO's study of the feasibility of establishing and applying cost accounting standards in the negotiation and administration of defense contracts, as required by Public Law 90-370, was described in the GAO Review, Spring 1970. In connection with this study, 15 GAO regional offices made a special inquiry into the nature and extent of cost accounting systems and related records maintained by selected contractors.*

A provision of the Armed Services Procurement Act, as revised in 1956, (10 U.S.C. 2313(b)), sets forth that:

\* \* \* each contract negotiated under this chapter shall provide that the Comptroller General and his representatives are entitled, until the expiration of three years after final payment, to examine any books, documents, papers, or records of the contractor, or any of his subcontractors, that directly pertain to, and involve transactions relating to, the contract or subcontract.

The approach taken in making this review was to gather information on the characteristics of cost records maintained by defense contractors and evaluate their usefulness for specific purposes. The cost accounting records of 45 contractors were examined. The selection included large, medium, and

small contractors engaged in both Government and commercial work on a wide variety of products. Of these contractors, 18 had total annual sales of more than \$50 million; 14 had annual sales ranging between \$15 million and \$50 million; and 13 had annual sales of less than \$15 million.

Efforts were directed toward ascertaining whether contractor cost accounting records and the records used to support price proposals for negotiated contracts were generally adequate; in particular, the purpose of the study was to find out:

- Whether the accounting system provided sufficient data to determine the cost of performing given contracts.

---

Mr. Harvey is an assistant regional manager in the Philadelphia Regional Office. He has been with GAO since 1957. He is a CPA (Pennsylvania and New Jersey) and a member of the American Institute of CPAs, the Pennsylvania Institute of CPAs, the National Association of Accountants, and the Federal Government Accountants Association.

---

- Whether the accounting records permitted pricing evaluation reviews.
- Whether they were useful for other evaluation reviews such as those for terminations, delay claims, or change-order pricing.

A byproduct of this inquiry was the information it provided on the extent of similarity and/or uniformity of cost records presently prepared by defense contractors. This information should be useful to the Cost Accounting Standards Board.

**Results of Survey**

The survey showed that supporting documentation was maintained by all contractors for basic accounting transactions. Material costs, both direct and indirect, and regardless of the type of accounting system, were supported by records such as purchase orders, invoices, receiving reports, vouchers, and paid checks. Similarly, labor costs, both direct and indirect, were supported by some form of labor timecard or job ticket and other payroll and payment records. To this extent the survey showed a general uniformity in types of cost records in use by contractors.

The area in which contractors' cost records were found to differ was in the summary records prepared from the above source documents. Reports for management summarized material, labor, and overhead costs in many forms. For example, labor costs were summarized by contract, work package, labor classification, or whatever other form was required by management or the customer.

As shown below, several types of cost systems were found among the 45 contractors:

<i>Type of cost system</i>	<i>Number of contractors</i>
Job order . . . . .	35
Process . . . . .	2
Product . . . . .	3
Departmental . . . . .	1
Job order/process . . . . .	1
Job order/product . . . . .	1
None . . . . .	2
	45
	45

There was little relationship between the type of cost accounting system and the type of summary or report-type records available.

During the survey emphasis was directed to the following:

- Adequacy of contractor cost accounting records for the calculation of cost of performance.
- Identification of costs by contract, line item, and change order.
- Inclusion in contractor records of the information required for pricing reviews.
- Comparability of proposal costs with incurred costs.

Each of these points is commented upon below.

**Calculation of Cost of Performance**

From the results of our inquiries, we classified the adequacy of contractor cost accounting records for the calculation of cost performance. (See the table on the following page.)

Noteworthy is the fact that the contractors whose records were inadequate were in the lower sales volume groups and that more than half in the third group were inadequate.

Annual sales volume	Number of contractors	Records considered	
		Adequate	Inadequate
Over \$50 million . . . . .	18	18	
\$15 to \$50 million . . . . .	14	11	3 or 21%
Under \$15 million . . . . .	13	6	7 or 54%
Total . . . . .	45	35	10

The 10 contractors whose records were inadequate employed a variety of cost accounting systems and practices, but there was little correlation of the type of system with the type of product or the volume of Government sales.

Of the 10 inadequate accounting systems, two did provide for the recording of costs by contractor or job order, but neither of the two contractors effectively administered its system. For those contractors who employed other than a job order system, our conclusions that sufficient data were not available were based on overall aspects of the systems or practices. For example, one contractor's costs were recorded by department; as a result, costs applicable to Government work were not identifiable to specific contracts or products. Two small contractors who had no cost systems maintained only records required for basic financial requirements and operating statements.

Overall, the survey results suggest that the nonavailability of sufficient summary data to provide cost of performance by contract may be limited to relatively small companies having a low volume or percentage of Government sales. However, the aggregate of their prime and subcontract sales to the Government is likely to be quite substantial even though the relatively small size of

the individual contracts may generally exempt their records from any critical scrutiny to determine the bases for pricing.

The larger defense contractors segregate costs in such a manner that summary data related to overall costs of performance are readily available. They maintain not only source documents but also summaries that identify, in one format or another, costs associated with total contractual effort. However, in only a relatively few cases are contract costs segregated as between basic contract costs and separately negotiated modifications to the contract. These contractors, who receive a large percentage of the defense procurement dollars, already have, in effect, standards of their own for summarizing costs.

The reason or reasons for this difference in recordkeeping between large and small contractors were not developed in depth during this survey. In the case of the smaller contractor, however, it appears that management is more closely associated with production and other aspects of operations; thus there is less need for records to provide a cost control or a reporting system. Conversely, the larger contractor whose management is possibly three or four echelons removed from operations finds

that a comprehensive reporting system is essential for the assembly of data for informed decisions.

A contractor whose involvement is substantial in either Government or commercial work, or both, develops and records significant cost accounting data because they are needed for effective operations. With respect to inadequate records, the most critically affected group of Government contractors may be expected to be those who have outgrown the personalized control possible in the small enterprise but have not yet adopted the sophisticated reporting practices that are indispensable when responsibility must be delegated. The adverse effect on the contractor will, to some extent, almost always be passed on to the Government.

Although summary data related to cost of performance of the smaller contractors may not be available or readily assembled, and the volume of transactions involved might seem to limit the significance of this problem area, the facts, if available, might well show that this is not the case. Reviews made by the GAO Philadelphia Regional Office have disclosed indications of significant overpricing which were not reported because of the inadequacy of documentation available to GAO from existing accounting records. On the other hand, we have seen instances where failure to summarize cost data in the normal course of operations has caused contractors to be unaware of or to overlook costs that would be acceptable in price negotiations.

With respect to contractor records providing cost of performance, we made determinations as to adequacy on the basis of contractor definitions and

procedures. However, from the survey it appears that the problem is not only whether records are available by which a contractor's interpretation of cost of performance can be evaluated, but also whether the various treatments employed by contractors yield uniform and meaningful cost determinations.

#### **Identification of Costs by Contract, Line Item, and Change Order**

We found that contractors whose accounting records permit a calculation of cost of performance generally provide for identification of cost by contract. The survey, however, indicated instances where adequate determinations of cost of performance could be made even though costs were not recorded by contract. Typical of such a situation is one in which a contractor with a process or product line cost system has records that require only the establishment of individual contract production cutoff points to identify the shop costs related to a contract. Applicable general and administrative and other costs could then be allocated.

Both large and small contractors tended to minimize the need for cost reporting systems refined to the point of associating incurred costs to line items or change orders. Although the reasons for minimizing such refinements in their costs systems were not developed as a part of this survey, we believe they represent the difference between satisfying the recognized needs of company management and the Government in the identification of costs.

The identification of cost by line item or change order is, nevertheless, necessary in certain instances. For example,

contractors' claims against the Government occur with some frequency and a reasonably precise identification of cost is necessary if an equitable settlement is to be achieved. In addition, congressional inquiries regarding contract overruns may request an identification of cost not only by contract but also by items procured under the contract. Also, the segregation of cost by line item and/or change order generally provides a better basis for identifying procurement and/or production weaknesses. All in all, it would seem that such a desirable refinement of costs has depended primarily on a company's view as to whether the value to management exceeded the added cost.

The Defense Contract Audit Agency and contracting officers are continually required to make pricing decisions that rest on the reasonableness and validity of contract costs. In addition the Armed Services Board of Contract Appeals, the GAO, and the Federal courts are from time to time involved in efforts which require determination of the reasonableness or equitability of contract costs. The fact that such reviews may be necessary makes difficult any persuasive argument for denying the need for records to be kept in such a manner as to permit identification, when necessary, of cost by significant line item and/or change order, especially for the larger procurements.

#### **Information Required for Pricing Reviews**

Reviews of pricing proposals could not be effectively performed at the plants of several relatively small contractors. Comparisons of proposal costs with costs of performance for these

contractors could not be made because data related to cost of performance were not recorded by contract, line item, or change order to permit comparison with pricing proposals. As indicated previously, individual instances of such a condition may not be significant in respect to possible adverse contract pricing. However, the author believes that in the aggregate a significant number of Government procurements and contracting entities are seldom subjected to the restraints provided by independent reviews of pricing and pricing practices.

For the larger contractors, historical cost data were considered generally adequate for pricing reviews. It was noted that contractor records generally were retained for a sufficient period to satisfy any postaward audit requirements.

#### **Comparison of Proposed and Incurred Costs**

Not all desirable comparisons of proposed and incurred costs could be made readily for 20 of the 45 contractors surveyed. For some of these contractors, summaries of cost of performance were not available; for others, certain comparisons could not be made for reasons such as the commingling of basic contract costs and change order costs. The deficiencies here concerned the smaller contractors and contracts. We feel that a close line of reference should exist between the classifications of proposed costs and actual costs.

The inability to make a reasonable comparison appears to be the result of a lack of similarity between estimating and accounting systems. Although such comparisons may not provide a total measure of a contractor's efficiency,

reliability, or overall technical capability, they do provide a common basis for evaluating the performance of a contract, procurement decisions, and/or the effectiveness of operations by contractor officials as well as by those Government representatives with related responsibilities.

The degree to which contract costs should be segregated depends upon the specific circumstances involved. A clear relationship between line item costs on a proposal and the costs subsequently recorded for the contract should be evident. Where this relationship is not evident, the identification of costs by contract and cost element should be the minimum requirement for cost presentation. With respect to the recording of such data, regulations or standards could provide for specific contractual agreement on the identification of costs by change order whenever practicable and necessary. In many instances, the segregation of change order costs may be neither feasible nor economical. In such instances, contractors might be required to satisfy Government procurement officials, generally in advance of performance, as to why costs of change orders cannot or should not be identified.

Improvement in the auditability of proposals and performance data for any desired review, including those for postaward audit or contract pricing purposes, depends largely on improvement in estimating and cost accounting systems and a corresponding improvement in the relationship between these systems.

## Concluding Comments

As mentioned previously, the direction taken in this inquiry was to gather information on the kinds of records kept by defense contractors and the adequacy of the records for examinations made by the Comptroller General. All of the 45 contractors surveyed maintained basic transaction records. From that point their accounting summations ranged from simple operating statements prepared on an enterprise basis to highly sophisticated statements prepared in great detail on a division, plant, contract, task, product, process, or other basis.

The existence of a wide variety of systemized cost controls certainly is no surprise to the accountant with broad commercial or Government experience. Correspondingly, it should be no great surprise to find inconsistencies among contractors as to what should be the nature of any selected cost accounting principles to be applied in the identification, classification, and control of costs. Cost control systems, whatever their form, can be guided by broadly defined cost accounting standards, when established, generally without radically changing present systems or attempting to introduce uniform systems. Existing cost controls provide a valuable fund of information on procedures and systems which could serve as a framework for the development and application of sound cost accounting standards that will gain general acceptance.

## Concepts of Auditing and Systems Analysis

721510

*How do the perspectives and techniques of the practitioners in these two fields differ? What are the prospects of bringing them closer together as a further means of expanding the competence of GAO staffs?*

The systems analysis group of the Office of Policy and Special Studies has 12 members at the present time. Four of these came from outside of GAO. The other eight came from other parts of GAO, either from the Civil Division or from regional offices. Each of these eight individuals spent about a year of intense, advanced study at major universities under the Educational Program in Systems Analysis sponsored by the U.S. Civil Service Commission and the National Institute of Public Administration.<sup>1</sup>

Not long ago I invited those who had had experience on the GAO audit staffs to let me have their views on the differences in approach and practice between a systems analyst and a GAO auditor in carrying out an examination into the results of a government program.

<sup>1</sup> See "Educational Program in Systems Analysis," by Morton A. Myers, the *GAO Review*, Winter 1971, p. 53.

The responses received were quite illuminating and, in my opinion, of considerable value in our continuing efforts to narrow the gap in thinking and practice between the two groups. As an overall objective, we in GAO should head toward integrating the two approaches for all of our review work as much as possible. In this way we can capitalize on the best from each approach and thereby further advance our collective capabilities and competence.

The specific views of the ex-auditor systems analysts varied somewhat but all struck the common chord that the big difference was in the scope of work embraced in the systems approach. Use of sophisticated analytical techniques was mentioned as a common tool of the systems analyst but they all recognized that most auditors had not had the opportunity to learn how to apply these techniques.

---

Mr. Morse is the director, Office of Policy and Special Studies.

---

The specific views of these analysts are synthesized below in a composite résumé of major areas of difference, together with my own arbitrating commentary.

The comments are analyzed under these broad headings:

- Coverage or scope of work
- Analytical techniques
- Use of data
- Consideration of alternatives
- Use of other analytical studies

### Coverage or Scope of Work

The systems analyst considers a program or activity as a system requiring inputs and producing outputs. His approach to examining a system is to review it in its entirety and to evaluate all aspects.

For a government program, he would not restrict himself to the primary agency responsible for the program but would also look at similar programs conducted by other agencies or organizations. This means, too, that he would not confine himself to Federal agency operations and expenditures. He would also be concerned with State and local government operations in the same field.

As to outputs produced, he would be concerned not only with benefits to the primary recipients but with benefits to society as a whole. He would also examine into any negative aspects of a program, sometimes called disbenefits.

In contrast, the auditor would not usually take on an entire program or activity and examine into all of its aspects. He would be more likely to select specific aspects or segments for penetrating examination, primarily on

the basis of known or suspected problems and opportunities to contribute to improvement. He would be less concerned with overall benefits or program effects and more concerned with identifying weaknesses in management or administration and getting them corrected.

He may cover the management or administrative aspects of an entire program over a period of time but his approach would be on a piecemeal basis. He would be more likely to be concerned with the program or activity of one agency rather than to examine into the operations of other agencies in the same activity area. Also, he probably would not get into State and local government programs and operations unless Federal funds were directly involved.

### Commentary

These approaches are not incompatible. Both have very definite merits. The audit approach evolved on the basis of hard experience and recognition that government programs and activities are simply too big to lend themselves to effective examinations of all aspects *in depth* and the production of evaluative conclusions within any reasonable time period. Also, the audit approach dealt primarily with input factors, such as costs, and the efficiency and economy with which operations were carried out. Recommendations for changed procedures, bulwarked with solid evidence in support of the need for change, produced savings in public expenditures and this, in itself, was (and still is) a desirable audit objective.

Little attention was paid to examining outputs or accomplishments and evaluating them in relation to costs. However, with the gradual extension of the scope of audit work to embrace evaluations of results, accomplishments, or effectiveness of programs, the more conventional audit approach and methods need expansion along the lines envisioned by the systems analyst.

The systems approach described is somewhat theoretical in that most systems analysts also recognize the impracticability of analyzing *all* inputs and outputs pertaining to a specific program or to a recognized objective being sought through government action. Thus, in practice, the scope of the systems analyst's work would probably not be as comprehensive as described.

The problem of seemingly impossible scope would also be resolved by the systems analyst in part by not examining specific operations in great detail. Instead, he would try to make overall analyses of inputs and outputs, i.e., cost-benefit analyses, in an effort to assess overall accomplishments or benefits in relation to costs and to inquire into the extent to which the outputs or results of a program are achieving the established objectives.

In any reasonably complete examination of a government program, both approaches will need to be followed, preferably in a fully coordinated, if not integrated, manner.

### Analytical Techniques

Systems analysts are trained to recognize and apply highly sophisticated analytical techniques to large aggregations of data in their effort to reach

significant conclusions. Such techniques include linear programming, regression analysis, queuing methods, network analysis, Monte Carlo methods, and decision theory application.

Auditors are not usually so trained. As a result, they are not prepared to recognize the usefulness of such techniques or to apply them. They are more likely to fall back on specific examples, usually selected on a judgment basis, to support conclusions.

### Commentary

This difference is one that can be largely eliminated through training. Even though all GAO staff members may not acquire all of the skills necessary to directly apply these techniques, knowledge of them and what they can do will enable auditors to recognize their usefulness in specific situations and arrange for special assistance in using them. Such assistance may be provided either in-house or by consultants.

By their nature, these techniques are not models of easy understandability. Systems analysts owe it to the users of their work to simplify their terminology and explanations of these highly technical procedures. This is of special importance in GAO where the products of such applications will be communicated to the Congress, the Members of which have to be assumed to be laymen.

In practice, it would seem appropriate to prepare the main body of our reports as clearly as possible in nontechnical terms and include the more technical aspects of the analytical work performed in an appendix for the use of

those interested in delving into the technical support and methods used.

### Use of Data

The systems approach often calls for the use of large amounts of data in trying to assess accomplishments and benefits. The systems analyst is more comfortable with large and relatively complex aggregations of data.

He is more likely to accumulate the data necessary, in his judgment, to measure the impact of a program or activity, if not otherwise available. He will test the data that is available or collected for significant differences and correlations, where appropriate. At the same time, he recognizes that very little data is absolutely precise and that in dealing with program results, the evaluator has to be concerned with ranges, probabilities, and similarities.

Where models are used in an analysis and evaluation of programs, they are usually simplified and include only those factors (i.e., variables) considered significant. This approach to evaluating program results necessarily involves some risk and the making of assumptions.

The auditor, on the other hand, tends to be suspicious of or even to display a dislike of large data banks. This may be due, in part, to a lack of experience in using such data which also usually involves computer handling. It may also be due, in part, to a desire for more precision than is likely to exist in large aggregations of data.

The auditor is more inclined to want to document his findings and conclusions with verified facts and specific examples which support his conclusions. He tends to avoid reaching con-

clusions of the kind that might be reached by the systems analyst who is willing to base his opinions on probabilistic assumptions or even on aspects difficult to measure in numbers.

### Commentary

Under either approach, GAO conclusions must be convincing and supportable. There is room for the audit approach to embrace the analytical approaches that make possible reasonable conclusions based on data which may be imperfect but which represent all that exists. At the same time, such data must be analyzed and evaluated with skill and due care to avoid improper or misleading conclusions. Factors to be considered in all cases are the costs of the various approaches and the extent to which each approach will support valid conclusions and constructive recommendations.

### Consideration of Alternatives

The systems analyst is concerned with alternative programs or activities and with whether they can accomplish specified objectives possibly better or at less cost. He believes that his task is to (1) discover, describe, and compare alternatives, (2) provide information, and (3) identify problems for the consideration of decisionmakers rather than addressing specific recommendations to them.

Auditors, by contrast, do not usually seek out and evaluate the possibilities of alternative programs.

### Commentary

The two approaches are not as far apart as these views might indicate.

GAO audit policy has generally called for the identification of better ways of doing things in the areas in which examinations are made. Recommendations for different (that is, alternative) courses of action usually result. GAO's audit effort has been directed mostly at operating matters rather than program results. Thus, application of established audit policy in the area of program results will automatically involve consideration of alternatives.

On the other hand, whether specific audit recommendations on identified program alternatives will be made to decisionmakers, as contrasted with merely pointing out possible alternatives, will undoubtedly be determined on a case-by-case basis considering such factors as congressional policy objectives, related experiences, judgments on impact of possible changes, and, possibly, political considerations.

### **Use of Other Analytical Studies**

The systems analyst is more likely to examine and make extensive use of analyses and evaluations made by others.

Auditors are less likely to take advantage of other studies in the same field.

### **Commentary**

On this score, the two approaches should be identical in practice. GAO audit policy has long called for examination of all pertinent evidence relating to matters being examined and this policy extends to review of studies by other groups. In the case of analytical studies, failures on the part of auditors to delve into them may be due to the technical complexity of the

studies and the fact that they are intelligible only to other trained analysts. The GAO approach in this case is to call for expert in-house assistance to examine such work and to assist in determining its relevance and usefulness.

### **General Observations**

The above viewpoints as to GAO audit approaches do not fit all GAO audit groups and it is not likely that they fit even any one group. It is an unsafe practice in GAO to make generalizations as to auditing practices among the several operating divisions or even among individual groups within a division.

