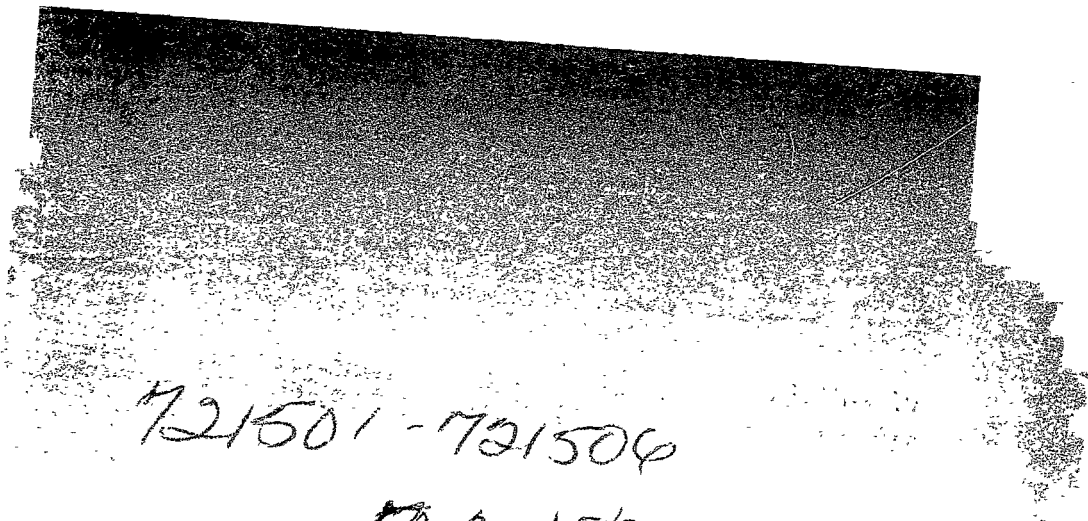


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THE GAO REVIEW



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A Positive Program for Improving Communications Between Federal Agencies and Accounting Faculties and Students

721501

By William L. Campfield

This article describes media and methods for improving the interchange of ideas between Federal financial management personnel and accounting faculties and students. It also sets forth ways in which accountants in the Federal Government and in academic circles can better coordinate their efforts to achieve various goals of the accounting profession.

It has become an article of faith that, in an age of rapidly changing technology (and ideology), the professional man must acquire and maintain an increasing store of knowledge, skill, and intellectual capacity.

As the accounting profession, in particular, widens its horizons, it becomes clearer each day that the profession's educators and practitioners will have to work closer together to achieve success over a wide range of formal education, research, professional development, practice administration, and the like.

Over the years, the public accounting sector of the profession and accounting educators have tried various devices and arrangements to arrive at

better rapport in achieving the profession's broadened objectives. Some of the more popular of these devices are: (1) faculty and student internships with public accounting firms, (2) joint task forces and committees of educators and practitioners studying problems of theory and practice, and (3) awards by public accounting firms and by professional societies of research grants, scholarships, and fellowships to college faculties and students. Some industrial and commercial organizations have followed similar practices but on a more limited scale than have public accounting firms.

Now that the scope and complexity of the financial affairs of the Federal Government have reached such a scale

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as to become a vital factor in the national economy, it is urgent that greater attention be given by the accounting educators and the accounting practitioners in Government to finding mutual interests in, and ways for, improving the accounting and related financial management practices of the Federal sector.

It is my purpose, in the remainder of this article, to suggest a few ways to improve the relations between the accounting practitioners in the Federal Government and their educator-colleagues.

Instructional and Research Assistance

The results of a survey by two professors underscore rather pointedly the need for colleges and universities to broaden their curriculum coverage of the theory and practice of accounting and financial management in governmental and other not-for-profit entities.¹ The authors of the survey found a high incidence of apathy among students and faculties regarding so-called governmental accounting. The authors concluded, however, that there was an urgent need in these areas for strong courses placing greater emphasis on theory than is normally included in current courses and for greater attention to such virtually neglected matters as Federal Government accounting and special problems in auditing not-for-profit organizations. The writer believes that the need for broadening course content is even stronger and more urgent than intimated by the cited authors.