However, the contrasts described above (1) do reflect the views of experienced GAO auditors who have become systems analysts and (2) therefore provide useful insights into the principal cited differences between the two fields. With the program evaluation objectives, at least in GAO, being the same, these differences will narrow in time.

In expanding GAO efforts into more penetrating evaluations of government programs, our objective should be to amalgamate the best features of both approaches. Incorporation of the concepts of systems analysis into GAO audit approaches will be an essential ingredient in broadening the scope of our review work.

Some of the differences referred to above are already becoming less pronounced as GAO auditors increase their efforts in program evaluation work and as understanding of systems analysis concepts by the audit staffs improves through staff contacts, increased communications, and participation in training programs.

u 1619

## Job Satisfactions of Accountants

The job satisfactions of many professional groups such as attorneys, physicians, and educators have been studied by behavioralists at an increasing rate in the last two decades. A comparable group, that of professional accountants in government, public accounting, and industry, however, has been virtually ignored.

In this paper our purpose is to compare the job satisfactions of accountants employed by agencies of the Federal Government to those of their counterparts employed in public accounting. Hopefully the findings presented will provide needed insight into the characteristics of those accounting positions in both the Federal Government and public accounting which are perceived to be the most and the least satisfying. For those interested in increasing the psychological rewards obtained from the accountant's job, these findings also can be used to delineate areas for improvement.

### Research Studies of Motivation

A precise definition of motivation is elusive. In lieu of adding to the seemingly endless list of new and old interpretations of the term, for purposes of our investigation, motivation is defined as an awareness on the part of the individual of tension within him which stirs him to action intended to relieve that tension.<sup>1</sup>

Many studies concerned with motivation have utilized the Maslow need-hierarchy theory as a conceptual framework and starting point.<sup>2</sup> Maslow contends that human needs arrange themselves in hierarchies of prepotency. As one need is satisfactorily fulfilled, it is replaced by another.<sup>3</sup> Man continually seeks to gratify some need. The hier-

<sup>1</sup> Leslie Beach and Elon L. Clark, *Psychology in Business* (New York: McGraw-Hill Book Company, 1959), p. 7.

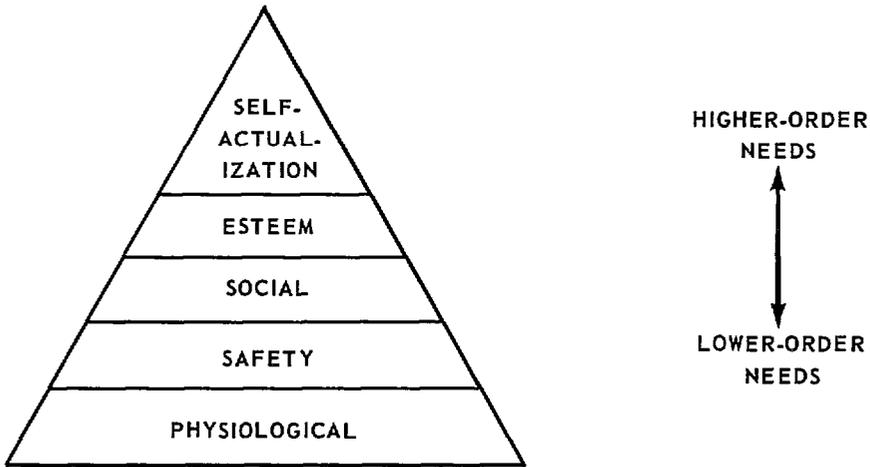
<sup>2</sup> Adapted from A. H. Maslow, *Motivation and Personality* (New York: Harper and Row, Publishers, Inc., 1951) and A. H. Maslow, "A Theory of Human Motivation," *Psychological Review*, Vol. 50 (1943), pp. 370-396.

<sup>3</sup> *Ibid.*

---

Mr. Strawser, a certified public accountant, is an associate professor of accounting at the Pennsylvania State University; Mr. Ivancevich is an associate professor of administrative science at the University of Kentucky; and Mr. Herbert is the director, Office of Personnel Management.

---



archy of needs from the lowest to the highest order is presented above.

Maslow characterized these needs as:

**Physiological**—The requirement for food, clothes, shelter, sex, etc.

**Safety**—The requirement for physical protection.

**Social**—The opportunity to develop close associations with other persons.

**Esteem**—The prestige received both within and from outside of the organization.

**Self-Actualization**—The opportunity for self-fulfillment and accomplishment through personal growth and development.

He also regarded these five sets of needs as being in a definite hierarchy, but not in an all-or-none relationship to one another. Maslow felt that decreasing percentages of satisfaction are encountered as an upper level need replaced a lower level one in predominance. For example, an accountant might be 95 per cent satisfied in his physiological needs, 75 per cent in his safety needs, 50 per cent in his social

needs, 20 per cent in his esteem and status needs, and only 10 per cent in his self-actualization needs.

Lyman W. Porter conducted a series of studies to investigate how managers perceived the psychological characteristics of their jobs.<sup>4</sup> To date, these studies have excluded accountants. Porter investigated the relationships between job level, type of work, organizational size, and line and staff positions on the one hand; and need satisfaction as reported in questionnaire responses on the other. Porter eliminated the physiological need category discussed by Maslow and added an autonomy need category. He felt that the physiological needs of managers are relatively satisfied and investigating these needs would not provide any useful information concerning motivation. He defined the autonomy need as opportunity, with related authority, for independent thought and action.<sup>5</sup>

<sup>4</sup> Lyman W. Porter, "A Study of Perceived Need Satisfaction in Bottom and Middle Management Jobs," *Journal of Applied Psychology*, Vol. 45 (February, 1961), pp. 1-10.

<sup>5</sup> *Ibid.*, p. 3.

In studies of the effect of job level upon satisfaction Porter found, using samples comprised of first-line supervisors and middle managers, that job level did influence need fulfillment. Middle managers reported more need fulfillment in most categories than did first-line supervisors. The highest need deficiency for both groups was found in the self-actualization category.<sup>6</sup> and <sup>7</sup>

Haire, Ghiselli, and Porter studied 3,641 managers from 14 countries including the United States.<sup>8</sup> Managers in 13 countries (all except Japan) reported that the self-actualization need category was the least satisfied. Other areas noted to be deficient in need fulfillment were the autonomy and esteem areas. The deficit in the self-actualization and autonomy needs was more than twice as great as the deficit in the other three need areas combined.<sup>9</sup>

A study of union officials by Miller considered the impact of position in the union hierarchy upon job satisfaction.<sup>10</sup> This investigation disclosed that lower level union officials were generally less satisfied than upper level officers in all five need categories.

A study of certified public accountants conducted by Sorenson attempted to identify and to analyze commonalities and conflicts in need satisfaction between professional and bureaucratic models of public accounting organiza-

tions.<sup>11</sup> He defined a professional model as one in which the individual behaved as a professional and a bureaucratic model as one in which the individual behaved as an employee.

The research concluded that CPAs with low bureaucratic orientations consistently reported lesser degrees of job satisfaction. The bureaucratic orientation of subjects appeared to be the most significant determinant of the level of satisfaction.

Do the findings reported in the studies cited above also apply to professional accountants employed by the Federal Government and by public accounting? To date, this question remains unanswered due to the lack of empirical research data. We have attempted to fill this gap with the present investigation.

## Methodology

A modified form of the Porter job satisfaction questionnaire was used to obtain the data for this study. The questionnaire contained 12 need items which were randomly arranged in the questionnaire but are presented below according to Maslow's need hierarchy. Categories are arranged from the lowest order (most dominant need) to the highest order (least dominant).

### I. Security Need

1. The feeling of security in my accounting position.

### II. Social Needs

1. The opportunity, in my accounting position, to give assistance to other people.

<sup>6</sup> *Ibid.*, pp. 1-10.

<sup>7</sup> Lyman W. Porter, "Job Attitudes in Management: IV. Perceived Deficiencies in Need Fulfillment as a Function of Size of Company," *Journal of Applied Psychology*, Vol. 47 (December, 1963), pp. 386-397.

<sup>8</sup> Mason Haire, Edwin E. Ghiselli, and Lyman W. Porter, *Managerial Thinking: An International Study* (New York: John Wiley and Sons, Inc., 1966).

<sup>9</sup> *Ibid.*, p. 175.

<sup>10</sup> E. Miller, "Job Satisfaction of National Union Officials," *Personnel Psychology*, Vol. 19 (Autumn, 1966), pp. 261-274.

<sup>11</sup> James E. Sorenson, "Professional and Bureaucratic Organization in the Public Accounting Firm," *The Accounting Review*, Vol. XLII (July, 1967), pp. 553-565.

2. The opportunity to develop close associations in my accounting position.

### III. *Esteem Needs*

1. The feeling of self-esteem obtained from my accounting position.
2. The prestige of my accounting position within the firm or agency (that is, the regard received from others in the firm or agency).
3. The prestige of my accounting position outside the firm or agency (that is, the regard received from others not in the firm or agency).

### IV. *Autonomy Needs*

1. The opportunity for independent thought and action in my accounting position.
2. The authority connected with my accounting position.
3. The opportunity, in my accounting position, for participation in the setting of goals.

### V. *Self-Actualization Needs*

1. The opportunity for personal growth and development in my accounting position.
2. The feeling of self-fulfillment obtained from my accounting position (that is, the feeling of being able to use one's own unique capabilities, realizing one's potentialities, etc.).
3. The feeling of worthwhile accomplishment in my accounting position.

The accountants participating in the study were provided with the following instructions:

On the following pages will be listed several characteristics con-

nected with your accounting position. For each you will be asked to provide two ratings on a 7-point scale:

- a. How much of the characteristic is there now connected with your accounting position?
- b. How much of the characteristic do you feel should be connected with your accounting position?

For each of the 12 need-related items, the respondents were instructed to answer the above questions by circling a number on a rating scale that ranged from 1 to 7. The low numbers represented minimum amounts, high numbers represented maximum amounts.

### Need Fulfillment Deficiency

The amount of perceived deficiency for each of the 12 need items was calculated by subtracting the rating for part *a* of an item ("How much is there now?"), from part *b* of the item ("How much should there be?").<sup>12</sup> For example, assume that a respondent completed the security need question as follows:

The feeling of security in my accounting position:

- a. How much is there now?  
(min.) 1 ② 3 4 5 6 7 (max.)
- b. How much should there be?  
1 2 3 4 5 ⑥ 7

This accountant has circled "2" in answer to part *a* and "6" in answer to part *b*. His need-deficiency score would therefore be "4." The assumption is made that the larger the difference,

<sup>12</sup> Lyman W. Porter, "Job Attitudes in Management: IV. Perceived Deficiencies in Need Fulfillment as a Function of Job Level," *Journal of Applied Psychology*, Vol. 46 (December, 1962), pp. 375-384.

when part *a* is subtracted from *b*, the larger the degree of dissatisfaction or the smaller the degree of satisfaction. Individual scores are then averaged to derive an overall score for each need item for that particular group of accountants.

This method of measuring perceived need satisfaction is an indirect measure derived from answering part *a* and part *b*. The method has two advantages:

- (1) The subject is not directly questioned as to his satisfaction. Therefore, any tendency for a simple "response set" to determine his expression of satisfaction measure to conform to what he thinks he "ought" to put down versus what he actually feels to be the real situation is avoided.<sup>13</sup>
- (2) Secondly, this method of measuring need fulfillment is a more conservative measure than would be obtained by a single question concerning satisfaction. It takes into account the fact that higher level positions should be expected to provide more rewards because it utilizes the difference between obtained and expected satisfaction. In effect this method asks the respondent: "How satisfied are you in terms of what you expected from this particular management position?" Thus, it is designed to be a meaningful measure in comparing different management groups.<sup>14</sup>

### Sample

The questionnaire was distributed to a random sample of 600 certified public accountants employed by agencies of the Federal Government and by public accounting firms in the United States. The sample was chosen by random methods from the membership directory of the American Institute of Certified Public Accountants which lists

approximately 60,000 CPAs by name and agency or firm affiliation.<sup>15</sup> Replies were received from 351 of the 600 accountants (for a response rate of 58.5 percent). A random sample of nonrespondents to the survey was contacted in order to analyze nonresponse bias. It was found, however, that there was similarity between respondents and nonrespondents on such variables as: (1) age, (2) education, (3) length of tenure with present firm or agency, and (4) length of tenure in present position.

### Findings

Table 1 presents data comparing the average need-satisfaction scores of the top level accountants. The item scores indicate that the largest need deficiencies (i.e., highest mean value) for both groups of respondents occur in the self-actualization need category. The scores also indicate that for five need items—security in position, feeling of self-esteem, prestige inside firm or agency, prestige outside firm or agency, and authority in position—the public accountants perceive more deficiency. For the other seven items—opportunity to help people, opportunity for friendships, opportunity for independent thought and action, opportunity to participate in goal setting, opportunity for growth and development, feeling of self-fulfillment, and feeling of accomplishment—the Government accountants report higher deficiency. It is interesting to note that with regard to one need item, security in job, the Government accountants report that there is an

<sup>13</sup> *Ibid.*, p. 378.

<sup>14</sup> *Ibid.*

<sup>15</sup> American Institute of Certified Public Accountants, *Alphabetical List of Members* (New York: American Institute of Certified Public Accountants, 1967).

**TABLE 1**  
**Average Need-Satisfaction Scores of Top Level Accountants:**  
**Federal Government and Public Accounting**

Need categories and items	Federal Government accountants: N=51	Public accountants: N=107
I. Security need:		
a. Security in position . . . . .	(. 29)	* . 42
II. Social needs:		
a. Opportunity to help people . . . . .	. 57	. 49
b. Opportunity for friendships . . . . .	. 49	. 48
III. Esteem needs:		
a. Feeling of self-esteem . . . . .	. 43	. 56
b. Prestige inside firm or agency . . . . .	. 49	* . 82
c. Prestige outside firm or agency . . . . .	. 50	. 66
IV. Autonomy needs:		
a. Opportunity for independent thought and action . . . . .	. 66	. 60
b. Authority in position . . . . .	. 40	. 46
c. Opportunity to participate in goal setting . . . . .	. 63	* . 35
V. Self-actualization needs:		
a. Opportunity for growth and development . . . . .	. 97	* . 70
b. Feeling of self-fulfillment . . . . .	. 97	* . 42
c. Feeling of accomplishment . . . . .	1. 06	. 95

Note: The larger the average mean values the less the perceived need satisfaction.  
 \*Designates significant differences at .05 level of confidence as determined by two-tailed t-test.

excess rather than a deficiency. Statistically significant differences were found in analyzing five of the 12 need items.

The item score for each of the five need categories were combined to derive cluster scores.<sup>16</sup> These scores are presented in rank order format for top level accountants in the Federal Government and public accounting in Table 2. A review of Table 2 shows that while the rankings of the two groups are similar, the Government accountant rank order is closer to the need hierarchy model. The security, autonomy, and self-actualization needs are ranked exactly as postulated by Porter. The public accountant rank order deviates

somewhat from the theoretical model. For example, the autonomy need is the second most satisfied category and the esteem need the fourth most satisfied. It is Porter's contention that the rank order of need satisfaction from most to least would normally be—security, social, esteem, autonomy, and self-actualization.

The findings presented in Table 3 report the average need-satisfaction scores of middle level Government and public accountants. The middle level public accountants report greater perceived need satisfaction for 11 of the 12 items (all except security in position). Four statistically significant differences were found. Again, the largest need deficiencies are perceived to be in the opportunities to fulfill the self-actualization category.

<sup>16</sup> The cluster scores are the average of the item scores for each need category.

**TABLE 2**

**Average Need-Satisfaction Cluster Scores in Rank Order by Category for Top Level Accountants: Federal Government and Public Accounting**

Federal Government accountants: N=51			Public accountants: N=107	
Rank	Need category	Cluster score	Need category	Cluster score
1	Security . . . . .	(.29)	Security . . . . .	.42
2	Esteem . . . . .	.46	Autonomy . . . . .	.47
3	Social . . . . .	.53	Social . . . . .	.49
4	Autonomy . . . . .	.56	Esteem . . . . .	.68
5	Self-actualization . . . . .	.99	Self-actualization . . . . .	.69

**TABLE 3**

**Average Need-Satisfaction Scores of Middle Level Accountants: Federal Government and Public Accounting**

Need categories and items	Federal Government accountants: N=65	Public accountants: N=128
<b>I. Security need:</b>		
a. Security in position . . . . .	.16	.40
<b>II. Social needs:</b>		
a. Opportunity to help people . . . . .	.52	.33
b. Opportunity for friendships . . . . .	.55	.51
<b>III. Esteem needs:</b>		
a. Feeling of self-esteem . . . . .	1.16	*.60
b. Prestige inside firm or agency . . . . .	.82	.63
c. Prestige outside firm or agency . . . . .	.91	*.56
<b>IV. Autonomy needs:</b>		
a. Opportunity for independent thought and action . . . . .	.86	.62
b. Authority in position . . . . .	.94	.71
c. Opportunity to participate in goal setting . . . . .	1.26	1.11
<b>V. Self-actualization needs:</b>		
a. Opportunity for growth and development . . . . .	1.56	*.92
b. Feeling of self-fulfillment . . . . .	1.23	1.12
c. Feeling of accomplishment . . . . .	1.23	*.84

\*Designates significant differences at .05 level of confidence as determined by two-tailed t-test.

Table 4 brings into clear focus the rank orders of the cluster scores for the middle level accountants. The five need categories are ranked in an identical array for both groups of accountants. It should be noted, however, that the absolute values of the five cluster scores for the Government group is somewhat

higher, particularly among the higher level need items.

**Discussion**

Previous empirical studies of the effects of position in the managerial hierarchy of respondents on perceived

TABLE 4

Average Need-Satisfaction Cluster Scores in Rank Order by Category for Middle Level Accountants: Federal Government and Public Accounting

Federal Government accountants: N=65			Public accountants: N=128		
Rank	Need category	Cluster score	Need category	Cluster score	
1	Security	.20	Security		.40
2	Social . .	.57	Social . .		.42
3	Esteem . .	1.03	Esteem		.59
4	Autonomy .	1.07	Autonomy		.80
5	Self-actualization .	1.40	Self-actualization		.96

need satisfaction have consistently found that self-actualization needs are the most deficient area of satisfaction. The present study lends further support to these findings.

The present research indicates that the security need is fairly well satisfied for both groups of accountants. A high degree of satisfaction in this category is hypothesized by Maslow and Porter in their need hierarchy frameworks. Unprecedented, however, is the finding that top level Government accountants report *too much* security in their positions. (Middle level Government accountants and both groups of public accountants report a slight deficiency in the security need). It appears that further research designed to identify the specific factors underlying this unusual finding is warranted.

The results of the present study also indicate that social needs are relatively satisfied for both groups of accountants. The public accountants report slightly higher need satisfaction in this category than do their Government accounting counterparts.

At middle level positions, public accountants report significantly higher degrees of esteem satisfaction while exactly the opposite is true at the top

level positions. It is interesting to note that the top level public accountants report less satisfaction in the esteem need items than do their middle level colleagues. Although the top level respondents are more satisfied in the important self-actualization category they appear to be less satisfied with their prestige both within and outside their firms. This finding may indicate that the upper echelons of the public accounting profession may be coping with the question of professionalism in accounting. It has been stated that while the public readily accepts the premise that the physician, lawyer, and scientist are professionals, there are some who question the accountant's claim to full professional status. This lack of recognition from the public may be responsible for the top level accountants' responses to the esteem need item questions. Further research must be undertaken to determine the exact reasons for this finding.

While middle level Government accountants report relatively low levels of esteem need satisfaction, this situation improves considerably at the top level of Government accounting.

The certified public accountants employed in public accounting report

higher degrees of satisfaction in the autonomy need in every item except "authority in position" where the opposite is true for the top level accountants.

Both levels of Government accountants report significantly fewer opportunities to satisfy the important self-actualization needs. Statistically significant differences were noted in analyzing four of the six items in this category.

In interpreting the above findings, it would seem that several "caveats" are in order. First of all, a "0" score for the various "need deficiencies" should not be regarded as any type of absolute goal or objective. As previously indicated, different percentages of satisfaction are expected among the various categories of needs. Furthermore, a certain amount of "deficiency" is not necessarily bad; some need would seem to be a healthy situation. Every job, especially one of a professional nature,

needs a challenge; it is possible to have "too much satisfaction."

In addition, the present research compares the job satisfactions of CPAs at top and middle level positions employed in public accounting and Government. In some ways, the groups may be somewhat different. In a sense, middle level accountants are "still striving" while those at top levels have usually attained many of their goals. Also, there may be different methods of effectively motivating the CPA in public practice as opposed to his counterpart in Government. All of these factors complicate direct comparisons among the groups and, to some extent, should be kept in mind in considering the findings reported above and the tentative conclusions drawn from them. The results of the study, however, should be useful in designing and implementing possible improvements in programs and methods of employee motivation and in identifying those areas where further research seems to be appropriate.

# Behavioral Science— A Management Tool

7/21511

*Understanding the principles and techniques of behavioral science can help auditors achieve their audit objectives.*

Having problems accomplishing your audit goals? Perhaps you need to consider behavioral science in your managerial approach.

What is behavioral science? It is not running rats through mazes. Instead, behavioral science is the study of an individual's conduct influenced negatively or positively by his environment. It is considered a management tool to be used to turn men's irritability into useful effort, creative and beneficial to the organization.

Behavioral science is an approach that can be used to avert serious problems that men and organizations could be unconsciously building. It can assist in identifying organizational hangups, maximizing an employee's strength, and assuring audit efficiency and timely reporting.

## Management Approaches

The basic tenets of behavioral scientists include two distinct and conflicting

approaches to management—Theory X and Theory Y.

### Theory X

Theory X is the favorite of the defensive boss. He believes that most workers are untrustworthy, lazy, and irresponsible and require close supervision, and that external rewards must be carefully rationed to keep workers motivated.

Is this your attitude and approach? Then undoubtedly you have wondered what you did to make that staff member blow up! Is it possible you need to think a little before you speak? Perhaps you need to remind yourself that the men and women who work with you, and for you, are people and will not favorably respond unless you treat them as people.

While behavioral science is not a people-problem panacea, it can help avoid the kinds of misunderstandings that stifle efficiency and creativity. This does not mean that individual whims are to be humored—but it does mean

---

Mr. Hill is a supervisory auditor with the Detroit Regional Office. He is a graduate of Ferris State College, and has been with the General Accounting Office since 1962.

---

that an individual's viewpoint should be understood and considered.

### Theory Y

Theory Y presumes that people are inherently creative, strong, and want to make a contribution. According to Theory Y, people work best when supervisors stop erecting defenses against presumed apathy and act as though they recognize potential.

Have you overheard your men say, "This is not an operation, it is a happening!" Perhaps behavioral science is the solution. How often has one of your men felt he could bypass you when he believed the problem beneath your attention, and come up with a sound workable solution that would withstand scrutiny?

### Understanding and Supervising Your Staff

When did you use a staff member's potential, tailored to job needs, to minimize the amount of time required to audit and issue a report? Each supervisor honestly interested in doing a job should organize his staff by function, responsibility, and authority to get the most effective performance available, or that can be made available. Without sincerity toward men, difficulty will be experienced and the performance of individuals will slip to the point that productivity is affected.

Auditing, as well as any management function requiring technical knowledge, must be blended with judgment. While it is true that effectively conducting an audit requires a thorough knowledge of conditions and objectives, some people have the mistaken notion

that audit problems are technical in nature and that the human element plays only a minor role in the solution. To accomplish the audit objective efficiently, effectively, and timely, however, requires understanding and management of individuals assisting in the work.

If individuals are allowed to participate, does behavioral science lead to better decisions by consensus or cause wasted audit time in bull sessions? Wasted time can be prevented if the sessions are confined to audit conditions and objectives. The advantage of these sessions is the realization that consensus, rather than a determination by one individual, can frequently lead to better decisions.

### Techniques To Consider

Some techniques for consideration, according to Abraham H. Maslow in his book *Motivation and Personality*, published by Harper in 1954, are:

- Learn what makes each of your subordinates tick.
- Find out what turns them off.
- Keep an open mind.
- Remember that you are managing people, not machinery.
- Key your actions to avoid misunderstandings that turn off creativity.
- Do not expect miracles from behavioral science. It is a tool, not a panacea. Use it, but do not let it become a crutch.

Not all supervisors use these techniques. Instead, they use conflict to arrive at a decision or audit procedure that everyone supports. These supervisors, although considered successful, must learn that attitudes have changed.

People today will not tolerate this bull-of-the-woods approach. Behavioral science, therefore, must be used to overcome such reaction. Supervisors do not need new tools. Instead, they should learn to practice some of the old ones: awareness, rapport, communication, patience, and understanding.

### **Behavioral Science: A Solution**

Ever wonder what supervisors do with human resources? Do they achieve the best possible potential from their subordinates which, in turn, expedites completion of the job?

If taught behavioral science, the supervisors of tomorrow should obtain the desired results and should meet the needs of the employees. If behavioral science is learned and supervisors satisfy the needs of employees, efficiency will increase and turnover rates will decrease.

Behavioral science needs to be practiced in order to audit efficiently and effectively. Remember these are not new techniques—just refinements of old ones. Patience, understanding, honesty, and fair play still work.

# Legislative Control Over Expenditures

*The author reviews the British and American systems of legislative control over Treasury expenditures and comments on their relevance to today's changing economy.*

In order to adjust to changing economic and social conditions, a country must have a flexible system of financial administration. With certain improvements made over the years, the British system of financial administration, from which our system evolved, has proven superior to other types of control used in other countries.

This article will attempt to show (1) the development of the British financial administration system including Parliament's increasing control over the financial affairs of the Crown (executive branch) and (2) how the British Parliament and our Congress control expenditures of the executive branches of the respective Governments.

## Treasurer of England

The Office of the Treasurer of England is of Norman origin and dates from 1216.

From the middle of the reign of Henry III (1216-1272), the Treasurer

of England ranked third among the great medieval officers of England, after the Archbishop of Canterbury and the Lord Chancellor. The Treasurer actually held two positions, Lord Treasurer of England and Treasurer of the Exchequer. The Office of Lord Treasurer advised the king on financial policies; that is, whether the king could afford a new palace or fleet. The Office of Treasurer of the Exchequer was (1) the custodian for some of the king's valuables and (2) the accounting agency responsible for collecting taxes due the Crown and paying amounts owed by the Crown in accordance with law and custom.

At first, the British system did not function properly due primarily to a lack of supervision of the clerks by the Lord Treasurer and the Exchequer. In addition, appointments were made for political reasons to the most lucrative positions and for family reasons to the average positions. Once appointed, offi-

---

Mr. Goldberg is a supervisory auditor in the Civil Division. He is a graduate of the University of Maryland and has been with the General Accounting Office since 1959.

---

cials could hold their jobs for life since there was no procedure for administratively removing dishonest or incompetent officials.

The development of the Treasury as a department began in the late 1500's when the Office of the Lord Treasurer of England started giving instructions to executive departments concerning receipts and disbursements of the Exchequer.

In 1612 King James I established the post of Treasurer of England in the Treasury Commission and entrusted to a board of five or six persons the duties of providing advice on monetary and fiscal matters and maintaining accounting records.

In order to prevent excessive grants from being issued, the king of England in 1660 required that the Treasury's opinion of appropriation laws be obtained before any warrants were presented for his signature. Warrants are documents authorizing certain officials to disburse moneys from the Treasury.

### Parliamentary Control

The origin of the British system of legislative control over financial matters was the Magna Carta proclaimed in June 1215, which provided that only the legislature could authorize the imposition of taxes. The next major development in Parliamentary control occurred 450 years later when Sir George Downing persuaded Charles II to agree to accept a Parliamentary appropriation for a specific purpose.

Sir Downing, known as the father of the principal of "supply" (financing programs through specific appropriations), was appointed Secretary of the Treasury Commission by Charles II in

1667 and in that year he instituted the first system of Treasury records which showed disbursements and revenues by program.

In 1668 Parliament spelled out the Treasury's powers in greater detail. Basically, all money warrants except secret service warrants (for intelligence) were required to be signed by the Exchequer and countersigned by the Treasury Lords. Further, all disbursements were required to be made out of the Exchequer, which meant that the departments must apply to the Treasury for money. Secret service requests for funds came under Treasury control in 1676. Thereafter, all departments needed Treasury authorization to spend any money.

The British Bill of Rights of 1688 required the Crown to relinquish to Parliament the right to impose taxes and the right to control expenditures out of the public revenues. From being a department wholly responsible to the king, the Exchequer after 1688 became responsible to Parliament, with the function of determining that no payments were made out of the public money without the express authority of Parliament.

The next major development was Standing Order No. 78 issued in 1706 by the House of Commons which provided that only the Crown could initiate proposals for expenditure. Since 1714, the Treasury has been governed by a Board of Commissioners, numbering seven ministers, who carry out the duties of the ancient office of Lord Treasurer. One Commissioner is the Prime Minister, another is the Chancellor of the Exchequer, and the remaining five are Junior Lords, Members of Parliament. The Chancellor of the Exchequer

has the responsibility for preparing the annual Estimates (budget) and for deciding the amounts and details of the Estimates.

### Four Principles of Financial Administration

By the end of the 18th century four principles for sound financial administration had emerged in England.

- No money can be obtained or spent without legislative authority. The development of this principle was discussed above.
- All funds obtained are deposited in a single fund from which all expenditures are made. A British commission in 1780 recommended that one fund should be established to account for revenues and expenditures of public money. The Customs and Excise Act of 1787 established the Consolidated Fund (Exchequer) as “a fund into which shall flow every stream of the revenue and from which shall issue the supply for every public service.”
- The period of financial accountability is a year. From the earliest English records until 1752 the financial year (fiscal year) ended September 29. The financial year was changed several times until March 31 was established as the end of the financial year in 1854.
- The audit was instituted as a measure of supervision and control. During the 16th and 17th centuries, audits required by Elizabeth I (1558–1603) of the public accounts were not very efficient and the audits were usually many years

in arrears. Coinciding with the administrative reforms previously mentioned, an Audit Board consisting of five commissioners was established at the end of the 18th century. In 1830, the first appropriation audit was performed in which the auditors not only ascertained that the payments conformed to proper official Parliamentary authority, but that all of the payments were in accordance with the purposes and amount of Parliamentary appropriation acts.

These four principles were incorporated into the financial system of the United States as follows:

- Article I, section 9, of the United States Constitution of 1789 provides that:

No Money shall be drawn from the Treasury, but in Consequence of Appropriations made by Law;

- The fiscal year concept was adopted in 1789 in the first general appropriation act passed by the Congress (1 Stat. 95).
- The fund, with several exceptions, into which revenues are deposited and from which expenditures are made has by usage and custom since 1789 been called the general fund.
- Responsibility for making audits and investigations of Government agencies was provided for in the first Treasury Act of September 2, 1789.

### British Budget System

The British supply or appropriation process begins December 1, when the

departments submit their Estimates (budgets) for Consolidation Fund supply services to the Treasury for review for the financial year beginning April 1. Supply services are public services financed by annual appropriations of the Parliament. The Estimate excludes any request for Consolidated Fund standing services. Standing services are those items which Parliament has determined to be of a permanent nature and include such items as interest and management costs on the national debt, payment to the Sovereign and Royal Household, and pensions of former Prime Ministers.

Parliament and the general public are informed of the Estimates in February of each year when the "Vote on Account" bill, which shows the totals for each Estimate, is published by Treasury. Because it is impractical for Parliament to go through the entire supply process before the financial year begins on April 1, the "Vote on Account" also shows the amounts that will be required to cover the first 4 or 5 months of the financial year. Vote is the deed by which Parliament actually grants or appropriates funds. The "Vote on Account" generally becomes law as a clause of the March Consolidated Fund Act on the last day of March upon the signature of the sovereign.

In early April the Chancellor of the Exchequer makes the budget statement to Parliament, after which the Committee of Ways and Means of the House of Commons votes immediately on resolutions to continue taxes at the current rate, to increase, or to lower them. A general resolution is then introduced

and approved by the Ways and Means Committee with consent of the House of Commons to amend the law authorizing the national debt for another year.

The House of Commons has a rule that nothing may be included in a Finance Bill which was not covered by a previous resolution. The Finance Bill, which is then introduced and discussed over a period of 8 to 10 weeks, puts the budget proposals on taxation, duties, and the national debt into statutory form.

The House of Commons, after debate on the Estimate in its Committee of Supply, grants (votes) the sums to be spent. Before the grants are legally appropriated, the House of Commons, upon approval of its Committee of Ways and Means, authorizes the issue of money to meet the voted expenditures. The House of Lords must assent to the Appropriation Act before it is passed. Passage usually occurs at the end of July.

Other items in the supply process include (1) Supplementary Estimates in the March Consolidated Fund Act and (2) Excess Votes. Supplementary Estimates provide funds to agencies which do not have enough money for the current financial year, similar to supplemental appropriation acts enacted in the United States. In the one or two cases when it becomes necessary for the Crown to make expenditures not authorized by Parliament and Parliament is not in session, Excess Votes provide Parliamentary authority for the expenditure pursuant to a Treasury authorization that the need was real and urgent.

## United States Budgetary System

In the United States, the Office of Management and Budget is responsible for preparing the budget, which is presented by the President to the Congress in early January of each year. Appropriation and tax bills originate in the House of Representatives. The Ways and Means Committee of the House of Representatives has the power over tax measures, and appropriation committees in the House and Senate review the budget requests of the departments. Upon passage by both Houses and approval by the President, appropriation and tax measures become law.

We have basically three types of appropriation acts: (1) general appropriation acts which are mainly those for the current fiscal year, (2) supplementary appropriation acts which supply additional funds during the current fiscal year to departments which need more money than originally appropriated, and (3) continuing joint resolutions which provide spending authority for the first several months of the new fiscal year until the Congress has passed the general appropriation acts.

### Control Functions

The Exchequer and Audit Departments Act, 1866, established the Exchequer and Audit Department, headed by the Comptroller-Auditor General. The Comptroller-Auditor General is independent of the Treasury and the Crown, and is responsible to and reports to the House of Commons of Parliament.

The Financial Year 1969 Estimate budgeted £977,000 (\$2,344,800) for the Exchequer and Audit Department

for a staff of 587 persons to review the British expenditures of £11.5 billion (\$27.6 billion) in financial year 1968.

The actual process of issuing money appropriated by Parliament is formal and is in accordance with Sections 14 and 15 of the Exchequer and Audit Departments Act, 1866. Parliament votes (appropriates) money for specific purposes to various heads of expenditure (account symbols and titles) and the funds are accounted for under the same heading. Supply grants (appropriations) are technically made to the Crown and must be released by a Royal Order before the funds are placed at the disposal of the Treasury. Money is issued in the form of imprests (or advances) from the Exchequer account to the credit of the spending departments in the accounts of the Treasury.

Pursuant to the 1866 act, the Comptroller-Auditor General is responsible for insuring that the Treasury's request for credit (authorization) is in accordance with the grants of Parliament. Section 15 of the act allows the Comptroller-Auditor General to grant credits to the Exchequer at the Bank of England "when any Ways and Means shall have been granted by Parliament or resolution of the House of Commons." The total credits must not exceed the amount of Ways and Means granted. On the Treasury's requisition form called an imprest, the Comptroller-Auditor General writes the following:

I hereby grant a credit to the Treasury on the Account of the Exchequer at the Bank of England or on the growing balance thereof to the amount of £-----, on account of Ways and Means granted for the year ----

This is the critical measure that releases the credit. Without the credit, Treasury

would have no legal authority to issue checks from the Exchequer account at the Bank of England. A Treasury Lord would run the risk of being held accountable for an unauthorized check. In summation, each issue out of the Exchequer for supply services requires the authority of a grant of Parliament, a Royal Order, an imprest from the Treasury to the Comptroller-Auditor General, a grant of the credit by the Comptroller-Auditor General, and a Treasury Order to the issue of credit.

In the United States, the Budget and Accounting Act, 1921, established the General Accounting Office as an independent agency directly responsible to the Congress. In the fiscal year ended June 30, 1970, the appropriation for GAO was \$70,273,000 for a staff of 4,516 persons. In contrast, total outlays of all Federal agencies for 1970 were about \$197 billion.

Article I, section 9, of the United States Constitution states that no money shall be spent, except as authorized by the Congress. Amounts are credited to the accounts of the spending departments in the Treasury's central accounting records for cash operations. The vehicles for issuing the credits are "appropriation warrants."

The actual process of issuing money or credits appropriated by the Congress is not spelled out in the Constitution, but the practice of using warrants was established in the act of September 2, 1789 (1 Stat. 65), which created the Department of the Treasury.

The Comptroller General, the head of GAO, is responsible for determining that a request by the Treasury to establish a credit for an agency is in accordance with the appropriation of the Congress.

The Treasury's requisition form, "The Department of the Treasury Appropriation Warrant," which authorizes disbursement of funds by the Treasurer of the United States, is initiated and signed by the Secretary of the Treasury and contains the following:

The Congress having, by the Acts hereon stated, made the appropriations hereunder specified, the amounts thereof are directed to be established in the general and detailed appropriation accounts, totaling in all \$\_\_\_\_\_ and for so doing this shall be the warrant.

The authority that releases the credit enabling authorized disbursing officers to issue checks on the account of the Treasurer of the United States is the countersigned signature of the Comptroller General or his designated representative. The Treasurer of the United States could be held accountable to refund any amount issued without this authorization.

Unlike the British Comptroller-Auditor General, the American Comptroller General has statutory power pursuant to 31 U.S.C. 74 to make advance decisions on the legality of any proposed disbursements. These decisions are final and conclusive upon the executive branch.

## Conclusion

The British system of legislative control over expenditures has proven its flexibility to meet changing needs for over 750 years. During that time, Parliament has increased its control over the financial affairs of the Crown and has been able to institute important changes in the Crown's financial affairs. The Comptroller-Auditor General who

is independent of the Treasury and the Crown provides an important check on financial matters. Also, the "vote on account" method of supplying temporary funds for new programs until Parliament officially appropriates the funds provides flexibility in that it allows Parliament to allocate moneys without the entanglements and delays involved in the regular appropriation process.

In the United States, there has been a trend away from detailed legislative control of finances and an inclination toward greater reliance on the executive agencies to maintain proper controls. Nevertheless, I believe that, for economic reasons, more congressional control over finances should be established. There is not enough money to solve all of our social and economic problems. For the Congress to allocate funds to those programs where it would do the most good, programs competing for the limited funds should be subjected to strong legislative control.

The principal function of both the British Comptroller-Auditor General and his American counterpart, the Comptroller General, is of course not to control, but to audit expenditures. Recently, a bill was introduced in the 92nd Congress to create an agency in the Congress to examine budget requests, program costs and effectiveness, appropriations, and national priorities. A section of this bill would have the Comptroller General furnish copies of analyses of expenditures with respect to any department or agency in the executive branch. Congress needs this mechanism to help congressional staffs examine the policies and programs reflected in the President's budget. There is a great need for the Congress to have the manpower, equipped with the most modern computerized methodology, to fully examine and evaluate appropriation measures with regard to the needs of the Nation.

## An Old Lady Gets a New Dress

*Since the turn of the 19th century Government auditors have been required to settle the accounts of accountable officers. The author describes his experiences in performing such an audit under the approach prescribed by the Comptroller General in 1969 to test the adequacy of agency internal control systems as the basis for settling accounts of accountable officers.*

"I would like you to prepare an audit program for settlement of accounts of accountable officers and then monitor the subsequent review," my supervisor stated in February 1969. At first I was not overly pleased at the assignment since settlement reviews were treated by many GAO supervisors as necessary evils at best. I quickly found, however, that a very challenging and interesting assignment faced me. Before telling you my experiences on the assignment, I will give some background information about settlement reviews.

### Background

Determining the amount due the Government from the person held responsible for the receipt, disbursement, retention, or approval of the expenditure of public funds—i.e., settlement of

accountable officers' accounts—was made a duty of the Treasury Department by various acts beginning about the turn of the 19th century. With the passage of the Budget and Accounting Act, on June 10, 1921, however, this responsibility was transferred to the General Accounting Office. The act of May 19, 1947, still in effect, specified that accounts, generally, must be settled by GAO within 3 years from the date of the receipt of the account with three very important qualifications:

- The 3-year period is suspended during any war in which the United States is engaged.
- After an account has been settled, that settlement is final and conclusive upon GAO after the expiration of the 3-year period except as to moneys which have been or may be lost through fraud or criminal-

---

Mr. Grant is a supervisory auditor in the Civil Division currently assigned to the Interior audit site. He joined GAO in February 1962 after graduation from Duquesne University and holds a CPA certificate from the State of Virginia.

---

ity on the part of the accountable officer.

—Amounts found due within the 3-year period may be recovered after the 3-year period has expired.