¹ Paden Neeley and G. A. Robason, "Governmental Accounting: A Critical Evaluation," *The Accounting Review*, April 1967, pp. 366-369.

There are, of course, different ways in which instructional and research assistance can be furnished by the financial management personnel in Federal agencies to interested colleges and universities. Some direct input methods used by Government agencies are:

—*Government Administrator-In-Residence Program.* This type of program is exemplified by the Department of State's Diplomat-In-Residence Program. Under that program, administered by the Department's Foreign Service Institute, senior grade Foreign Service officers are assigned equivalent full professorships for 1-year tenures at cooperating academic institutions. The program provides the State Department and the faculties and student bodies of the participating colleges and universities with a link between the practicing political scientist and the political theory formulated and expostulated in academe. To date, the Diplomat-In-Residence Program has had 41 men in 43 colleges and universities in 32 States and the District of Columbia.

It is doubtful whether any single Federal agency could muster a program involving its accounting and financial management personnel on a scale comparable to the Department of State program. Consequently, the most likely-to-succeed device would be a pooling of talent by several of the agencies under the sponsorship of, say, the Federal Executive Institute or some other organizational com-

ponent of the Civil Service Commission. The sponsor could establish mechanisms for scheduling interchange between Federal agencies and colleges and universities. Ideally, the arrangement would result in one-for-one trade-offs; i.e., a Federal agency employee would go to a given college or university and, in turn, a professor from that college or university would go to the "losing" agency. More pragmatically, Federal agencies and colleges and universities would probably arrange their best person-to-person trade-offs using, say, the Civil Service Commission for information and assistance.

—*Agency-Conducted Short Course or Seminar for Faculties or Students.* Some Federal agencies conduct short courses or seminars for faculties or students of selected colleges and universities. These courses or seminars are intended to orient the attendees regarding the mission, programs, and operations of the sponsoring agencies, as well as to cover some fairly general illustrations of financial management developments in the Federal sector as a whole. On some occasions, however, the secondary objective of improving the Federal agencies' college recruitment positions becomes the overriding emphasis of the courses or seminars. Hence these devices should be used with caution if the longer range objective of creating better understanding of the nature and importance of Federal financial management is to be achieved.

The proffered instructional and research assistance by Federal agencies to colleges and universities might take a less direct input form than previously cited but still be offered on a continuing basis in any one or a combination of the following forms:

- Advising as to various kinds of research materials available and where they can be obtained; e.g., circulars, directives, and pamphlets available from the Bureau of the Budget; audit reports to the Congress available from the General Accounting Office; accounting manuals available from agencies such as National Aeronautics and Space Administration; and so on.
- Furnishing of lecturers for time-to-time discussion leadership on: (1) budget and cost estimating, (2) cost accounting, (3) applications of new internal auditing approaches and techniques, and (4) other financial management problems and practices.
- Developing and furnishing to faculties case problems or studies or structured incidents which may be used by the faculties as instructional material.
- Assisting upperclassmen, graduate students, and faculties on research projects. In many instances this assistance would take the form of either furnishing the researchers with material they could not otherwise obtain or pointing out source material the existence of which is not generally publicized. In some cases, personnel of the Federal agencies might be able to actively

guide and participate in selected research projects undertaken to result in specific mutual benefits for the researchers and the Government agencies.

Some universities have taken the initiative in bringing knowledgeable Government personnel, along with public accountants and industry personnel, into their instructional complexes as resource personnel. This input usually takes one or both of the following forms.

—*Professor-For-A-Day and the Professor-In-Residence Program.* This type of program is one in which selected Government administrators, along with other selected persons from the private sector, conduct an on-campus class or seminar, make a presentation to an assembly, or consult with individual faculty members and students on relevant subject matters or problems for either 1 day or a limited period. One Midwest university has both a Professor-For-A-Day Program and a Professor-In-Residency Program. At another university, the Department of Accountancy, in cooperation with a professional accounting society, has a Practitioner-In-Residency Program which utilizes the selected practitioner as a lecturer-consultant resource person for concerned faculty members and students.