During fiscal years 1967-69, 31 reports on Corps of Engineers (Civil Functions) settlement reviews were sent to agency officials. The amount of time spent on a number of these reviews was disproportionate to the significance of the findings in the reports. (An unknown but important factor, of course, is the deterrent value of our settlement audits.)

In the settlement area, our policy has been to base our review work and related tests to the extent possible on an evaluation of the internal controls at each location on a cycle basis. On August 1, 1969, the Comptroller General sent a letter to the Heads of Federal Departments and Agencies in which he informed them that:

In recognition that the basic responsibility for proper accounting and internal control is that of each agency, the GAO audit of accountable officers' functions will place its major emphasis on the adequacy and effectiveness of the accounting and internal controls, including internal audit, of the departments and agencies in assuring that the accountable officers' functions are discharged correctly and in accordance with the requirements of all applicable laws and regulations.

Thus, our audit approach in the review just completed was to determine whether the agency's overall system of accounting and internal controls was proper. If so, we then could review the adequacy of the system of receipts and disbursements and study the system in operation, including a test check of transactions, at a limited number of locations since it would be duplicative

to do such a review at all locations of the agency concerned.

### Audit Program

While my first thought was that GAO had not prepared audit programs for settlement reviews, I was mistaken. In fact, the Washington Regional Office had prepared a program for use in settlement reviews at Federal agencies in general. Therefore, with their knowledge, I was able to use their general program as a guide in writing our specific one.

Other helps in compiling our program were various accounting texts. Since the proposed settlement review was to be a review of the system of internal controls over receipt and expenditure transactions, we decided to include an internal control questionnaire in our program. Therefore, we reviewed the advice contained in various accounting and auditing texts.

Two problems immediately arose: (1) the internal controls mentioned in the texts were for private business operations and did not necessarily apply to Government operations and (2) in many instances the texts indicated that a client should have a certain internal control procedure but failed to state why. This second problem was especially troublesome and challenging because, as accountants, we tend to accept certain internal controls as good without questioning the reason why the controls are good.

To illustrate, one of the questions we thought appropriate for inclusion in the internal control questionnaire in our audit program was: Are creditors' statements checked by the accounting department to open accounts payable?

The first impression is that they should be checked to increase internal control. If all vouchers for payment must be properly supported with original documents, however, what additional control does the checking to open accounts payable provide? Would such a checking procedure really add something other than additional time and expense? Our Regional Office eventually decided that the other controls in the system prevented duplicative or unnecessary payments to vendors and the cited internal control procedure was nice in theory but unneeded in the instant case.

### **Evaluation of the Corps' System of Internal Controls**

Our review was conducted using the audit program described above in the Kansas City District, Missouri River Division; the Tulsa District, Southwestern Division; and the St. Louis District, Lower Mississippi Valley Division. The Kansas City District was selected because in addition to paying travel, procurement, and other expenses as do other district offices, it also functions as one of the two Central Payroll Offices (CPO) for most Corps personnel. Tulsa and St. Louis were selected because they were within the GAO Kansas City Region and were serviced by the Kansas City CPO.

On October 14, 1970, we reported to the Chief of Engineers that we found the Corps system of administrative procedures and internal controls over accountable officers' functions to be generally satisfactory. (While in the case of the Corps we directed our report to the agency, other agencies' systems may not contain generally satisfactory con-

trols and a report to the Congress may be justified.) We noted in the report, however, that there was a need for:

- Further separation of duties in the Finance and Accounting Branch.
- Separation of purchasing and receiving duties.
- Written notification to be given to the Finance and Accounting Branch when purchases are returned to and adjustments are received from vendors after the receiving report is sent to the Branch.

The Acting Chief of Engineers in a reply dated November 12, 1970, stated in essence that corrective action would be taken on all matters reported. In addition, the Corps expressed its appreciation for our assistance in improving their system of administrative procedures and controls.

### **Comparison of Results**

Some of the advantages of the new procedure as shown below are (1) the attainment of an overall evaluation of the system of internal controls in an agency rather than just an evaluation of controls at a number of individual locations and (2) a reduction in man-day requirements and travel expenditures.

*An overall evaluation of the system*—If implemented properly, the newly authorized approach insures a systematic review of the agencywide system of internal controls over receipt and expenditure transactions. The tendency in the past was to review individual transactions at the location or locations under review. Thus, of the 31 Corps settlement reports issued dur-

ing fiscal years 1967-69, none contained specific comments on the Corps-wide system of internal controls.

*A reduction in man-day requirements and travel expenditures*—We spent a total of 430 man-days in conducting the current review. This was significantly less than the 2,831 man-days spent on Corps settlement reviews during fiscal years 1967-69 although the end result—the clearing of all Corps District and Division accountable officer accounts for a 3-year period—was the same.

In regard to travel expenditures, there should also be a reduction in total expenses over a 3-year period. Total travel expenditures on the present review were \$914 of which \$735 was spent for travel of regional office personnel and \$179 was spent for travel of Civil Division personnel. The total travel cost for the period 1967-69 inclusive was \$19,617.

The present review was performed primarily in Kansas City, the same city in which our Regional Office is located.

The travel expenditures were incurred by the Regional Office in trips of short duration to Tulsa and St. Louis.

In the Corps only 11 of 37 locations at which GAO makes settlement audits are in the same city as a GAO Regional Office location. For reviews performed at the other 26 locations there will be daily travel costs. Thus, in future reviews, the regional travel costs will in most instances be higher than such costs on the present review. Even so, however, travel costs will be less than on past reviews because now we perform our review at a limited number of locations whereas previously we performed our review at about 37 locations over a 3-year period.

\* \* \* \* \*

At the Corps audit site we found that the new procedure was advantageous and that it resulted in an efficient method of settlement. Also, it was a challenging and interesting assignment. I hope that your experiences in upcoming settlement reviews are similar to mine.

## Auditape to the Rescue

721513

*The Fall 1970 issue of the Review included two articles relating experiences with the use of Auditape in the GAO review of supply management at naval shipyards. A member of the Seattle Region's audit team presents the background that led to the decision to use Auditape and computers in this examination and discusses the benefits achieved from the use of these audit tools.*

In October 1969, the Seattle Regional Office, as lead region, began a review of supply management at naval shipyards. Within a matter of days, we were overwhelmed by the gigantic dimensions of our assignment. The four shipyards selected for review—Puget Sound, Philadelphia, Pearl Harbor, and Mare Island—maintained approximately 261,000 individual inventory records representing an inventory valued at about \$60 million. The most perplexing problem facing us was how these records could be manipulated so we could take statistically sound samples of the inventory items and project our results into convincing audit findings.

We knew that several regional offices in GAO had used the Haskins & Sells Auditape to solve similar problems, but we lacked personal experience in using it. Nevertheless, we accepted the risks

involved in our lack of familiarity. We obtained the Auditape package, consisting of the taped computer programs, instruction manual, and specification sheets, from our headquarters Office of Policy and Special Studies; learned how to use it (not without some occasional problems); and provided for its successful use at all four locations where a number of significant findings were produced. An unexpected result of using Auditape was the degree of acceptance of our findings by agency personnel that might not have occurred if we had selected and processed our samples manually.

### **Gradual Awareness of the Problem**

Our adventure into computerland on this assignment began in July 1969 with the arrival of a work assignment from

---

Mr. Gardner is a supervisory auditor on the Seattle Regional Office staff. He has been with the General Accounting Office since 1968. He holds B.A. and M.B.A. degrees from the University of Washington.

---

our headquarters Defense Division authorizing us to review the management of the shipyards' Direct Material Inventory (DMI) account and the related activities of the nearby Naval Supply Centers. We had surveyed this area at Puget Sound Naval Shipyard near Seattle in early 1969. Based on our observations at that time, it appeared that material valued at millions of dollars was being ordered and delivered as much as 1 year in advance of issuance to work-in-process for ship construction, repair, or overhaul. As a result, excess inventories accumulated because of changes in work scope and overprocurement.

Our initial assignment was to firm up the findings at Puget Sound, confirm them at other selected locations, define the causes, and formulate recommendations aimed at reducing the inventory levels. At this point, no thought was given to the possibility of using computers in any way to manipulate the shipyard DMI records in developing our findings. The potential use of computers on the review was not considered until after the responsible Washington operating group expanded the scope of the review to include Shop Stores Inventory and supply system responsiveness as well as DMI. The Seattle Regional Office was also given the responsibility for developing the audit program to cover the entire review and coordinate it with the participating regional offices.

Since our previous work had been limited to the DMI account, we started additional work in the area of shop stores material accounts and supply system responsiveness prior to developing the audit program. During this

2 to 3 week period, it became evident that the work needed to substantiate any findings developed in these areas would be difficult and time consuming to carry out using manual sampling techniques. As an example, our survey work in the shop stores area illustrates the magnitude of the problems encountered which led us to consider the use of Auditape in this review.

Our first meeting with the Material Supervisor and the Chief of the Inventory Control Section in the Supply Department at Puget Sound brought out the following inventory information.

- All inventory records were maintained on punched cards and were filed by stock number and shop store number in file tubs.
- Inventory items were classified as standard and nonstandard stock, each classification carrying an identifying stock number.
- Shop store items were further subcategorized as regular issue, insurance, and preexpended (charged to overhead and issued with no direct charge to the user).
- There were over 80,000 punched cards, two cards for each item, filed in two separate file tubs and each containing information needed for our review.

From 10 to 12 inventory clerks worked with the punched card files at all times, filing updated cards, preparing requisitions, consulting with shop stores personnel, and offsetting cards having receipts, withdrawals, or any other informational change. Each night all cards that had been offset during the day were pulled from the files and sent to the data processing center for up-

dating. The new cards were returned the following morning for filing and the old cards were destroyed.

We found that while each file tub contained all the card records for items carried in one shop store (there were a total of 27 shop stores) there was no separation by subcategory of items within the shop. Filing was by stock number only, regardless of the category the item was in. Since each of these categories had special characteristics which would have to be considered in any analysis of supply management, it was important that we devise some method to separate the shop store items into the various categories.

Similar situations existed in the areas of supply responsiveness and DMI. While each area had its own characteristics which required identification and analysis, the common problem was to find a method for extracting the information needed from the mass of recorded data in the most efficient and economical manner possible.

Once we had determined the magnitude of the problem at Puget Sound, our next concern was with the situation we could expect to find at the other three shipyards included in the review. During our short survey of shop store inventory records, we had met with the Puget Sound data processing personnel. They had informed us that to their knowledge Puget Sound was the only shipyard still using punched cards for inventory files, and that the other shipyards were using magnetic tape for recordkeeping. The inventory accounts were the same in all shipyards, but information on data storage and retrieval systems was not available for the other locations.

### **Staff's Prior Exposure to Auditape**

Once we had tentatively determined the scope of our work and the requirements for a workable audit program that would give us the information we wanted, our next step was to find the best way to handle the problems involved. The audit team had had a minimum of exposure to the use of the computer in performing audit work although we were aware it had been used successfully on other GAO reviews. One member had previously been exposed to the potential of the Auditape, particularly in the field of inventory management, and based on the situation in the shipyard as he saw it, suggested the possibility of using the Auditape on this review. The two other team members and our regional specialist in the computer field agreed that the Auditape would be a useful and practical means of manipulating shipyard inventory data, whether it was kept on tape or on a punched card, to get the information we needed.

### **Auditape as a Solution**

The Auditape system is a set of generalized computer programs that can effectively utilize the computer for audit personnel who are not data processing specialists. No knowledge of how to actually operate the computer itself is necessary as sufficient instructions are included in the Auditape manual so that any computer operator can run the tapes on the machine.

The basic requirements for the auditor are a knowledge of the format of the agency records, the Auditape in-

struction manual, a set of specification sheets to fill out for each program, and a keypunch machine for putting the information from the specification sheets onto punched cards that can be read by the computer. These programs, or routines, are used to extract various bits of data from agency records through the edit routine and put them in a format on a work tape that is then used as the input for a number of additional routines. Among these routines are those that perform arithmetic calculations, special analyses, and statistical sampling. For example, by preparing a few specification sheets and having them keypunched, an auditor with no computer knowledge can utilize the computer to add material due-in to quantity on hand, subtract the authorized quantity to be held, multiply the result by the unit price, and print out the amount of excess, if any.

The special analyses routines made it possible to electronically segregate all the different categories and subcategories of inventory items contained in the records and operate on each set as a separate inventory account, thus solving one of our most perplexing problems.

After we agreed in the Seattle Region that the use of the Auditape appeared to be a satisfactory way to solve some of the problems encountered in attempting to manually manipulate the shipyard records, we wrote the audit program to guide ourselves and the assist regions. Based on our experience at Puget Sound and on the limited information we had about the other shipyards, we incorporated the suggested use of the Auditape wherever possible. As we outlined the information we wanted from each participating audit team,

we suggested detailed steps to follow that were largely based on what we felt could be accomplished in a relatively short time by using Auditape and a computer.

A prejob conference was held with all participating regions and the Washington operating group. At this meeting, the audit program was discussed and one of our team members presented our case for incorporating the use of the computer and the Auditape in it. Some of the representatives present were apprehensive about using the Auditape, primarily due to lack of experience. However, all agreed to give it the old college try. All regional representatives were assured that help would be forthcoming if they got into difficulty using the Auditape. No attempt was made at this meeting to specifically delineate where the Auditape was to be used. It was only pointed out what the Auditape could do and the areas where our experience had demonstrated its value.

### **Putting Auditape To Work**

After the audit program was accepted, we armed ourselves with the Auditape and tackled one of our major objectives: determination of the excess material the shipyard had on hand.

The approach we took was rather straightforward. We wanted each inventory account segregated, as well as the segregation of all subcategories within the accounts that had special characteristics requiring a separate analysis. For example, the dollar value of insurance items carried in the inventory account at Puget Sound appeared to be excessive in relation to total shop stores inventory. For us to ade-

quately analyze the items in the insurance items category, we had to isolate them from other items in the shop stores records.

Once the Auditape's editing routine had made these segregations for us, we could use the Auditape's other routines for summarizing, doing arithmetic computations, sampling to manipulate the data in each account or subaccount, and printing out a sample list of items for further analysis and projection. If necessary, we could use the computer to age the accounts by length of time held in inventory, compare one list of items with a second list for duplications, and scan large inventory listings for items showing predetermined characteristics, such as low unit cost, non-standard stock numbers, quality control requirements, etc.

Although the same general approach was followed at each of the shipyards, the operating conditions and record storage at each shipyard varied to some degree. The Pearl Harbor and Mare Island Naval Shipyards maintained updated master inventory records on magnetic tape. These tapes included all the inventory records for the three inventory accounts, simplifying the work of the audit team since all necessary records were in one place. In addition, both shipyards printed a quarterly excess listing report showing the amount of material the shipyard considered to be excess. Consequently, much of the work that we had to do at Puget Sound was already done at these two shipyards. Both audit teams also had relatively free access to computers that had sufficient capacity to accommodate Auditape requirements.

## Problems Encountered

The Seattle and Philadelphia Regions had problems that complicated to some extent the use of the Auditape. As indicated previously, the Puget Sound Shipyard had all inventory records on punched cards which were continually being updated. The Auditape accepts punched cards as input as well as magnetic tape. However, the shipyard computer had a memory unit too small to accommodate the Auditape requirements, so we were unable to use its computer facilities. The nearest available computer with all the required capabilities was at Portland, Oreg., but it was out of the question to transport the thousands of inventory records to Portland to serve as input on the computer there. In a meeting with the shipyard data processing personnel, we convinced them of the desirability, both to them and us, of using the Auditape and they agreed to put all the inventory card records for the shop stores accounts on magnetic tape which we could then take to Portland and use with the Auditape.

Once this was done, we applied the Auditape edit routine to the shipyard record, extracted the desired information, and put it on our own worktape for further manipulation and analysis. The shipyard spent 2 hours putting the records on tape for us, but they did it at night so that it did not disrupt the work of the inventory control section personnel at all. This procedure not only eliminated a great deal of interference by our staff in the normal work pattern of the shipyard inventory clerks, but it provided us an inventory record cutoff date which would have been very

difficult to get if we had tried to sample the records on a manual basis.

Later in our review we found it necessary to go back to our original worktape of records for additional information on selected areas of the inventory accounts. With the Auditape we were able to quickly obtain the information we needed without disrupting the work of the shipyard staff. Based on our sample results, certain areas of shipyard operations appeared to be the focal point for large amounts of excess material. The Auditape allowed us to isolate these areas in their entirety for further analysis, rather than having to rely strictly on a sample of these items.

The Philadelphia Region had the biggest problem to contend with in applying the Auditape to shipyard records.<sup>1</sup> In September 1969, the shipyard at Philadelphia converted its inventory records to conform to the Navy's Management Information System. This system uses the UNIVAC III computer, and unfortunately the UNIVAC tape record was not compatible with Auditape.

The UNIVAC tape must be converted to an IBM format which can then serve as input for Auditape application. The audit team at Philadelphia could find no Government activity in the area with this conversion capability. After an unsuccessful attempt by UNIVAC to convert the tape, one of the programmers from our Office of Policy and Special Studies was called in and through his efforts, combined with shipyard and UNIVAC cooperation, finally achieved a successful conversion of the inventory

tapes so the Auditape programs could be used.

### The Payoff

As the result of our review of the inventory accounts at the four shipyards, we were not only able to point out the amount of excess material carried by the shipyards, but, in several specific instances, we were able to pinpoint where the excess was being held. At Honolulu, the shipyard printed out a quarterly excess listing report so that it was aware that excess inventories were being carried. The Honolulu audit team's analysis of this excess listing showed that out of the thousands of line items carried in the various shops, 90 percent of the dollar value was concentrated in 745 items physically located in two of the 12 shops. *This information was not known to shipyard management prior to our review.* At Puget Sound, we were able to show that 91 percent of the insurance items were held in three shops. Therefore, our analysis of this account was confined to these areas, resulting in considerable time savings.

While most of our analysis of the inventory accounts was done on a sample basis, the use of the computer enabled the audit teams to review the total number of records in certain areas and to make comparisons on a scale impossible to achieve by manual methods. The San Francisco audit team analyzed all issues from shop stores for 1 month (23,000) to test shipyard compliance with Navy requirements concerning low-value (under \$2.00) issues. At Pearl Harbor, the audit team wanted to determine whether items

---

<sup>1</sup> See *GAO Review*, Fall 1970, pp. 48-54.

carried in the insurance category were available in other inventory accounts or were shelf items in the nearby naval supply center. A 50-item sample of insurance items was compared with over 20,000 standard issue line items and any duplications were printed out for further analysis. The over 1,000,000 comparisons were made in approximately 13 minutes of computer running time.

These examples are only a few of the Auditape applications made to shipyard records, but they point out the analysis of records that is possible when the speed and efficiency of the computer are utilized.

The difficulties experienced at Philadelphia in using the Auditape had some beneficial results. The Auditape applications, particularly in the sampling area, were closely examined by shipyard statisticians, and the results of some of the samples taken and the evaluations made were discussed with them. Consequently, when the results of the review made at Philadelphia were presented to and questioned by shipyard officials, our GAO team had the unique experience of having the shipyard statisticians assure the officials that GAO's findings were based on acceptable statistical sampling techniques.

Our review disclosed convincing evidence that the Navy could and should reduce excess inventories, and the findings have been included in a report being issued to the Congress.

### **Advantages and Disadvantages of Auditape**

Based on our experience with using the Auditape on this review, several distinct advantages were noted.

1. *The auditor's interruption of the normal work routine in the shipyards' inventory sections was drastically reduced.* Without the Auditape, manual sampling would have been required, and one or more auditors would have spent days trying to sort through the file tubs at the same time the inventory clerks were working with the records, keeping them current. Once we had the records on tape, our need to use the card information was minimal since we could print out any portion of the records we needed.

2. The Auditape allowed us to do a *much more extensive analysis* of the inventory accounts and *produced more reliable information* than would have come from manual sampling. With the computer's speed and accuracy, we were able to perform a number of mathematical computations and comparisons which would have been beyond manual capabilities. To take monetary samples, we needed the dollar value of each inventory item. Multiplying the unit price times quantity on hand for the thousands of items carried in the records would have taken a number of man-days. Using the computer, about 2,000 of these computations were made every minute.

3. *Significant savings in audit time* were also evident, even considering the extended depth of our analysis. The printouts of sample items and evaluations were used as workpapers, saving many hours of scheduling time. Thousands of items were quickly screened for special characteristics, and certain categories of items were isolated and their location pinpointed, thus eliminating unnecessary work being done in unproductive areas.



*The Seattle audit team awaits a computer printout. From the left: Clifford Gardner, Leu Smith, Dale Wolden, and Dennis Baker.*

4. *More comparable results from participating regions were obtained.* We were generally aware of the kinds of information available at each shipyard, but we were not sure of how it was maintained. With the Auditape, it didn't make any difference and we could specify certain steps in the audit program with the assurance that the other regions could easily get us the information desired. The large number of records maintained at the shipyards necessitated the use of sampling techniques. Although each audit team could have selected its own samples, the Auditape sampling routine gave us a common procedure that assured impartial selection. By consistently using the same confidence and precision levels, there was no questioning our ability to combine the results from the four shipyards and use them in our consolidated report.

The disadvantages of the Auditape were minor. A number of reruns were required to get the desired information in final form, but the speed of the computer tended to counteract this requirement to some degree. For certain records, additional columns in the Auditape format would have been useful, but usually the 12 columns were sufficient.

### Conclusion

The extended use of the Auditape on this review demonstrated to us that its *sampling capability is but one facet* of a very useful device for improving our audit performance. The increased depth of our analysis, the acceptability of our projections, and the comparability of our results were all made possible through the use of this easy-to-use audit tool. The Auditape enabled us not only to develop audit findings, but was

also beneficial in helping us determine areas of shipyard operations that warranted little or no further work.

For audit teams with no prior experience in computer applications, the use of Auditape, or any of the other generalized computer programs, requires a certain amount of learning time. Our experience has been that the advantages

available from these programs far outweigh the disadvantages due to lack of experience. We found that each of the regions participating in this review had at least one individual knowledgeable in the computer area. In addition, the Washington staff in the Office of Policy and Special Studies was very willing to provide any assistance required.

# Application of Marketing Concepts to the Analysis of a Government Program or Agency

*Four marketing concepts are involved when analyzing the management of a Government program. Only one of these—failure to produce or distribute needed services—has historically been emphasized by the GAO auditor. Yet, from a marketing point of view, the underlying causes for varying degrees of program ineffectiveness can be found in three other areas: defined need does not exist, unrealistic allocation of resources, or an improperly defined target market.*

## Introduction

As the complexities of Government-wide decisionmaking have increased, so has the need for valid information upon which new decisions can be based and past decisions reviewed. These complexities created a need for the General Accounting Office to analyze where it has been going and where the needs of the Government will take it. The result of such an introspection ideally has been to realize that economy in the Government is a relative term and is dependent upon how effectively Government-sponsored programs meet the objectives they set out to achieve. The changing needs of the Government have increased GAO's need to identify and

offer solutions to problems which affect an agency's ability to achieve its intended objectives. In connection with this changing role, this article attempts to show how problem identification techniques used in the field of marketing can prove helpful in identifying problems contributing to an agency's lack of effectiveness.

## Assumptions

—The legislative, executive, and judicial branches of the U.S. Government form a holding company which makes decisions to enter or exit a certain market with its products whenever such a move seems to be for the "good of the

---

Mr. Cox is a management auditor in the Portland Suboffice of the Seattle Region. He holds B.S. and M.B.A. degrees from the University of Oregon and is a member of the American Marketing Association. Mr. Cox has been with GAO since January 1969.

---

nation." It produces these products in one or more of its manufacturing plants (agencies). Although this holding company has many manufacturing plants at its disposal, it periodically finds it necessary to establish a new one. One unique characteristic of this holding company is that it seldom finds it expedient to dispose of any of its means of production. Given the dynamic nature of the environment in which it operates, this characteristic becomes even more unique. We will call this holding company the Great Trust.

—A product is that service which an agency provides.

—A target market is that group of people who are the prime consumers of a product.

—There are two basic types of needs:

1. Those which when satisfied the first time disappear.
2. Those which are recurring and must continually be satisfied.

Which type any specific need is depends largely upon definition. Very few of type 1 are found in the Great Trust's long-range plans. Some have existed in the short run but tend to be redefined to a type 2 by the individual agencies.

### **Factors of a Marketing System**

Before the production of any product can be justified, a need must be determined to exist for that product. Once this need is determined to exist and is properly defined, it must periodically be redefined because needs are not stagnant factors. A major function of the Great Trust is defining those social needs which will officially exist in the public eye.

In an attempt to satisfy these social needs, the Great Trust appoints existing agencies or establishes new agencies to produce need-satisfying services. Ideally, the agency's size is directly related to the complexity involved in producing need-satisfying services and to the size of the target market for those services. Its size should vary only in proportion to changes in the target market and complexity of production.

The key to satisfying a properly identified need is proper definition of its target market. (Who possesses the need?) To effectively establish the correct target market, extensive research of potential consumers must be made to determine the market's characteristics and its parameters. Without this knowledge prior to production, not only is an improperly constructed product developed, it is incorrectly marketed. This is a not uncommon failure of the Great Trust, which has a tendency to develop general products in order to be sure the people with the need get helped. Much is wasted in such an approach because either more people than originally intended use the service or too much service is produced and no one uses it. The reason the welfare system is now under attack may be explained as a lack of understanding of the characteristics which make up a person in need of public assistance. Such an approach can be compared to a hunter who does not really know what type of game he is after. He buys a shotgun hoping that whatever presents itself can be handled. He encounters a bear on the first day and can do no more than make it angry by scaring it with all the noise. On the second day out he en-

counters a sparrow and after firing cannot find the carcass.

We have been speaking, in general terms, of the factors which make up a marketing system. More concisely, these are identification of a need; definition of the group most strongly possessing this need (target market); production of a need-satisfying product; and distribution of this product to the target market in an effective, efficient, and economical manner.

If we view the Great Trust's operations as a system, the needs it identifies should be effectively met by the activities of its various agencies. If this is not being done, some portion of the system is malfunctioning. This malfunctioning can arise from one or more of four problem areas:

1. The need as it is defined does not exist (the definition may require updating or it is a type I need as set forth in the assumptions). Therefore, the whole system may have no reason for existing in its present form. "No defined need" is not an uncommon problem. For example, the Post Office Department did not properly define a need when it initiated a midday mail Accelerated Business Collection and Delivery (ABCD) service only to realize after an expensive *faux pas* that business would not mail in midday.
2. The target market's size has not been well defined in relation to existing funds. For example, the definition of the target market may be too encompassing to be satisfactorily reached using the resources the Great Trust has allotted for this purpose. This might exist when 100 dollars are needed to produce a service to satiate the target market's needs. There are 100 persons in the target market as it is identified, but only 50 dollars were allotted by the Great Trust. If the agency in question is attempting to spread the 50 dollars to the 100 persons, we get the effect of shooting at the bear with the shotgun. The proposed recipients only get angry because they require (and have been led to believe they deserve) more than exists to satisfy them. Many of today's social programs fit into this category.
3. The target market has not been well defined or concisely stated in terms of who actually possesses the need. An example of this can be found in the low-rent housing program which tends to reach the marginal poor rather than the poor poor. This is also the case with the Department of Commerce's commercial exhibition's program which attempts to increase U.S. exports. The focal points for its efforts have been established exporters and the developed countries of the world. The program could be more effective, however, if it concentrated on inexperienced exporters and the developing markets.
4. The agency management involved is failing to produce the correct need-satisfying products or is not distributing what it does produce in a manner to reach the target market effectively, efficiently, or economically.

The activities of the Federal Highway Administration (FHWA) possibly illustrate this problem area. For example, if a goal of the FHWA is to reduce accidents caused by relatively unsafe highways, it has not been successful. It has not produced a system of hazard-free highways and thus the need remains unsatisfied. While many of the newly constructed highways are relatively hazard free, many older roads still contain driving hazards. FHWA has the ability to produce less hazardous roads but it has failed to distribute this ability to the target market of its services—the people who drive on hazardous roads. This is possibly due to the agency being more concerned with producing additional highways than with reducing hazards on all highways.

Failure in this problem area sometimes is not solely the fault of the agency or agencies involved. The problem may be in the Great Trust's stated approach to be used in reaching the target market. The "Trust," in its zeal to write legislation, sometimes composes plans of action in a manner which, when followed, result in agency-produced services missing the intended target market.

Such is the case with the guiding legislation for providing low-rent public housing. The United States Housing Act of 1937 provides that low-rent housing shall be available solely for families of low income. The act describes "families of low income" as "families who

are in the lowest income group and cannot afford to pay enough to cause private enterprise in their locality or metropolitan area to build an adequate supply of decent, safe, and sanitary dwellings for their use." The law does not specifically state which families are in the lowest income group. The 1959 amendments to the Housing Act of 1937 state, however, "Income limits for occupancy and rentals shall be fixed by the public housing agency and approved by the Authority (HUD) after taking into consideration (a) the family size, composition, age, physical handicaps, and other factors which might affect rent-paying ability of the family, and (b) the economic factors which affect the financial stability and solvency of the project." Section (b) of the amendments seems to negate any attempts to reach the poorest of the poor, in that stability of the housing project forces the local housing authority to place the marginal or wealthy poor first because they can pay a higher percent of their own rent.

If GAO used this four-step problem identification approach in addition to its present auditing techniques, problem areas heretofore passed over might be identified. For example, in problem area 1. "defined need does not exist," when we are conducting an effectiveness review of an agency, we must analyze the objective the agency is attempting to achieve. If the character of that objective has changed, it is pos-

sible the agency is "hunting for an extinct animal."

Problem areas 2 and 3, "unrealistic allocation of resources" and "improperly defined target market," are both to be found in the planning stage of a program's development. In problem area 2 the agency should plan its activities so that it can significantly satisfy the needs of people in the target market, because a partially satisfied need remains an unsatisfied need. When restricted by funds, the target market should be divided into smaller groups whose needs can be significantly reduced with available funds. This would require establishing a priority system to determine the order in which the groups should receive assistance. In problem area 3, before any action is taken, the agency must attempt to determine the exact characteristics of the possessors of the need identified by the Great Trust.

Problem area number 4, "failure to produce or distribute needed services." has historically been the domain of the GAO auditor because this is where efficiency and economy can be determined. This is also where the few effectiveness reviews done by GAO have been centered. However, from the marketing system point of view, problem areas 1, 2, and 3 are where basic causes of ineffectiveness in Great Trust programs can be found.

The following section sets forth an approach which may provide some insights for applying marketing theories to the audits done by GAO. As this section pointed out, marketing theories lend themselves primarily to effectiveness audits.

### Use of Marketing Techniques To Audit Federal Agencies

Any public need is held by a *specific social group* which is located in a *specific geographical area* during a *specific time period* and living under specifically understood *social and environmental conditions*. The size of this public need can be represented by the total amount of resources required to produce services which will satiate it. These services we will call *need-satisfying services*.

As is indicated by the previous paragraph, it is necessary to do considerable research to accurately estimate any public need. Under our system of Government it is only after this need is felt to have reached a size large enough to prompt Great Trust intervention in its reduction that public resources are allocated to it. This critical size is defined by the Great Trust. A basic problem facing the "Trust," and therefore the agencies providing the services it has requested, is the lack of research conducted prior to allocating need-satisfying resources. The Great Trust and its service-producing agencies often do not know exactly what the public need is because they do not know the characteristics of the social group possessing this need, the location of the group, the social and environmental conditions confronting the group, or the time period during which this need will exist. Because of this, many decisions made by the Great Trust and its agencies are subject to being based on reactions to unsubstantiated information which may significantly overstate or understate needs.

### Analyzing a Program

The following elements go into defining who possesses the need for the services produced by the Great Trust. They will be recognized as those presented in this section's introductory paragraph. They are presented in a manner to show some of the thinking an analyst must go through when looking at each element and its relationship to the need-satisfying service offered by the "Trust." It should be noted that assumptions about the elements of a public need made at the time a program is established are the basis for many of the decisions which go into creating the new program. It is therefore important for anyone trying to analyze the effectiveness of a Great Trust program to determine these assumptions. The program's ineffectiveness may be caused by the fact that an assumption about one of the elements was incorrect or short lived. In some cases assumptions made during the course of a program's operation can be the cause for that program's inability to meet its goals. The analyst should be on the lookout for these also. The elements are:

*Need-Satisfying Service:* The agency appointed to reduce a need identified by the Great Trust must thoroughly understand the characteristics of that need. If the need is for housing, it must be known (1) what the potential inhabitants of that housing require for shelter and (2) what class of shelter is needed; i.e., deluxe or bare necessity. If the Great Trust identifies a need for a postal service, research must be conducted to determine the type of postal service which will most effectively satisfy that need.

*Social Group:* How large is the group of people possessing the need? Is there more than one distinct group involved? What are the demographic characteristics of the group? These characteristics must be distinctly defined.

*Location:* Is the need for these services limited to a specific geographic area? Demand for a need-satisfying service should be analyzed with reference to well-defined geographical boundaries. For instance, the amount of Indian housing needed in the next year will naturally vary depending upon whether the boundaries are limited to reservations in the State of Washington or include all reservations west of the Mississippi.

*Social and Environmental Conditions:* The ability to satisfy any need is affected by many uncontrollable factors, such as nature, technological breakthroughs, economic reversals, changes in social values, and new legislation. A generally stated, inflexible set of program operating standards may be the cause of that program's lack of effectiveness. For example, because of great climatic differences, a furnace designed to heat a house on a New Mexico Indian reservation should not be placed in a house on a Montana reservation and be expected to perform satisfactorily. In this case the construction standards for low-rent housing on reservations should reflect the climatic differences. In order to most effectively satisfy needs, a program's structure must be flexible enough to incorporate technological advances and ecological requirements into its

operations. For example, the development of nuclear electric power has altered the United States' means and ability to satisfy needs for electricity. An organization like the Corps of Engineers must take these elements into consideration when it analyzes the need for more dams.

*Time:* Most needs, if broadly defined, are timeless, but the means of satisfying those needs are ever changing. Any development of a need-satisfying service must take into consideration its potential lifespan. For example, the need for electricity may always exist, but the need-satisfying service, hydroelectric production, has a definite lifespan.

This section's introductory statement was broken down by its five elements in order to elaborate on each. They are not, however, to be viewed as separate or independent. The statement, with the addition of a provision for feedback, describes a "system" or complete entity whose total effect is something more than the sum of the individual parts. This system can be of practical application in auditing agencies and their programs in that it gives the auditor a means of viewing that agency's or program's operation as a whole. It is up to the auditor to adapt it to his individual job and to use his personal knowledge in identifying the program's weaknesses. At best it can only be viewed as a means to identify problems.

### **Are the People Being Reached?**

In the preceding section a means of analyzing the elements which go into developing a Great Trust program was

set forth. But any analysis of a program's effectiveness will be incomplete unless we answer the basic question—"Are the people intended to be helped being reached?" There are various methods which can be used to estimate public need and the type of service required to satiate it. An analyst can use these methods on a test basis to see if a "Trust" program is actually meeting the goals it set out to achieve.

Basically, there are three information bases upon which an estimate of need or the development of a need-satisfying product can be established. Borrowing terms from Phillip Kotler's book, "Marketing Management," (p. 106) these three are: *what people say*, *what people do*, or *what people have done*.

*What people say* involves determining the opinions of those thought to possess a predefined need or of those understanding their plight, such as outside experts. In the case of social programs, for example, those outside experts would be sociologists, psychologists, etc. There are two methods we can use to determine these opinions: (1) contacting the need possessor and (2) composites of expert opinion.

*What people do* involves using a test market or markets to determine if the need exists and its intensity by recording people's reactions to various stimuli. This method is also used to determine the effectiveness of a need-satisfying service in reducing a predefined need.

*What people have done* involves mathematical and statistical analysis of past reactions by the social group involved, or a similar group, to certain stimuli and the projection of these reac-

tions into the future. The tools used in this method are usually classical time series analysis or statistical demand analysis.

\* \* \* \* \*

The Great Trust needs valid information on the results of its agencies' attempts to satisfy the needs it has identified as requiring public resources. If analysis of the "Trust's" activities is done in terms of the marketing problem

identification techniques presented in this paper, many of the previously unidentified causes of agency and program lack of effectiveness can be understood and corrected. The General Accounting Office should be in a position to conduct such analyses and report its findings to the Great Trust in order to insure that our Government really is of the people, by the people, and *for the people*.



*Members of the Cost Accounting Standards Board are sworn in. Administering the oath is Leo Herbert, Director, Office of Personnel Management (left). Members of the Board are, from the left: Herman W. Bevis, former Senior Partner, Price, Waterhouse & Co.; Dr. Robert K. Mautz, Professor, University of Illinois; Elmer B. Staats, Comptroller General (Chairman of the Board); Robert C. Moot, Assistant Secretary, Department of Defense; and Charles A. Duna, Manager, Government Accounting Controls, Raytheon Company.*

# Cost Accounting Standards Board Appointed

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 a representative of industry; and one is to be from a Federal department or agency.

On January 21, 1971, the Comptroller General, *Elmer B. Staats*, announced the following appointments as Board members:

From the accounting profession:

*Herman W. Bevis*, former Senior Partner of Price, Waterhouse & Co., New York City.

*Robert K. Mautz*, Weldon Powell Memorial Professor of Accountancy, University of Illinois, Urbana, Ill.

From industry:

*Charles A. Dana*, Manager of Government Accounting Controls, Raytheon Company.

From the Federal Government:

*Robert C. Moot*, Assistant Secretary (Comptroller), Department of Defense, and formerly Adminis-

trator, Small Business Administration.

The Board members were sworn into office on February 8 at a ceremony attended by Members of Congress, GAO officials, and representatives of executive branch agencies, industry associations, and other interested organizations.

The law establishing the Cost 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 directive establishing 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 responsibility for promulgating cost accounting standards designed for prime contractors and subcontractors to be used in the pricing, administration, and settlement of negotiated defense contracts in excess of \$100,000, except where the price negotiated is based on established catalog or market prices of commercial items sold in substantial quantities to

the general public or prices set by law or regulation.

In announcing the appointments to the Board, the Comptroller General said:

I am delighted to have associated with me on the Board individuals with such outstanding professional qualifications in the field of accounting and cost standards. I am also most pleased with the cooperation we have had from the Government agencies, the accounting profession, from industry groups and others in making nominations for the Board and in their offers of assistance and cooperation in carrying out the difficult assignment with which the Board will be faced. These expressions of cooperation and offers of assistance augur well for the future work of the Board.

On March 5, 1971, Mr. Staats, as 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 1967 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.



*Arthur Schoenhaut*

Mr. Schoenhaut received his B.B.A. degree from the City College of New York and is a graduate of the Advanced Management Program of the Harvard Business School. He is a CPA (Virginia), and a member of the American Institute of Certified Public Accountants, the Federal Government Accountants Association, and the National Association of Accountants.

# From GAO Speeches

*Elmer B. Staats, Comptroller General, speaking on "Public Affairs Challenges to Business in the 1970's" at the scholarship dinner, Florida Atlantic University, Ft. Lauderdale, Fla., February 27, 1971:*

*In our society, the responsibilities of Government for solving the Nation's problems have increased significantly in every decade since the "great depression." The massive growth in population and, hence, in public needs has been a dominant reason in recent years for continued Government expansion. But a larger part of Government's growth is the result of legislators' and voters' wanting a particular result but hoping to get the "other fellow" to pay for it.*

*Everything that Government does, of course, must eventually be paid for by the taxpayer who is the other fellow in most cases. Confusion arises because the accomplishment of most Government work is separated from the collection of money necessary to achieve it. As one writer said, "It should be easy for any government to please the people. All they want is lower taxes and larger appropriations." People want more money spent for schools, roads, pollution control, dams, police, and an infinity of other things; but then they grumble that they cannot understand why their tax bills rise every year. They have been learning in recent years as the fate of many State and local bond issues will attest.*

\* \* \* \* \*

*Unless the Federal budget is sufficiently understood—and this is very difficult due to its length and complexity—and its priorities questioned, the shaping and conduct of the Nation's business becomes the virtual prerogative not just of those in power but of those few in power who have the information and*

*understand it. For example, the budget does not indicate where choices among competing priorities have been made, nor does it identify the large number of feasible spending alternatives that might be justified. Senator Charles Percy of Illinois emphasized such inadequacies when he testified:*

*"Let me, again, repeat the obvious—we [the Congress] no longer have the capability to review rationally and analyze critically the national budget. It has gone beyond our present ability."*

*Senator Jacob Javits, who introduced the legislation concerning a Federal Office of Goals and Priorities Analysis, explains his reasoning in these words.*

*"Every time we enact a program or an appropriation, we are in effect making a priority decision, since we are decreasing the resources available for other programs. Yet, there are probably few Members of Congress who have available to them a clear and up-to-date picture of what has already been enacted or appropriated during that session of Congress, what remains on the agenda or is likely to come up for enactment or appropriation, or what constitutes the total amount of resources available to the Nation that year."*

*The question of how we can obtain more comprehensible information and, as a result, more public discussion on major budgetary programs should be of major concern to every business group, to every citizen organization, and, yes, to every university.*

*I have gone into this subject of the Federal budget at some length because it is the single most important way we have of determining national priorities. It can readily be seen that there are substantial grounds for the difficulties, experienced by businessmen in the past, of understanding the process of*

selecting priorities and that substantial changes and reforms are needed.