—*Continuing Part-Time-Teacher Arrangement.* Many colleges and universities, especially those in the large urban centers, use Government employees, along with personnel from the private sector, as

part-time teachers in specialty areas. Most often the class is one dealing with first-course or elementary subjects in the specialty area. The college-university complex in the Metropolitan Washington area is somewhat different from that in most other geographic areas in that the part-time teaching by Government employees spans much of the curricula including the Ph. D. course level.

Counsel on Professional and Other Extracurricular Activities

There are fruitful areas outside the classroom, research laboratories, and libraries for cross-communication. Most college and university business schools have clubs or fraternities which have the objectives of fostering the broadening of students' knowledge and experience in the field of accountancy or in related business administration fields. It is common practice for these clubs and fraternities to have knowledgeable persons from the non-academic world address the membership on matters of current professional interest. These organizations also sponsor the attendance of their members at meetings, conferences, and symposiums conducted by relevant professional societies in accountancy or related business administration fields.

Federal agencies, individually or collectively, should establish some organized lecturers' and speakers' bureau or other mechanism for reaching a wide variety of colleges and universities. The main thrust of this effort would be to make available knowledge-

able and experienced Federal personnel who would, upon request, address specific classes or seminars on such important subjects as (1) program and performance budgeting, (2) accounting requirements in the Federal Government, (3) audit of Federal agency performance, and (4) data processing and systems design in the Federal Government.

One way of organizing the extra-curricular impact of Federal agencies on the academic community is a two-pronged effort: (1) establishing a list of subjects and the related lecturers and speakers and (2) distributing the list or brochure to a specific academic audience, for example, to all accountancy departments whose parent schools of business are members of the American Association of Collegiate Schools of Business. Two examples of this organized approach come to mind. One Federal agency announced in the Washington, D.C., daily press that it had cataloged several hundred topics on which its professional staff had volunteered to address colleges and community groups. Another Federal agency, a few years ago, disseminated to professional accounting societies and selected business schools a brochure which listed biographies of prospective speakers and the subject matters they were prepared to cover.

Other Communication Methods

In recent years, most Federal agencies have increased their efforts to provide individuals or groups on campuses with full information regarding career opportunities in the many Federal agencies that employ accountants

and other specialists operating in the financial management area. Most of the agencies publish pamphlets, brochures, and other material which provide information about jobs and career opportunities in the individual agencies. Also, the Federal Government Accountants Association published, in the fall of 1966, a pamphlet, *Opportunities for Accountants in Federal Financial Management*, which has had, and continues to have, a substantial distribution among colleges and universities. The "pamphleteering" is used by Federal agencies' representatives, for the most part, as it is by representatives of public accounting firms and industry, in recruitment visits to campuses.

I would like to comment upon a few other devices and arrangements which have been used on a time-to-time basis by Federal agencies to strengthen their relations with specific faculties and students or colleges and universities. I believe that each of these devices, discussed below, could be formalized and used by Federal agencies more intensely than has been the case in past years.

—*Professorial Contractor and Consultant Relationship.* Typically, this arrangement is made so that a Government agency may obtain a scarce ability or skill. The Department of Defense, in particular, has used this device heavily in respect to specialists in the quantitative fields.

—*Occasional Summer and Interperiod Internships.* This arrangement by Government agencies frequently is addressed to the em-

ployment of college students in the summer preceding the year of their graduation. Sometimes the arrangement includes time-to-time employment of college faculty members for short-term mission-program projects or for education and training projects. In either kind of student or faculty internship, the interface is more often than not focused on potential recruitment of the college student by the Government agency.

—*Unstructured Individually Arranged Cross-Communication.*

There are doubtless a number of instances in which individual Government employees, on the strength of their personal relations with faculties and administrators of selected schools, have been able to establish effective communication between the Government and academe. The writer has been making continuous contacts with students, faculties, and college curricula for Federal agencies for approximately 15 years. As part of the continuing liaison, he has taken leave to serve as a visiting professor at three major universities. Another illustration which comes to mind is that of a Federal Reserve Bank economist who arranged a visiting associate professorship during the 1968-69 school year at a highly regarded collegiate economics department as one means of improving the general understanding in academic circles of the functions and significance of the Federal Reserve System.