*E. H. Morse, Jr.*, director, Office of Policy and Special Studies, speaking on "Increasing the Visibility of the Government Accountant's Work" before the Dallas, Fort Worth, and Houston Chapters, Federal Government Accountants Association, February 16 and 18, 1971:

I think the professional accounting associations could do much more to promote wider public understanding of the accountant's job—what he does, how he functions, and what he accomplishes. We think we are pretty useful—but do others think the same way?

The professional associations \* \* \* could do more in the way of orienting and educating the public as well as policymakers and managers about the accounting function. Their journals could do a better job of describing and interpreting the nature and significance of accounting work. And here I am not referring to the kind of writing, so prevalent in some of these journals these days, that displays extensive arrays of mathematical formulations. This kind of writing, while useful, is also apparently aimed only at the mathematically trained.

The communication challenge for accountants is to write in the simple language of those who provide the money to finance operations whether these operations be private or public. How else can we communicate to probably our most important audience? Nor should we write only for our brother (or sister) accountants. We should also give some thought to writing for non-technical publications—a field left largely to reporters or reviewers who seldom have—or take—the time to really delve into what accountants do and where they fit into our society. We have much to do and much to say. We need some better ways to get it said.

*Oye V. Stovall*, director, Interna-

tional Division, speaking on "The U.S. General Accounting Office in the International Field" presented at the Thunderbird Graduate School of International Management, Phoenix, Arizona, November 2, 1970:

In this context I believe that sometimes the GAO role, particularly in the international field, can be most effective in identifying the fundamental questions, putting them into reasonable context with the underlying facts, and bringing them before the top people responsible—the department head or the chairman of a congressional committee—for their consideration and judgment. An unbiased presentation of the pertinent facts in this fashion may sometimes be of more real value than our opinions, even though we make every effort to assure that our opinions are well founded.

Meanwhile, since we can only report and recommend, we must somehow capture a busy reader's attention long enough to convey the essence of our message in a report. We are using a technique of condensed digests at the front of our reports which helps on this score. Also, we don't underestimate the value in some cases of a simple illustrative factual "horrible example" in engaging reader interest. We are striving, however, to not stop with the example, but to go back of it, find the underlying causes, and hopefully make constructive recommendations directed to correcting those underlying causes.

In this presentation I have dwelt at some length upon the purposes and problems of management reviews as GAO sees them. Before closing I would like briefly to discuss another element of the management process which we believe is very significant and too little recognized in Government programs—that is the need for clear program objectives against which to measure results.

In the field of international relationships, we recognize that normal definitions or concepts of management are not always acceptable. The industrial profits yardstick is not applicable. The concrete factors by which

GAO would normally try to measure and evaluate management results or plans may be obscured or some elements may be missing. Recognizing these unique circumstances, we nevertheless believe that U.S. Government activities in the international field offer great

opportunities for better application of management yardsticks—particularly in the field of developmental assistance.

We believe that program objectives need to be defined, and the results measured against those objectives.

### On Audit Effectiveness

“A mere audit of money is no protection whatever against misuse of money and of power; audit or field studies of results is needed.”

*Wm. H. Allen*, Director,  
Institute for Public Service.  
Writing on “The United States Comptroller General and His Opportunities,” in *National Municipal Review*, February 1923.

## Cross Florida Barge Canal

President Nixon directed on January 19, 1971, that further construction of this project be halted "to prevent potentially serious environmental damages."

Of the total estimated cost of this project of about \$180 million, about \$50 million has been spent. The object of the canal was to reduce transportation costs for barge shipping. In directing the stoppage, President Nixon stated:

. . . It was conceived and designed at a time when the focus of Federal concern in such matters was still almost completely on maximizing economic return. In calculating that return, the destruction of natural, ecological values was not counted as a cost, nor was a credit allowed for actions preserving the environment.

A natural treasure is involved in the case of the Barge Canal—the Oklawaha River—a uniquely beautiful, semitropical stream, one of a very few of its kind in the United States, which would be destroyed by construction of the Canal.

The Council on Environmental Quality has recommended to me that the project be halted, and I have accepted its advice. The Council has pointed out to me that the project could endanger the unique wildlife of the area and destroy this region of unusual and unique natural beauty.

The total cost of the project if it were completed would be about \$180 million. About \$50 million has already been committed to construction. I am asking the Secretary of the Army to work with the Council on Environmental Quality in developing recommendations for the future of the area.

The step I have taken today will prevent a past mistake from causing permanent damage. But more important, we must assure that in the future we take not only full but also

timely account of the environmental impact of such projects—so that instead of merely halting the damage, we prevent it.

An article in *Reader's Digest* for January 1970 about this project was noted in the Spring 1970 issue of the *Review*. Entitled "Rape on the Oklawaha" and written by James Nathan Miller, the article was quite critical of this Army Corps of Engineers project. One of his recommendations was that GAO audit all benefit-cost reports on projects recommended by the Corps.

## GAO Report on Water Pollution Cited

Continuing congressional attention is being given to the landmark GAO report on effectiveness of the construction grant program for abating, controlling, and preventing water pollution (B-166506, Nov. 3, 1969). During hearings before the Conservation and Natural Resources Subcommittee of the House Government Operations Committee in November 1970 on application of aerospace and defense industry technology to environmental problems, one witness referred to this report in support of his testimony. The witness, Congressman F. Bradford Morse of Massachusetts, a proponent of the greater use of systems techniques developed in the private sector in the solution of nondefense problems, placed the full digest of the report in the hearing record. In requesting permission of the subcommittee chairman, Henry S. Reuss of Wisconsin, to include this information, Mr. Morse stated:

In 1969, the General Accounting Office submitted a report to the Congress entitled "An Examination Into the Effectiveness of the Construction Grant Program for Abating, Controlling, and Preventing Water Pollution." Its conclusions were that due both to insufficient funding, and to inadequate planning and implementation on a comprehensive and coordinated scale, our efforts have not been as effective as they might or should be. I ask your permission to include in the record the digest of this report, and emphasize the GAO recommendation regarding the role that systems analysis techniques can and should play in planning for and implementing our water pollution control programs.

### **Improper Payments Under Federal Feed Grain Program**

The GAO report on "Objectives of the Feed Grain Program not Attained because of Inclusion of Nonagricultural Land" (B-114824) sent to the Congress on January 12, 1971, drew a quick reaction from one Member. As reported in the *Congressional Record* for January 22, Congressman Silvio O. Conte made the following comments about the improper payments reported by GAO for diversion of land from the growing of feed grains to approved conservation uses.

Mr. CONTE. Mr. Speaker, since 1962, a nudist colony has been receiving annual farm subsidy payments, although none of its land has been farmed.

In 1969, \$2,000 was paid to another program participant whose acres are within a private ordnance proving ground where "ordnance devices from small caliber ammunition to bomblets, grenades, and land mines" are tested.

In other cases subsidies have gone to garbage dumps, housing developments, and gravel pits.

These and other shocking items are contained in a recent report of the Comptroller

General as part of a study that, mind you, was limited only to the feed grain program as it has operated in a few counties in only six States. Even so, the GAO report found "questionable" payments of \$618,000 going to 938 participants in 1969. And a closer study convinced them that 215 recipients have unlawfully collected \$116,000 for not planting on land which has no conceivable agricultural purpose.

While the areas studies [sic] were not selected at random and may therefore not be typical, the report itself notes that similar mis-payments obviously must have occurred [sic] in other areas and programs as well.

Mr. Speaker, I want to point out that the Agriculture Department has readily agreed that such payments are improper, and in a response to a draft of this report has indicated some steps have already been taken to recover these funds and correct practices which have permitted this abuse.

Mr. Conte inserted the digest of the GAO report in the *Record* along with the Department of Agriculture's comments on the report draft and Mr. Conte's request to the Secretary of Agriculture for "a detailed report on both the extent of such abuses and the corrective measures which have and will be taken to prevent their re-occurrence."

### **Congressional Interest in GAO Audit Work**

The report of the activities of the House Committee on Armed Services during the 91st Congress (1969-1970) has this to say about its interest in GAO audit work:

Throughout each year, the subcommittee routinely maintains a continuing review of a wide variety of military problem areas, particularly those brought to its attention by the General Accounting Office. As of December 1, 1970, the subcommittee had received and examined 104 formal reports from GAO.

The subcommittee also keeps abreast of GAO reviews in progress through continuous contacts with their operating personnel.

### More on GAO Report on Pesticides Regulation

Extended hearings on migrant and seasonal farmworker powerlessness were held in 1969 and 1970 by the Subcommittee on Migratory Labor of the Senate Committee on Labor and Public Welfare. Several sessions were devoted to pesticides and the farmworker. The subcommittee was chaired by Senator Walter F. Mondale of Minnesota.

One witness, Jerome Gordon, president of Delphic Systems Research Corp., in testifying on pesticide poisoning dangers, called attention to Federal agency regulatory deficiencies reported by GAO in 1968. He stated:

I would like to read from a report that was prepared by U.S. General Accounting Office in the course of a review of the entire pesticide regulatory program and released last September and probably smothered in the back pages of the New York Times.

On September 10 the U.S. General Accounting Office issued a report on regulatory enforcement of the Federal Insecticide, Fungicide, and Rodenticides [sic] Act. The substance of the review was there was little effective compliance action and no review by the Justice Department in over 13 years.

This was true, the GAO found, even in instances where repeated major violations of the law were cited by the Agricultural Research Service and when shippers did not satisfactorily act to correct violations or ignored Agricultural Research Service notifications that prosecutions were being contemplated.

The extent of that violation is in the data accumulated on the samples that the GAO reviewed that did not meet specifications laid down by the Federal Insecticide, Fungicide,

and Rodenticide Act. Under the act, U.S. Agriculture [sic] Research Service can take action to remove products from the market, cancel registration, and classify those who ship products who violate the law.

GAO found that in over 2,751 samples of products tested and reviewed during fiscal year 1956, over 750 were found to be in substantial violation of the law. Of these 70 percent or 520 with major violation of the law. A 1967 total of about 5,000 samples were taken and 23 percent were found to be in violation. I don't consider this to be effective compliance of the regulation.

(Part 6-A of Hearings, Aug. 1, 1969, p. 3219)

The report referred to the need to improve regulatory enforcement procedures involving pesticides (B-133192, Sept. 10, 1968).

### Allowability of Training Costs

From *The Defense Contract Audit Agency Bulletin* for December 1970:

In an audit of labor costs incurred under a CPFF contract awarded to a major manufacturer of computers, a DCAA Branch Office reported that the contractor at a nearby off-site location had conducted two Basic Programming (Electronic Data Processing) training courses and one Computing System Course for 50 employees, with the cost of the training being charged to the Government contract. Of these employees, 37 were transferred to other contractor locations immediately after completion of their training, obviating benefit to the Government contract. Furthermore, any such training was not within the scope of contractual requirements. DCAA auditors, therefore, recommended that \$192,000, the total cost of the two training courses, be disapproved. The contracting officer sustained \$145,000 of this amount.

### Glance at the 1972 Budget

The Federal budget for the fiscal year 1972, submitted by President

Nixon on January 29, 1971, contains a welcome overview in the form of a table bearing the heading "The Budget at a Glance."

### THE BUDGET AT A GLANCE

(Fiscal years. In billions)

Description	1970 actual	1971 estimate	1972 estimate
Budget receipts.....	\$193.7	\$194.2	\$217.6
Budget outlays.....	196.6	212.8	229.2
Actual deficit (—).....	—2.8	—18.6	—11.6
Full-employment surplus.....	2.6	1.4	0.1
Budget authority.....	213.0	236.3	249.0

### Revenue Sharing and Accountability

One of the debatable aspects of the proposal for sharing Federal tax revenues with State and local governments is the concept of accountability for the shared revenues. As the debate over this proposal waxes warmer, it is well to know just what President Nixon said on this point. In his message to the Congress of February 4, 1971, proposing a \$5 billion program of general revenue sharing, the President stated:

Ironically, the central advantage of revenue sharing—the fact that it combines the advantages of Federal taxation with the advantages of State and local decision-making—is the very point at which the plan is frequently criticized. When one level of government spends money that is raised at another level, it has been argued, it will spend that money less responsibly; when those who appropriate tax revenues are no longer the same people who levy the taxes, they will no longer be as sensitive to taxpayer pressures. The best way to hold government accountable to the people, some suggest, is to be certain that taxing authority and spending authority coincide.

If we look at the practice of government in modern America, however, we find that this is simply not the case. In fact, giving

States and localities the power to spend certain Federal tax monies will *increase* the influence of each citizen on how those monies are used. It will make government *more* responsive to taxpayer pressures. It will *enhance* accountability.

In the first place, there is no reason to think that the local taxpayer will be less *motivated* to exert pressure concerning the way shared revenues are spent. For one thing, the local taxpayer is usually a Federal taxpayer as well; he would know that it was his tax money that was being spent.

Even if local taxpayers were only concerned about local taxes, however, they would still have a direct stake in the spending of Federal revenues. For the way Federal money is used determines how much local money is needed. Each wise expenditure of Federal dollars would mean an equivalent release of local money for other purposes—including relief from the need to raise high local taxes even higher. And every wasted Federal dollar would represent a wasted opportunity for easing the pressure on local revenues.

Most voters seldom trace precisely which programs are supported by which levies. What they do ask is that each level of government use *all* its money—wherever it comes from—as wisely as possible.

The average taxpayer, then, will be no less *disposed* to hold public officials to account under revenue sharing. What is more, he will be *able* to hold them to account far more effectively.

The reason for this is that "accountability" really depends, in the end, on accessibility—on *how easily* a given official can be held responsible for his spending decisions. The crucial question is not where the money comes from but whether the official who spends it can be made to answer to those who are affected by the choices he makes. Can they get their views through to him? Is the prospect of their future support a significant incentive for him? Can they remove him from office if they are unhappy with his performance?

These questions are far more likely to receive an affirmative answer in a smaller jurisdiction than in a larger one.

For one thing, as the number of issues is limited, each issue becomes more important. Transportation policy, for example, is a crucial matter for millions of Americans—yet a national election is unlikely to turn on that issue when the great questions of war and peace are at stake.

In addition, each constituent has a greater influence on policy as the number of constituents declines. An angry group of commuters, for example, will have far less impact in a Senatorial or Congressional election than in an election for alderman or county executive. And it is also true that the alderman or county executive will often be able to change the local policy in question far more easily than a single Congressman or Senator can change policy at the Federal level.

Consider what happens with most Federal programs today. The Congress levies taxes and authorizes expenditures, but the crucial operating decisions are often made by anonymous bureaucrats who are directly accountable neither to elected officials nor to the public at large. When programs prove unresponsive to public needs, the fact that the same level of government both raises and spends the revenues is little comfort.

At the local level, however, the situation is often reversed. City councils, school boards and other local authorities are constantly spending revenues which are raised by State governments—in this sense, revenue sharing has been with us for some time. But the separation of taxing and spending authority does not diminish the ability of local voters

to hold local officials responsible for their stewardship of *all* public funds.

In short, revenue sharing will not shield State and local officials from taxpayer pressures. It will work in just the opposite direction. Under revenue sharing, it will be harder for State and local officials to excuse their errors by pointing to empty treasuries or to pass the buck by blaming Federal bureaucrats for mis-directed spending. Only leaders who have the responsibility to decide and the means to implement their decisions can *really* be held accountable when they fail.

(*Weekly Compilation of Presidential Documents*, Feb. 8, 1971, Vol. 7, No. 6, pp. 168–170.)

### New Urban Institute Publication

The Urban Institute has launched a new newsletter-type publication to increase the visibility of its work. Entitled *Search*, the first issue which is dated January–February 1971 explains its purposes as follows:

*Search* is a new bi-monthly report that will share the findings, insights, data, and further questions that turn up in the research work of The Urban Institute.

Research is not really complete until whatever emerges from an investigation is made widely available to possible users. In addition to federal agencies which sponsor much of our research, these users include the policy makers and administrators who manage cities day after day and officials at the state and federal level. They include also the citizens, action groups, scholars and researchers, business and labor organizations, writers and others whose concerns and enthusiasms somehow get reflected in the kinds of cities we have.

The brief descriptions of the Institute projects reported here may stimulate an interest in the more extensive studies from which they are drawn. Usually material on these studies is available and requests should be addressed to our publications office.

The publication goes on to explain that each issue will feature an account of one of the Institute's projects. The first issue features the Beat Commander project in Detroit, described as a new concept in city crime control.

The Urban Institute was organized in 1968 as a private, nonprofit research organization to help find solutions to the problems and concerns of American cities (see *GAO Review*, Fall 1968, p. 72). President of the Institute is William Gorham, a former Assistant Secretary of the Department of Health, Education, and Welfare. Its headquarters are located at 2100 M Street, N.W., Washington, D.C. 20037.

### Water Usage

According to the GAO report on "Controlling Industrial Water Pollution—Progress and Problems" (B-166506, Dec. 2, 1970), the production of one automobile requires 10,000 gallons of water. Getting even closer to home, the report, which is 72 pages long, notes that 10 gallons of water were required to produce each copy of the report.

### Joint Financial Management Improvement Program Reports

Two reports summarizing activities and accomplishments under this program over the past year were recently released.

—The regular annual progress report covering the fiscal year 1970 and signed by the heads of the four central agencies that provide leadership for the program, the Secretary of the Treasury, the Di-

rector of the Office of Management and Budget, the Chairman of the Civil Service Commission, and the Comptroller General of the United States.

—The second annual summary report of the activities of the JFMIP Steering Committee. The composition of this committee is as follows:

William J. Armstrong,	OMB
Chairman	
Steve L. Comings	Treasury
Chester Wright	CSC
Frederic H. Smith	GAO

### Transportation Financial Management

A major study of the Federal Government's transportation practices was completed last year under the auspices of the Joint Financial Management Improvement Program. The study began in April 1968 as an in-depth examination into the transportation practices and procedures of civil agencies of the Government. The objective was to develop improvements in documentation and procedures to alleviate problems in procuring, paying, auditing, and settling accounts with common carriers for freight and passenger transportation services used by the Government. The General Services Administration chaired the multiagency working group making the study. The study group received extensive cooperation from the carrier associations, carriers, and Government agencies contacted.

The comprehensive report on the study contains 58 recommendations for improving the Government's transportation practices. As they are placed into

effect, they are expected to bring significant savings in time and money to the transportation industry and the Government.

Significant recommendations in the report are:

- The U.S. Government bill of lading should be extensively revised, including the elimination of the *Consignee's Certificate of Delivery*.
- The short form U.S. Government bill of lading should be eliminated.
- Government agencies should be authorized to pay in cash, under certain conditions, for freight charges not exceeding \$25.
- Government agencies should review their domestic small surface shipments, including parcel post, to determine areas where it is more efficient and economical to use commercial services.
- Government agencies should treat claims for loss and damage on domestic shipments as separate actions apart from the carriers' bills for freight charges, and the Government should establish a realistic minimum below which it is uneconomical or impractical to file formal claims against carriers.
- The General Services Administration systems concept of automatically paying freight charges on certain shipments covered by freight-all-kinds rates should be vigorously pursued.
- The Government Transportation Request should be revised extensively.
- The authorization to pay in cash for passenger transportation services costing up to \$15 should be increased to \$100 per trip.

—A 6-months' pilot test of a proposed plan for automatic payment of airline ticket charges procured by teleticketing facilities should be undertaken.

—A civilian transportation central payment facility should not be established.

—A central point should be designated in each civilian department and agency to handle all improperly addressed transportation bills identified with that department or agency.

Adoption of a number of the recommendations is contingent upon enactment of legislation to modify certain provisions of existing law which affect the manner in which the Government pays for its transportation services. The General Services Administration with the support and assistance of the General Accounting Office has agreed to sponsor legislation to amend the law.

### **New Format of Comptroller General's Annual Report**

The 1970 report of the Comptroller General was submitted to the Congress on January 21, 1971. This annual report, a requirement of the Budget and Accounting Act, 1921, describes the activities and accomplishments of the General Accounting Office in some detail.

A number of improvements were made in the 1970 report, all designed to increase its usefulness.

—Physical size was increased to 7 $\frac{7}{8}$ " x 10 $\frac{1}{4}$ " permitting two-column printing and therefore

greater readability. The old size, 5 $\frac{7}{8}$ " x 9 $\frac{1}{8}$ ", had been used since the first annual report covering the fiscal year 1922.

—A separately bound appendix was prepared containing the compilation of GAO findings and recommendations for improving Government operations which had been published as a separate report in previous years. Other appendix material includes information on

the financial savings attributable to the work of GAO, a complete listing of audit reports issued during the year, and approvals of agency accounting principles and standards and systems designs.

Both volumes are thoroughly indexed and provide an excellent reference source for anyone wishing to inform himself about the operations and accomplishments of the General Accounting Office.

721515

# HEARINGS and LEGISLATION



By MARGARET L. MACFARLANE

*Chief, Legal Reference Services, Office of the General Counsel*

## Export-Import Bank

At the request of the Senate Banking, Housing and Urban Affairs Committee, the Comptroller General, *Elmer B. Staats*, discussed legislation to remove the Export-Import Bank from the budget process at a hearing on March 9, 1971. The bills before the committee for consideration were: S. 19 sponsored by Senator Mondale and S. 581 sponsored by Senators Sparkman, Tower, and Bennett. Mr. Staats restated GAO's traditional position of favoring the principle of full disclosure of agency activities to the Congress as well as the annual review by the Congress of budgetary programs. In lieu of the proposed legislation, Mr. Staats detailed for the committee several alternative courses of action. The alternatives suggested would provide the Export-Import Bank with the desired flexibility to promote U.S. export expansion and still permit Congress to retain its control. Subsequent to the hearings, the committee ordered favorably reported with amendments S. 581, which passed the Senate April 10. (Other participants: Messrs. *Smith, Hylander, Zappacosta, Moore, Masterson, and Blair.*)

## Lobbying Regulation

On March 16, 1971, the Comptroller General testified before the House Committee on Standards of Official Conduct on H.R. 5259, to require public disclosure of certain lobbying activities. Mr. Staats directed his statement to the provisions of the bill placing the administration of the lobbying regulation under the Comptroller General. Although Mr. Staats indicated that GAO does not seek the responsibility, it would accept it if the Congress so desired and made the legislation clear that the duties would be performed by GAO as an agent of the Congress. (Other participants: Messrs. *Socular, Moore, Masterson, and Thompson.*)

## Ocean Movement of Military Cargo

At the request of the House Merchant Marine and Fisheries Committee, the Assistant Comptroller General, *Robert F. Keller*, presented information concerning the use of time charters for the ocean movement of military cargo and its impact on U.S. flag vessels offering berth service.

GAO had issued a report on the Military Sealift Command's ocean transportation procurement procedures on January 22, 1971 (B-145455), and the hearing was a followup on the report. (Other participants: Messrs. *Sullivan*, *Shafer*, *Connor*, and *Fitzgerald*.)

### **Public Health Service Hospital Facilities**

Following the issuance of an advisory opinion on February 23, 1971 (B-156510), at the request of the House Committee on Merchant Marine and Fisheries, on the legality of the proposed closing of Public Health Service hospitals and clinics, both the House Committee on Interstate and Foreign Commerce, Subcommittee on Public Health and Welfare, and the Senate Committee on Labor and Public Welfare, Subcommittee on Health, conducted hearings on the closing of such hospital facilities. *Paul G. Dembling*, General Counsel, reviewed for the subcommittees the legislative history of the various Public Health Service hospital system statutes which reflect the long-standing congressional intent that the facilities be maintained by the Public

Health Service. (Other participants: Messrs. *Moore* and *Wade*.)

### **Impounding of Funds by the Executive Branch**

The Subcommittee on Separation of Powers of the Senate Judiciary Committee, during a series of hearings on the impoundment of funds by the executive branch of the Government, invited GAO to present its views on March 25, 1971. *Robert F. Keller* presented the statement. (Other participants: Messrs. *Dembling*, *Moore*, *Littman*, and *Fitzgerald*.)

### **House Post Office and Civil Service Committee**

The House Post Office and Civil Service Committee invited the Comptroller General to a briefing-type hearing on March 18, 1971. At this time, Mr. Staats discussed the work GAO had done with respect to the Post Office Department as well as the type of audit coverage and review that is contemplated under the Postal Reorganization Act beginning in fiscal year 1972. (Other participants: Messrs. *Keller*, *Ahart*, *Moore*, and *Blair*.)

## GAO Staff Changes



**Marvin Colbs**

Marvin Colbs was designated as deputy associate director for supply management in the Defense Division, effective December 14, 1970. In this position he will share the responsibility for planning, programming, and directing reviews of supply and logistics operations in the Departments of the Army, Navy, and Air Force, and the Department of Defense.

Mr. Colbs received a bachelor of science degree in accounting from Temple University in 1950 and joined GAO in the Dayton Regional Office in 1955 after 5 years in public accounting. In 1963, he was transferred to the Defense Division.

Mr. Colbs has had broad experience in the review of defense activities both in the field and in Washington. He has had responsibility for assignments in procurement, military pay and allowances, construction, and contract audits as well as all aspects of supply management.

In June 1969, Mr. Colbs graduated from the National War College at Fort McNair after a 10-month resident course in national security affairs. He also received a master's degree in international affairs from The George Washington University in September 1969. He is a CPA (Pennsylvania) and a member of the American and Pennsylvania Institutes of CPAs.

**John F. Flynn**



John F. Flynn was designated deputy associate director in the Defense Division, effective December 14, 1970. In this position he will assist in the overall supervision of GAO accounting and auditing work in the procurement area of the Department of Defense.

Mr. Flynn served in the U.S. Navy from 1943 to 1945 and has had broad and diversified experience in accounting and auditing in the defense agencies of the Federal Government since joining the General Accounting Office in September 1952. Prior to joining GAO, Mr. Flynn worked in public accounting and private industry. He graduated from the Bentley School of Accounting and was graduated *cum laude* from Northeastern University with a B.B.A. degree in June 1952.

He is a CPA (Massachusetts) and a member of the American Institute of Certified Public Accountants and the Federal Government Accountants Association. Mr. Flynn received the GAO Meritorious Service Award in 1961.



**Albert Goldstein**

Albert Goldstein, assistant general counsel, retired from active service on January 29, 1971, after more than 46 years of Government service.

Mr. Goldstein was born in Washington, D.C., and earned his bachelor of laws degree from Georgetown University in 1933. He served as an Assistant U.S. Attorney for the District of Columbia from 1937 to 1940. Mr. Goldstein was appointed as a principal attorney in the General Accounting Office on July 17, 1940. Later, Mr. Goldstein was appointed to the position of assistant general counsel and served in that position from October 30, 1949, to the date of his retirement. Mr. Goldstein is a member of the District of Columbia Bar and the Federal Bar Association.

**Kenneth F. Luecke**



Kenneth F. Luecke was designated as an assistant regional manager, Kansas City Regional Office, effective February 7, 1971.

Mr. Luecke received a bachelor of science degree in business administration from Washington University in 1954. He served as a commissioned officer in the U.S. Army from 1954 to 1956.

Since joining the General Accounting Office in 1954, Mr. Luecke served in the St. Louis office and in the International Division in Frankfurt, Germany. His overseas assignments included reviews of Army and Air Force supply and maintenance activities and foreign aid programs. In recent years, Mr. Luecke has been involved in reviews of the management of major weapons systems and has attended the Department of Defense Weapon Systems Management Course at the Defense Weapon Systems Management Center in Dayton, Ohio.



**Robert L. Rasor**

Robert L. Rasor, associate director, Office of Policy and Special Studies, retired from active service in December 1970.

Mr. Rasor, a native of South Carolina, entered Government service in 1941 with the Ordnance Corps of the War Department. He served in this agency until 1946, most of the time as chief project auditor at Baytown Ordnance Works, Baytown, Tex.

In 1946 he joined the Corporation Audits Division of the General Accounting Office. In that division and later in the Division of Audits, he was actively engaged in audits of the Tennessee Valley Authority, the Federal Crop Insurance Corporation, the Commodity Credit Corporation, and Defense contracts. In 1956, as an assistant director, he became a charter member of the Accounting and Auditing Policy Staff, renamed the Office of Policy and Special Studies in 1966. In 1961 he was designated as an associate director. In this assignment, he had primary responsibility for developing the audit policies of the General Accounting Office and related staff review work. In recognition of his consistently outstanding performance, he received the GAO Distinguished Service Award in 1969.

Prior to entering the Federal service, Mr. Rasor was associated with the public accounting firm of Harris, Kerr, Forster & Co. in New York City and Washington.

Mr. Rasor attended Columbia University, The George Washington University, and New York University, receiving his B.S. degree from the latter in 1941. He is a CPA (District of Columbia) and a member of the American Institute of CPAs, the District of Columbia Institute of CPAs, and the Federal Government Accountants Association.

**Robert G. Rothwell**



Robert G. Rothwell was designated as an associate director for facilities and support services in the Defense Division, effective December 14, 1970.

Mr. Rothwell received a bachelor of science degree in 1942 and a master of business administration degree in 1951 from New York University. In 1966 he completed the Advanced Management Program of Harvard Business School. He is a CPA (New York) and a member of the Federal Government Accountants Association.

During World War II, Mr. Rothwell served in the U.S. Army Counter Intelligence Corps. Prior to joining the General Accounting Office in 1951, Mr. Rothwell was a staff member of several public accounting firms in New York City. Since joining the Office, he has been assigned principally to work related to activities of the Department of Defense. He was one of the initial staff members of the European Branch, serving in the Frankfurt suboffice from January 1953 to July 1955, and he has been assigned to the Defense Division since its inception in 1956.



**Paul Shnitzer**

Paul Shnitzer was designated as an assistant general counsel in the Office of the General Counsel, effective February 22, 1971.

Mr. Shnitzer served in the U.S. Army Air Corps from 1943 to 1946. In 1948 he received a B.A. degree from Upsala College, and during 1948–49 he completed a year of graduate work at the Maxwell School of Citizenship and Public Affairs, Syracuse University. On June 4, 1954, he received a J.D. degree from The George Washington University. He attended the Judge Advocate General's School in Charlottesville, Va., in 1955.

Mr. Shnitzer entered civilian Government service in 1949 as a junior management assistant, serving with the Air Force until joining the GAO as an attorney in the Office of the General Counsel on November 8, 1954. He received the GAO Meritorious Service Award in 1961 and 1963.

In 1954, he was admitted to the bar of the District of Columbia. He has written a number of articles and lectured extensively on Federal procurement matters. He is coauthor of the second edition of West's *Federal Practice Manual* and is currently the chairman of the Federal Bar Association's Government Contracts Committee and the editor of the *Public Contract Newsletter* published by the *American Bar Association*. He also has served as a member of the House Office Building Commission Contract Appeals Board since August 1963.

**Jerome H. Stolarow**

Jerome H. Stolarow was designated as an associate director of the Defense Division, effective December 14, 1970. In this position, Mr. Stolarow will be responsible for the direction of special projects undertaken by the Defense Division.

Mr. Stolarow received a bachelor of business administration degree from the University of Oklahoma in 1951 and a juris doctor degree from Georgetown University Law School in 1955. He is a CPA in the State of Oklahoma and the District of Columbia, and has been admitted to the bar in the District of Columbia. He is a member of the American Institute of CPAs.

Mr. Stolarow served in the U.S. Army from 1951 to 1953. He joined the General Accounting Office in 1958 and has been on the staff of the Defense Division since that time.

In 1964, Mr. Stolarow attended the Program for Management Development, Harvard Business School, and during 1969-70 he attended the Industrial College of the Armed Forces. He received the GAO Special Education Award in 1970.

# Professional Activities

## Office of the Comptroller General

The Comptroller General, *Elmer B. Staats*, addressed the following groups:

The Federal Management Conference, Washington, D.C., on the "Legislative Reorganization Act of 1970," January 13.

The Brookings Institution Conference on Federal Government Operations, Washington, D.C., January 18.

The Brookings Institution Roundtable on Selected Issues in Public Law, Annapolis, Md., on "The Changing Role of the GAO and Government-Business Relations," January 19.

The Operational Auditing Seminar, American Management Association, New York City, on "Financial, Management and Program Auditing in the Federal Government," February 1.

The Graduate School of Business, Indiana University, Bloomington, Ind., on "National Priorities and the American Dream," February 18.

The Scholarship Dinner, Florida Atlantic University, Ft. Lauderdale, Fla., on "Public Affairs Challenges to Business in the 1970's," February 27.

The Executive Discussion, Armed Forces Management Association, on "New Army Materiel Acquisition Policies and Procedures," Washington, D.C., March 2.

The National Institute of Public Affairs Program for Executive Officers' Group, Charlottesville, Va., on "The Use of Consultants," March 5.

The Tax Foundation's Conference on Federal Affairs, Washington, D.C., on "Program Evaluation Role of GAO," and "Proposal to Change Fiscal Year," March 8.

The Financial Management Roundtable, Washington Chapter of the Federal Government Accountants Association, Washington, D.C., on "Issues Facing Financial Managers in the Seventies," March 11.

The National Capital Chapter of the American Institute of Industrial Engineers, Washington, D.C., on "Legislative Reorganization Act, Particularly as it Relates to Improving Program Evaluation Services for the Congress and with Particular Reference to the Role of the GAO," March 13.

Mr. Staats' address on "Potentials for Management Improvement," delivered at the Federal Management Improvement Conference, Washington, D.C., September 21, was printed in the Winter 1971 issue of the *GAO Review*. It was also printed in the February 1971 issue of the *Defense Management Journal* which contains other papers and materials from the conference.

The Assistant Comptroller General, *Robert F. Keller*:

Spoke before the Northern Virginia Chapter, Federal Government Accountants Association, on "New Responsibilities for the General Accounting Office in the Legislative Reorganization Act, and the Ribicoff Bill, S. 4432," January 5.

Participated in the Industry-Government Seminar on President Nixon's Anti-Inflationary Policies sponsored by the National Institute of Public Affairs, January 6.

Spoke on "Controlling Agency Policies and Programs" before the U.S. Civil Service Commission Training Program, Institute for New Government Attorneys, January 20.

*Thomas D. Morris*, Special Assistant to the Comptroller General, addressed members of the Federal Bar Association Briefing Conference on Government Contracts at a luncheon meeting, Philadelphia, March 2. He spoke on GAO's organization, staffing, program planning, and quality control practice.

*Ralph J. Guokas*, Program Planning Staff member, received a master of business administration degree in international business from The George Washington University, February 15.

#### Office of the General Counsel

*Paul G. Dembling*, general counsel:

Participated in the American Institute of Aeronautics and Astronautics President's Forum, New York City, January 26-28.

Spoke before the Annual Conference of the Attorneys of the Army Materiel Command on "Bid Protests under the Scanwell Doctrine—The Courts and the GAO," Alexandria, Va., February 9.

Spoke on "GAO's Changing Role" before the Veterans Administration Legal Seminar, Washington, D.C., February 25.

Spoke before the Briefing Conference on Government Contracts sponsored by the Federal Bar Association and the Foundation of the FBA in cooperation with the Bureau of National Affairs, Inc., Philadelphia, Pa., on "Competitive Negotiated Procurement," March 1.

*Stephen P. Haycock*, associate general counsel:

Spoke on "Claims—The Government Strikes Back" before the Briefing Conference on Government Contracts sponsored by the Federal Bar Association and the Foundation of the FBA in cooperation with the Bureau of National Affairs, Inc., Philadelphia, Pa., March 1.

Spoke before the Legal Logistics Officer Course, Advanced, at the Judge Advocate General's School, U.S. Army, on "GAO's Role in the Procurement Process," Charlottesville, Va., March 10.

*Melvin E. Miller*, assistant general counsel:

Spoke before the Defense Procurement Management Course on "The Role of the GAO in Defense Procurement," Fort Lee, Va., February 22.

*Robert H. Rumizen*, assistant general counsel:

Spoke before the Defense Advanced Procurement Management Course on "Problems in Formal Advertising," Fort Lee, Va., January 7.

Spoke before the Defense Advanced Procurement Management Course on "Problems in Formal Ad-

vertising," Crystal City, Va., March 11.

*Paul Shnitzer*, assistant general counsel:

Spoke before the Government Construction Contracting Course sponsored by the College of William and Mary in cooperation with Federal Publications, Inc., on "Preparation of Drawings and Specifications and Preparation of Bidding," Dallas, Tex., January 11.

Spoke before a training class for procurement personnel at Warner Robins Air Force Base, Macon, Ga., on "Problems in Formal Advertising and Negotiation." January 13.

Spoke before the Defense Advanced Procurement Management Course on "Problems in Formal Advertising." Fort Monmouth, N.J., February 5.

Spoke before the Concentrated Course in Government Contracts presented by the Marshall-Wythe School of Law, College of William and Mary, in cooperation with Federal Publications, Inc., on "Contracting Techniques and Subcontracting." Williamsburg, Va., February 23.

Participated as moderator at the meeting of the FBA Government Contracts Committee re "Scanwell—Bid Protests in the Courts" sponsored by the Federal Bar Association and the Foundation of the FBA in cooperation with the Bureau of National Affairs, Inc., Philadelphia, Pa., March 1.

*Seymour Efros*, deputy assistant general counsel:

Spoke on "Truth in Negotiation—What Is It and Where Is It Today,"

at a meeting jointly sponsored by the National Contract Management Association, the Federal Government Accountants Association, the Federal Bar Association, and the National Security Industrial Association, Boston, Mass., February 23.

Spoke before the Basic Course in Government Contract Administration, conducted by Louisiana State University, New Orleans, La., March 12.

### Office of Policy and Special Studies

*E. H. Morse, Jr.*, director, addressed the following groups:

The Austin and Huntsville Chapters, Federal Government Accountants Association, January 14 and 21, on "Some Recent Developments in Federal Accounting and Auditing."

The Dallas, Fort Worth, and Houston Chapters, Federal Government Accountants Association, February 16 and 18, on "Increasing the Visibility of the Government Accountant's Work."

The Kansas City and Denver Chapters, Federal Government Accountants Association, March 9 and 11, on "The Expanding Activities of Government Accountants."

The Baltimore Chapter, Federal Government Accountants Association, March 13, on "Professional Development and the FGAA."

Mr. Morse had an article published in the February 1971 issue of *The Office* entitled "Accountants Evaluate Federal Management."

*Frederic H. Smith*, deputy director, and *Herbert L. Feay*, assistant director,

have been appointed to an Ad Hoc Committee of the Federal Government Accountants Association's Federal Financial Management Standards Board to study the exposure draft of the AICPA on audits of life insurance companies. Mr. Smith is serving as chairman of the committee.

*Edward J. Mahoney*, deputy director for ADP, made presentations on the following subjects:

GAO's Government-wide computer program at the American Management Association's Management Systems and Sciences Planning Council meeting, Key Biscayne, Fla., January 22.

GAO's ADP activities, particularly those associated with GAO's long-range plans in the ADP area. before a special subcommittee of the Interagency ADP Committee studying long-range planning for Government ADP activities, Washington, D.C., January 26.

"Budgeting and Costing for ADP Activities" at the American Management Association Data Processing Seminar, Washington, D.C., February 9.

"Interfacing Peripherals with the Main Frame" at the American Management Association's 17th Annual Systems Management Conference, New York City, March 9.

*Keith E. Marvin*, associate director, and *Joseph D. Comtois*, assistant director, jointly led a discussion on "What Accountants Need to Know About Systems Analysis" at a section of the member participation meeting of the Washington Chapter of the National Association of Accountants, January 16.

On February 22, Mr. Marvin and *Arthur R. Goldbeck*, supervisory auditor, jointly led a discussion on analysis for the Congress at the Industrial College of the Armed Forces.

*Mortimer A. Dittenhofer*, assistant director:

Addressed the Montgomery-Prince Georges County Chapter of the Federal Government Accountants Association. February 10, on "The Status of the Audit Standards Project."

Addressed the Detroit Chapter of the Institute of Internal Auditors, March 2, on "The Status of the Audit Standards Project."

Participated in a Council of State Governments Seminar for State auditors in Brownsville, Tex., on performance auditing and presented two papers: one on the work of the Audit Standards Work Group and its current status, and a second on the application of audit standards to the public sector.

Is currently serving as a member of a Technical Advisory Committee on an audit research project being conducted by the Department of Education of the State of Alabama and by the University of Alabama.

The following articles by Mr. Dittenhofer have been published:

"A Systems Approach to Implementation to State Audit Systems" in a Special Bulletin of the Municipal Finance Officers Association.

"Application of Audit Standards to the Public Sector" in *The Federal Accountant*, Spring 1971 issue.