One further area for action by Federal agencies to improve their image on campus is that of establishing some kind of organized alumni participation by selected staff members. The writer suggests that each Federal agency establish a program whereby each of its financial management staff members is encouraged to make himself available on some agreed-upon, scheduled basis to participate at his alma mater, in an alumnus capacity, in the regular meetings and other activities of the accounting and financial management clubs and fraternities that exist at most collegiate schools of business. Following are the organizations most widely known: (1) accountancy clubs or combination accountancy-finance clubs; (2) Beta Alpha Psi, an accounting honors fraternity; (3) Alpha Kappa Psi, a general business service fraternity; and (4) Delta Sigma Pi, a general business service fraternity.

To avoid hit-or-miss participation, the suggested program might be organized and synthesized through each Federal agency's Career Development Program. Appropriate coordination should also be made with the agency's College Recruitment Program.

Conclusion

Today—as never before—the Federal Government needs stable and efficient administration of its financial affairs. This, of course, means not only the current need to attract outstanding college-trained young men and women as employees but also a closer tie between Federal agencies and the academic world to ensure that these two major institutional complexes—the

Government and colleges and universities—will synergize their talents and efforts toward solution of major economic and social issues facing the Nation.

In this article I have attempted to point out some of the ways in which Federal agencies—acting collectively, as well as individually—might better organize their efforts to improve communication and interchange of personnel between the Government and the academe.

The private sector firms and organizations have been doing many of the suggested activities and liaison for a number of years. They have drawn closer to the academic community not only for recruitment of potential employees but also in overt recognition of their own obligation to help build better educational institutions. Can the Federal agencies, which may well have a greater stake—especially in the future—in the many public educational institutions, afford not to commit themselves equally?

EDITOR'S NOTE:

A news release dated March 3, 1970, from Northern Illinois University, DeKalb, Ill., stated as follows:

An official of the U.S. General Accounting Office spent several days with students and faculty in the classrooms of Northern Illinois University's accountancy department.

Dr. William L. Campfield, assistant director, Office of Policy and Special Studies, in the Federal Government Washington, D.C., agency, lectured to two sessions of auditing students in the College of Business department.

The GAO official also conducted a seminar for NIU faculty and graduate students in accountancy to discuss the major problems and issues of the 1970's. He probed the nature of and recent developments in management auditing. Campfield also held individual meetings with students.

The head of the University's Department of Accounting informed the Comptroller General that Dr. Campfield's visit to their campus was extremely beneficial to the students and faculty and suggested that "such visits by high-level government officials be increased in future years."

721502

A Critique on Weapon Systems Management

By S. S. Podnos

In this article the author describes and discusses the two basic causes of the performance degradation, schedule slippage, and cost growth, which occur in developing and acquiring weapon systems.

During past and present GAO examinations in the research and development area, we have found a need to appreciably improve the development and procurement management of Defense Department weapon systems. This need for improvement exists (1) in the generation and approval of specific performance-schedule-cost requirements for the end-item development of materiel leading to production and operational use and (2) in the commitment of materiel to production and use prior to the completion of development as evidenced by satisfactory results obtained in all necessary tests.

The first of these problem areas is more simply termed "requirements determination." The second of these areas

is commonly referred to as concurrent development and production, or concurrency, although in the Army the term often used for concurrency is "Limited Production," or LP, which also permits large-scale production prior to development and test completion. These two problem areas are regarded as the basic causes for most of the performance degradation, schedule slippages, and cost overruns which have been and are occurring on major weapon systems.

Executive Branch and Congressional Concern

Deputy Secretary of Defense David Packard emphasized these problem

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areas in a memorandum of July 31, 1969, to the Secretaries of the three military departments, in which he pinpointed three areas of immediate concern—cost growth, a need for increasing dependence on hardware demonstration and a corresponding reduction of dependence on “paper analysis,” and a general deficiency in the amount of test and evaluation performed on developmental weapon systems prior to the commitment of significant resources to production.

Within the past several months, other high-ranking Defense officials and the House Appropriations Committee have also expressed concern with these problem areas. GAO concern, which dates back many years, is evidenced by final reports issued to the Congress, reports being prepared, and current work in progress.

Requirements Determination

The development process includes three types (or phases) of development; namely, exploratory development, advanced development, and engineering development. Exploratory and advanced development, collectively, are also called concept formulation, or the conceptual phase. During advanced development, which is also referred to as the subsystem’s phase, it is necessary to test materiel—at least the subsystems or critical components thereof—to establish a basis of fact for originating and conducting the subsequent engineering development phase.

In explanation, an aircraft system consists of airframe, powerplant, avionics, and armament subsystems. The airframe subsystem—in reduced

model form—would be subjected to exhaustive wind-tunnel testing during advanced development as the basis for authorizing engineering development. During advanced development, also, the avionics subsystem would be tested in an appropriate test aircraft, the powerplant would be tested at least on a test stand, and the armament would be tested in model form by subjecting it to firing tests. Conceivably, any fly-away competition of prototypes of an airframe-powerplant combination should also be conducted during advanced development.

Advanced Development Results

By the end of advanced development, the feasibility of attaining a specific end-item should have been determined by examination of experimental test results at least on a subsystem basis, for these subsystems are the essential building blocks of any weapon system. Although it is realized that problems might arise in the subsequent engineering development phase in interfacing these subsystems, at least this interfacing would not be hindered by subsystems on which probable performance, schedule, and cost factors either are unknown or are in large part unknown.

At the conclusion of advanced development, all three military departments evolve a specific and firm requirements document (the first); a development plan; and, for major systems, a proposal for contract definition. These documents authorize engineering development. For major systems, contract definition—which is an evaluative phase—is the first portion of engineering development.

The usual past courses of action for

the advanced development phase have been designed to either bypass the phase, satisfy it with a "paper" analysis, or perform it incompletely. None of these provide the basis of fact required for a realistic estimate of performance-schedule-cost factors upon which to conduct engineering development. This problem area is also compounded by semantic difficulties. The initiation of engineering development is often called the initiation of development, as if no prior experimental development work is required.

Contract Definition

Further, the deficiencies in conducting advanced development should be, but usually are not, picked up in reviewing the proposal for contract definition, for the contract definition phase is supposedly authorized when several criteria have been met. Recent remarks of Under Secretary of the Air Force John L. McLucas on this subject are of interest:

Contract Definition (CD), as originally conceived, was intended to provide an orderly transition from development through deployment of major systems by ensuring that technology was in hand, costs reasonable, test and evaluation criteria established, and that all pieces of the system would fit together before commitment to full procurement. Unfortunately, these criteria were seldom met at the time scheduled for contract definition. In practice, CD all too often proceeded anyway and resulted, not in complete definition, but in a paper plan for how the system could be built. Worse still, in some cases CD was considered only a milestone in the procurement cycle, with uncertainties ignored or suppressed as the price of getting on with the job. We were left with the form of CD without its substance.¹

¹ *Armed Forces Management*, January 1970, p. 53.

It should be apparent that the value of contract definition is also suspect unless the necessary prior development work, including its accompanying testing and evaluation, is satisfactorily performed.

Concurrency

Engineering development (which is also called "full scale" development, the systems development phase, or simply development) is completed in all three military departments when satisfactory results are obtained in a final test of the materiel design and a final test of materiel operational suitability, in turn, although in recent years these two tests have often been combined. This is the sequential method of engineering development, whereby production is not authorized until satisfactory results in these tests are achieved. Such results also signify the completion of development.

Concurrency occurs when an item is produced for deployment prior to its completion of development and testing. It is therefore a means of attempting to shorten the time period required to put a satisfactory new item into operational use. We have found that these attempts have failed more often than not. This is to be expected because, in concurrency, production is begun before the materiel design is stabilized.

However, even though concurrency is authorized, it is still necessary to complete engineering development with its necessary testing before an item is fully acceptable. In many cases, engineering development toward a fully acceptable item is continued long after an item is deployed for operational use. This por-

tion of engineering development is often called operational systems development, which is an attempt to upgrade a deployed item to its originally expected performance. In effect, this is development under the most disadvantageous conditions.

The Risks Are Great

The risks inherent in concurrent development and production are great because, if the item does not perform satisfactorily in subsequent tests and significant changes are required, the problem of making the necessary changes has been greatly increased. The changes then are not limited to a few developmental models, but instead must be applied to all production items as well. As a result, more time and money will be required to make the changes.