"Performance Auditing Simplified" in *Public Administration Review*, March/April 1971.

*Earl M. Wysong, Jr.*, supervisory systems accountant:

Spoke on "Auditing and EDP" at a seminar at The George Washington University, March 2.

Served as chairman of the Accounting Subcommittee of the FGAA National Research Committee Bibliography Project, which was completed in March.

Served as chairman of the 1971 nominating committee for the Doctoral Students Association of The George Washington University.

*Frankie L. Schlender*, systems accountant, participated as a member of the Accounting Subcommittee of the FGAA National Research Committee Bibliography Project.

#### Civil Division

*A. T. Samuelson*, director, addressed the Calumet, Indiana Chapter of the National Association of Accountants, March 23. He spoke on "The General Accounting Office—Its Changing Role."

*Gregory J. Ahart*, deputy director, attended the Conference on Business Operations in San Francisco conducted by the Brookings Institution, January 24-29.

*Henry Eschwege* and *Victor Lowe*, associate directors, briefed State and local law enforcement officials in the Internal Revenue Service Special Agency Basic School Program sponsored by the Law Enforcement Assistance Administration—Department of Justice, February 11 and March 3. They spoke on the functions of GAO and the results of selected reviews that have been made primarily by the Civil Division.

*Max Hirschhorn*, associate director, attended the Residential Program in Executive Education at the Federal Executive Institute, Charlottesville, Va., March 7 to April 30.

*Dean K. Crowther*, assistant director, addressed the Third Institute on Federally Sponsored Grants for Educational Institutions, Non-Profit Organizations, and Governmental Agencies, Washington, D.C., February 1. He spoke on the "Role of the GAO in Auditing Federal Health Activities."

*Bernard Sacks*, assistant director, attended the Intergovernmental Programs-Problem Seminar at the Federal Executive Seminar Center, Kings Point, N.Y., March 8-19.

*Frank V. Subalusky*, supervisory auditor, addressed the members of the 1971 Intergovernmental Affairs Fellowship Program, Chantilly, Va., January 22. He spoke on his participation and experiences while assigned to various governmental offices at the State level in Harrisburg, Pa.

#### Defense Division

*Charles M. Bailey*, director, participated in the January seminar of the National Contract Management Association, Houston, Tex. The subject of the seminar was "The Market Place Today." His remarks were on the general subject of today's environment as it affects the market place. Mr. Bailey also addressed the professional military comptroller course, Air University, Maxwell Air Force Base, Ala., March 8.

*Jerome H. Stolarow*, associate director, gave a presentation entitled "Results of GAO Should Cost Study," March 1, at the directors' meeting of

the Department of Defense Procurement Management Review Program.

*John F. Flynn*, deputy associate director, discussed how the GAO conducted the defense industry profit study before the Chicago Chapter of the National Contract Management Association, February 17.

*Hyman S. Baras*, assistant director, addressed the Procurement Seminar for Auditors and Contract Managers sponsored by the Interagency Auditor Training Center, March 8, Washington, D.C. His topic was "How GAO Responds to the Needs of the Congress."

*Max Stettner*, assistant director, attended the Civil Service Commission's Executive Seminar at Kings Point, N.Y., February 1-12.

*Joseph J. Kline*, assistant director, and *Charles A. Schuler*, supervisory auditor, spoke before the Vietnam Task Group, an intra-Government organiza-

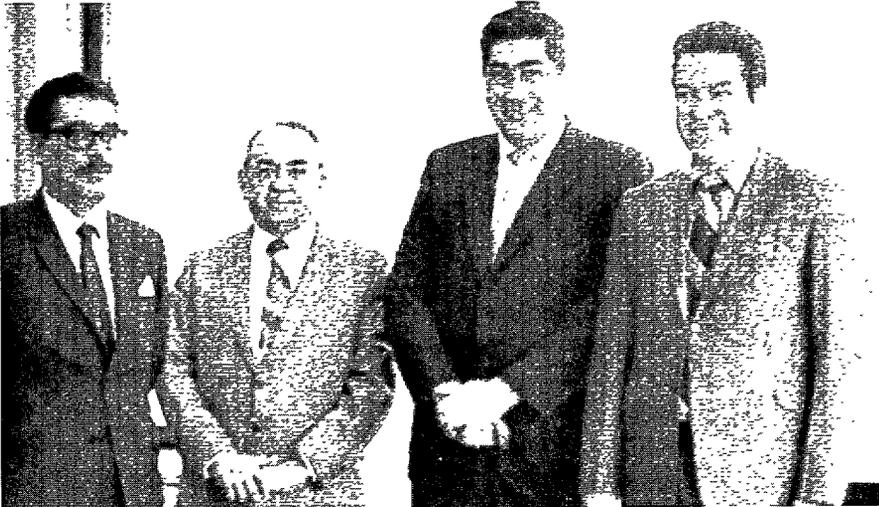
tion, February 24, Washington, D.C. Their subject was the General Accounting Office's review of the Vietnamization Program.

*John Landicho*, supervisory auditor, addressed the Logistics Executive Development Course at the Army Logistics Management Center, Fort Lee, Va., January 20. His subject was "GAO and Military Supply Management."

### Field Operations Division

*Robert A. Wlodarek*, supervisory auditor, Chicago, addressed the Federal ADP Council of the Chicago Federal Executive Board, December 15. The topic of his presentation was "GAO and ADP in the Federal Government."

*David P. Sorando*, regional manager, Cincinnati, addressed the American Society of Military Comptrollers at their luncheon meeting, February 11,



*Guatemalan Audit Officials Visit GAO. From left to right are Sr. Leopoldo SAJCHE Sosa, Comptroller General of Guatemala; Arthur Angel, U.S. Agency for International Development; Alfonso J. Strazzullo, New York Regional Manager; and Sr. Fernando RODAS Corzo, Deputy Comptroller General of Guatemala, during a briefing, January 22, on the planning and conduct of GAO audits by a field office. The audit officials of Guatemala were also given a briefing, January 29, by members of the Los Angeles Regional Office.*

at Fort Benjamin Harrison. His topic was "The Role of the GAO in the Financial Management of the DOD."

*Deon H. Dekker*, assistant regional manager, Dallas, participated as a panelist in the Career Day program at Texas A & M University, College Station, Tex., January 26.

*Stewart D. McElyea*, regional manager, Denver, is serving as chairman of the nominating committee of the Denver Chapter of FGAA.

*Duane Lownsberry*, audit manager, Denver, took part in a Claims Activities Workshop sponsored by Region 2 of the Forest Service, January 14. He also participated as a panel manager in a symposium on career opportunities in Government at the University of South Dakota, February 25.

*Frank B. Graves*, supervisory auditor, San Francisco, addressed the December meeting of the Electronic Applications Research Forum in San Francisco on the subject "Federal Trends in Automatic Data Processing."

*Irwin M. D'Addario*, assistant regional manager, Seattle, has been appointed chairman of the Subcommittee for Identifying Program Conflicts, a subcommittee of the Seattle Federal Executive Board. Also, Mr. D'Addario addressed the Puget Sound Chapter of the Institute of Internal Auditors at Renton, Wash., February 23. He discussed GAO functions and responsibilities.

*L. Neil Rutherford*, supervisory auditor, Seattle, was recently appointed a member of the Committee for Improving the Quality of the Federal Government, a standing committee of the Seattle Federal Executive Board. His area of interest involves increasing the effectiveness and efficiency of Federal operations by periodically publicizing

improvements adopted by Federal managers.

On March 5, *Donald L. Scantlebury*, regional manager, and *James B. Deemer*, supervisory auditor, Washington, participated in a West Virginia accounting symposium hosted by West Virginia Wesleyan College, of Buckhannon, W. Va. The purpose of the symposium was to acquaint students and faculty members from all the West Virginia colleges and universities with various Government and private accounting careers. Mr. Scantlebury discussed career opportunities offered by the General Accounting Office.

On February 25, Mr. Deemer attended ribbon-cutting ceremonies for the new Technological Building of the Northern Virginia Community College. He is a member of the college's accounting advisory committee.

### International Division

On February 3, *James A. Duff*, associate director, and *Eugene C. Wohlhorn* and *Frank C. Conahan*, assistant directors, conducted a seminar for participants in American University's Washington Semester Program. Participants in the program were government and political science students selected from among 200 colleges and universities throughout the United States. The purposes and functions of GAO were discussed with international activities being emphasized.

*Harold E. Lewis*, supervisory auditor, Far East Branch, Honolulu, was elected president of the FGAA Hawaii Chapter for 1971. *William J. Anderson*, supervisory auditor, was elected treasurer. *Clifford I. Gould*, assistant direc-

tor, and *John J. Simon* and *Richard C. Thabet*, supervisory auditors, were elected directors.

### Office of Personnel Management

*Leo Herbert*, director, spoke on "The United States General Accounting Office—50 Years: A Perspective of Accounting," before the Accounting Group of the College of Business Administration, Texas Technological University in Lubbock, Tex., February 11. On February 13, he participated in the Second Annual Sacramento State College Accounting Symposium and spoke on "Training for Auditing of Management Systems." Mr. Herbert was selected as a member of the Accreditation Revisitation Team of the American Association of Collegiate Schools of Business that renewed the accreditation of the University of Kentucky. March 1-2.

### Transportation Division

*T. E. Sullivan*, director, attended the meeting of the Standard Transportation Commodity Code Committee of the Association of American Railroads, Atlanta, Ga., February 3-5. He discussed problems of mutual concern regarding the use of the freight commodity codes.

*E. B. Eberhart*, supervisory transportation specialist, and *Lowell James*, supervisory management auditor, attended the semiannual meetings of the Cargo and Passenger Revenue Accounting Committees of the Airline Finance and Accounting Conference, Washington, D.C., March 16 and 17. Mr. Eberhart discussed various problems encountered by carriers on Government traffic, including the procurement and payment on excess baggage. Mr. James gave a progress report on the implementation of the Joint Agency Transportation Study recommendations.

# Successful Candidates— November 1970 CPA Examination

Listed below are the employees who passed the November 1970 CPA examination:

## REGIONAL OFFICE

<i>Name</i>	<i>Regional Office</i>	<i>State</i>
James E. Caldwell . . . . .	Philadelphia . . . . .	Pennsylvania.
Nathan N. Cheney . . . . .	Washington . . . . .	Virginia.
Thomas G. Coupar . . . . .	San Francisco . . . . .	California.
John J. Dombrosky . . . . .	Detroit . . . . .	Ohio.
John M. Donnelly . . . . .	Philadelphia . . . . .	Pennsylvania.
Ronald D. Flynn . . . . .	Philadelphia . . . . .	Pennsylvania.
Stanley C. George . . . . .	San Francisco . . . . .	California.
Edgerton R. Haskin, Jr . . . . .	Dallas . . . . .	Texas.
William F. Laurie . . . . .	Detroit . . . . .	Ohio.
Charles A. McClendon . . . . .	Kansas City . . . . .	Illinois.
Kathryn E. McNurlin (Miss) . . . . .	Denver . . . . .	Colorado.
J. Peter Newlon . . . . .	San Francisco . . . . .	California.
Joseph G. Sakelaridos . . . . .	Philadelphia . . . . .	Pennsylvania.
Weldon E. Stanley . . . . .	Dallas . . . . .	Texas.

## WASHINGTON

<i>Name</i>	<i>Division</i>	<i>State</i>
Lawrence J. Dyckman . . . . .	Defense . . . . .	New York.
Anthony J. Gabriel . . . . .	Office of the Comptroller General.	Virginia.
Paul J. Granetto . . . . .	International-Far East Branch.	Illinois.
Charles A. Pistole . . . . .	Civil . . . . .	Washington, D.C.
Duane M. Ponko . . . . .	Civil . . . . .	Virginia.
Henry J. Steininger . . . . .	International . . . . .	Virginia.
John N. Toler, Jr. . . . .	Defense . . . . .	Texas.
Joseph E. Totten . . . . .	Civil . . . . .	West Virginia.
Joanne E. Weaver (Miss) . . . . .	Civil . . . . .	Virginia.
Gary L. Whittington . . . . .	Civil . . . . .	West Virginia.
David W. Yeakel . . . . .	Civil . . . . .	Virginia.

# New Staff Members

The following new professional staff members reported for work during the period December 16, 1970, through March 15, 1971.

<b>Civil Division</b>	Campbell, Wayne E. Costa, Robert J. Cronin, Robert E. Kaulfuss, Ernest J., Jr. Mozzer, Joseph W., Jr. Samsell, Lewis P.	Bloomsburg State College Bryant College University of Maryland Lehigh University Florida State University West Virginia University
<b>Defense Division</b>	Justice, Floyd B. Zipp, Alan S.	Florida State University University of Tennessee
<b>International Division— Washington</b>	Avalos, Henry Nason, Steven L.	Thunderbird Graduate School Thunderbird Graduate School
<b>Office of Personnel Management</b>	Culkin, Mary A. (Miss)	U.S. Civil Service Commission
<b>Office of Policy and Special Studies</b>	Epley, Harlan B. Kozura, Ronald  Simonette, John F.	Department of Commerce Board of Governors of the Federal Reserve System Honeywell, Incorporated
<b>REGIONAL OFFICES</b>		
<b>Denver</b>	Alvarez, Joseph I.	Baylor University
<b>Los Angeles</b>	Roth, Norman E.	California State College
<b>Norfolk</b>	Radosevich, Joseph J.	Virginia Polytechnic Institute

## Readings of Interest

*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.*

### **The GAO: Untapped Source of Congressional Power**

By Richard E. Brown; The University of Tennessee Press, Knoxville, 1970; \$5.95.

This is the first book published since 1939 which is concerned almost exclusively with the role and activities of the General Accounting Office (GAO). The author is a staff member of the State of New York Legislative Commission on Expenditure Review. He has worked for the National Security Agency and the Tennessee Valley Authority, and he taught at the College of William and Mary. Prior to his present position he was a consultant to GAO.

The author limits his attention to GAO's auditing and related investigative functions in this book because "these two functions give the GAO a special opportunity to make an invaluable contribution to Congress in carrying out its own enormous responsibilities. To explore in detail the GAO's total responsibilities could easily become confusing and further obscure the area of the GAO's greatest poten-

tial." He selected one agency—the Tennessee Valley Authority (TVA)—“to serve as the analytical tool for depicting how, specifically, the GAO's audit work serves Congress and for describing in some detail the GAO's relations with those whose activities it audits.”

Senator Proxmire explains in the foreword to the book “This book began as a case study of the GAO and its relationship to the Tennessee Valley Authority. Professor Brown has extended that original plan so that the book encompasses far more than its original objective.” The significance of this comment by the Senator becomes apparent upon reading the book because essentially what the author has done is to describe briefly in the first part of the book the legislative development of GAO functions and its role in the executive branch. He then proceeds in the second part to discuss in somewhat more detail the conflicts and relations between the various Comptrollers General, starting with the first, and TVA management. The third part of the book is a brief discussion of congressional use of GAO reports. The

final part consists of the author's evaluation of the work by GAO and his conclusions concerning the additional services GAO could undertake in the future to serve the Congress—provided the Congress is interested in and capable of carving out for itself a stronger position *vis-a-vis* the executive branch.

GAO staff members will find the discussions of early (1933–1945) TVA and GAO events particularly interesting because many of these events were part of a conflict scenario in which GAO developed its *modus operandi*. These events are not well known to most of GAO's staff. In the third section of the book the author illustrates the congressional use of GAO reports, but he offers no analysis of frequency of use of reports or the manner in which reports have been used by committees. The author's approach throughout the book is anecdotal.

The author's evaluation in the last part of the book of how well GAO realizes its full potential is based on GAO performance in relation to four key criteria established by Joseph Harris in his 1964 book *Congressional Control of Administration* and two additional criteria suggested by the author. These criteria are:

1. The GAO must be independent of the executive branch and responsible only to Congress.
2. The GAO audit must be a true postaudit.
3. The audit must be comprehensive, intensive, and promptly executed.
4. Congress must be organized to receive, consider, and act on audit reports.
5. The GAO must be professionally competent and as objective as pos-

sible in a political environment—that is, not politically motivated.

6. The results of the GAO's audit work must be significant, and the audit effort must deal with a variety of timely issues that are important to Congress and to the departments and agencies directly concerned.

The author concludes that all the criteria are met except number 4. In fact, throughout the book GAO fares quite well except for some not so complimentary remarks about early TVA problems and a comment (p. 75) about a lack of promptness in making audit reports.

Numerous suggestions are made which the author believes would enhance the effectiveness of GAO. For example, he believes that conflicting agency views on GAO reports should be put in separate reports attached to GAO documents in order that the professional views of GAO might not be compromised by agency management views (p. 62). No evidence is presented to illustrate how GAO views may have been compromised. He also suggests that it may be in the best interests of both the GAO and the Congress if GAO would serve committees but not individual Congressmen (p. 79). The question of executive privilege is brought up briefly and just as briefly disposed of by the comment that "This dilemma is one which cries out for additional research and an attempt to establish badly needed guidelines."

Several further suggestions of particular interest are made:

- GAO could review the program evaluations and program planning

and budgeting judgments made by executive departments (p. 100).

- GAO could provide budget information in the form of a pro forma cost-effectiveness analysis of alternative courses of action (p. 102).
- GAO could add to its functions that of ombudsman, which function might be described as the "people's watchdog against abuses of power" (p. 103).

I believe that there is something of interest in this book for all GAO staff members and for others who want to know something of the workings and products of GAO. Unfortunately, there is too little discussion of many of the topics introduced in the book. The author's analysis of GAO products is most noticeable by its near absence, at least in a statistical sense. Trends of the numbers of GAO reports, the scope and types of reports, the uses made of GAO reports, and the professional manpower

capabilities are not discussed in the book although a few passing comments are made in each of these areas.

Another important subject which might have been discussed in this book, or in any book concerned with a Federal agency whose principal resource is a professional staff, is the philosophies and bearing of the agency leaders— its high level managers. The author says almost nothing about such matters.

In summary, I believe GAO staffs will find the book worthwhile reading, but they will probably find themselves looking forward to another book about GAO which is considerably more thorough and analytical in approach than is this one. But, after all, should one expect much more in only 106 pages?

*Ted M. Rabun,*  
ASSISTANT DIRECTOR,  
OFFICE OF POLICY AND  
SPECIAL STUDIES.

## 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 GAO Award for Significant Contribution to Financial Management Literature and is presented during the GAO awards program held annually in June in Washington.

One award of \$250 is available to contributing staff members 31 years of age or under at the date of publication. Another award of \$250 is available to staff members over 31 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 member. 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.

# THE GAO REVIEW

## LIAISON STAFF

Office of Policy and Special Studies.....	<i>E. H. Morse, Jr.,</i> Coordinator
Office of the Comptroller General.....	<i>Rodney E. Espe</i>
Office of the General Counsel.....	<i>Milton J. Socolar</i>
Civil Division.....	<i>Jack L. Mertz</i>
Defense Division.....	<i>Frank M. Kimmel</i>
International Division.....	<i>Charles E. Hughes</i>
European Branch.....	<i>William L. Martino</i>
Far East Branch.....	<i>Clifford I. Gould</i>
Transportation Division.....	<i>Fred J. Shafer</i>
Field Operations Division.....	<i>Clyde E. Merrill</i>
Office of Personnel Management.....	<i>N. B. Cheatham</i>
Atlanta .....	<i>Andrew F. McCall</i>
Boston .....	<i>Charles F. Carr</i>
Chicago .....	<i>Clement K. Preivisch</i>
Cincinnati .....	<i>Daniel L. McCafferty</i>
Dallas .....	<i>Harold C. Barton</i>
Denver .....	<i>John T. Lacy</i>
Detroit .....	<i>Robert O. Gray</i>
Kansas City.....	<i>Arnett E. Burrow</i>
Los Angeles.....	<i>Eugene T. Cooper, Jr.</i>
New York.....	<i>William F. Paller</i>
Norfolk .....	<i>Paul Gaskill</i>
Philadelphia .....	<i>Horace Y. Rogers</i>
San Francisco.....	<i>Kenneth A. Pollock</i>
Seattle .....	<i>Richard O. Long</i>
Washington .....	<i>George L. Egan, Jr.</i>

## EDITORIAL ASSISTANCE

Office of Policy and Special Studies.....	<i>Josephine M. Clark</i>
Office of Administrative Services.....	<i>Jane A. Benoit</i>
	<i>Alice E. Graziani</i>
	<i>Linda M. Lysne</i>

U.S. GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

**OFFICIAL BUSINESS**



POSTAGE AND FEES PAID  
U.S. GENERAL ACCOUNTING OFFICE