Making changes becomes even more costly and complicated when, before satisfactory completion of all necessary tests, such production items have been installed in an aircraft, ship, or other major system that has been put into operational use. To make the changes then, either the item must be returned to the manufacturer or contractor personnel required to make the changes must travel to the location at which the aircraft or ship is stationed. This not only has a detrimental effect on schedule and costs in evolving a satisfactory item, but also has an adverse effect on training, supply buildup, and planned combat effectiveness.

Degree of Concurrency

Concurrency is also a matter of degree; for the less development testing performed prior to production, the greater the risk that the produced item

will be unacceptable. And the greater the risk, the greater the likelihood that schedule and cost growth will occur. What is more, concurrency tends to "box in" an acquisition so that the military service is sometimes forced to accept what it gets rather than what it really wants and needs. This is the effect of concurrency on performance. The acceptance of items with degraded performance, such as reliability, has been well publicized.

We have found that concurrency has often been authorized at all Defense headquarters levels, based upon incomplete information and promises of expected performance. It would be a step in the right direction if these supervisory levels would require that "actual" performance, based upon satisfactory test results, be presented for review as the premise for a concurrency decision. Further, as Mr. Packard has stated, what is needed is a greater amount of test and evaluation on developmental weapon systems prior to a commitment to production. In many cases, full testing and evaluation appear to be advantageous before production is begun. This, in effect, would decouple development and production.

Cost Growth

In considering the performance-schedule-cost envelope, the cost factor has received the most attention in the Congress. In this respect Mr. Packard in his memorandum attributes cost growth primarily to (1) overoptimism in cost estimates for major weapon systems, (2) inadequate and incomplete effort in defining system requirements before entering full-scale (or

engineering) development, and (3) inadequate completion of the advanced development necessary to reduce the major risk areas to the point where they will be manageable in full-scale development.

The relationship of these prime reasons for cost growth and the two problem areas discussed should be obvious. What is more, the three reasons are—as Mr. Packard states—interrelated. Optimism is usually reduced to realism by facts upon which estimates and decisions can be based—in determining specific and firm requirements at the conclusion of the advanced development experimental work and feasibility testing; in revalidating these requirements at the conclusion of the contract definition phase as the basis for continuing the development cycle or terminating the item; and in deciding during engineering development whether or not to enter concurrent production. The mere presence of facts tends to make their consideration mandatory.

Contributions of the GAO

The GAO has emphasized examinations of the two cited problem areas since early 1967, and the results of this work have been given extensive coverage in congressional hearings and reports and on the floors of the Congress. Further, the receptivity of the Defense Department to these work results has been excellent, and the Department's comments on our draft reports have been most responsive. The concluding comments by the Assistant Secretary of Defense (Installations and Logistics) on a recent draft report, pertaining to concurrency and its effects in the

Army and Marine Corps, are indicative of this receptivity.

The efforts of your staff in this review are to be commended. They have focused on an area that has always merited careful scrutiny which has not always been apparent. We believe that we now have attention focused on LP items at all echelons of management. With this increased attention and the indicated strengthening of procedures we believe that any errors of commission in the past should be avoided or, at least, minimized.

We appreciate the constructive work you have done in this report and will be pleased to provide any other information which you may require.

The extent of GAO work in requirements determination and concurrency is reflected by nine reports, issued since the fall of 1968 to the Congress, its committees, or its Members, pertaining at least in part to the two problem areas and covering the gamut of Defense materiel. In addition, seven reports, being prepared for submission to the Congress, are in process.

Concluding Comments

If the two problem areas have received insufficient attention from the Defense Department in the past—whether deliberate or otherwise—it has been because of a concerted effort to save time from the beginning of the conceptual phase to operational use by severely curtailing the normal development cycle for materiel, even to the point of eliminating portions of this cycle. In terms of the human gestation cycle, this is tantamount to having a 7-month baby—commonly referred to as premature and subject to a get-well program involving increased schedule and costs until the baby is “ready.” Here too, as with weapon systems, the

probability of evolving a successful product increases directly with the length of cycle and is the greatest when the full span occurs.

Given the feasibility tests of hardware which should be performed in advanced development, it will be possible to establish a satisfactory program configuration based upon what can be and should be accomplished in terms of product performance, schedule, and costs. This requirements determination would be subject to revalidation in the contract definition phase, where required. And if there has been a sufficient amount of testing and evaluation in engineering development—at least to the degree necessary

to stabilize a design—before authorizing production for operational use, it will be possible to reduce concurrency risks and thereby better comply with the required performance-schedule-cost envelope.

Admittedly, the accomplishment of full testing (including complete operational suitability testing) before authorizing production for deployment would further serve to reduce risks, and probably should be required on all but the most urgent items. Compliance with the foregoing criteria, collectively, should appreciably benefit the development and acquisition of weapon systems.

Importance of Auditor Participation in ADP Systems Design

921503

By Earl M. Wysong, Jr.

The tremendous growth in electronic computer investment and usage in Federal Government operations and the increasing sophistication and complexity of these systems pose a strong challenge to management officials, systems designers, and auditors. This article discusses the need for and the benefits to be obtained by the participation of auditors in ADP systems design projects.

The growth of automatic data processing systems within the Federal Government can only be classified as "fantastic." As of June 30, 1969, there were an estimated 4,620 computers installed in Federal agencies; 19 years ago there were two. The rapid growth in the number of computers, particularly in recent years, is indicative of an increasing awareness on the part of the Federal agencies that their programs can be accomplished more timely, efficiently, and economically through automation. The resulting ADP costs, however, have

skyrocketed to an estimated \$1.9 billion for fiscal year 1969.¹

Government agencies' increasing use of computers for their data processing needs requires continued design, improvement, and refinement of their ADP systems. These systems are becoming increasingly more sophisticated and costly to develop and operate. For example, the military services of the Department of Defense have esti-

¹ Source for the figures presented: General Services Administration, Federal Supply Service, *Inventory of Automatic Data Processing Equipment in the U.S. Government*, U.S. Government Printing Office, 1969.

Mr. Wysong is a supervisory systems accountant in the Office of Policy and Special Studies. He has been a frequent contributor to the *Review* and was a recipient of the GAO Award for Significant Contribution to Financial Management Literature for 1967. Mr. Wysong is a CPA and is a member of the American Institute of Certified Public Accountants, the D.C. Institute of CPAs, the Federal Government Accountants Association, the American Accounting Association, the Association for Systems Management, and the Society for General Systems Research.

mated that investment costs for the Joint Uniform Military Pay System (JUMPS), which is currently under development, will be over \$58 million and the subsequent operating costs will be about \$172 million annually. Considering that this system is intended to account for and control annual expenditures for pay, allowances, and related items of over \$20 billion, or about 25 percent of the total Defense budget, the outlay becomes extremely important in the light of the long-range benefits which can be derived from the system. On the other hand, the high costs of developing JUMPS and other complex systems make it mandatory that extensive redesign be avoided.

The GAO is required by law to cooperate with the executive agencies in the development of their accounting systems and to approve agency systems which meet the prescribed principles, standards, and related requirements for accounting to be observed by each agency. In this regard, a recent change in policy limits GAO's formal approval actions to agency statements of principles and standards to govern their accounting systems and the proposed general designs of those systems. No longer will we undertake to review these systems specifically for the purpose of approving them in operation; but we will continue to conduct reviews of agency accounting systems in operation, as required by law, and report on our evaluations of those systems to the Congress and to agency heads as appropriate.

This policy change was announced by the Comptroller General to the heads of Federal agencies by memorandum of

October 16, 1969, subject: "General Accounting Office operations with respect to executive agency accounting systems." It is interesting to note that the memorandum is not explicit as to how far into the design of a system we should get before we approve it. It is the author's view that in any case auditor participation in the design of ADP systems should continue until the system has been tested and is ready for implementation. It is intended that this paper will bear out the merits of this view.

To comply with the legal requirements, GAO staff members must gain a thorough comprehension of the system being designed and the reliability of its output products. Participation in systems development is the best way to obtain this knowledge. Furthermore, to increase the probability of success of such expensive undertakings, it is essential that the auditor take an active part in achieving an optimal system design. His knowledge of management processing systems and his objective viewpoint will permit him to provide significant contributions to the development of well-conceived systems.

Traditionally, ADP systems have been developed primarily by computer specialists within a general framework of requirements established by management. These specialists have as their main objective the design of a system which will meet the requirements in the most economical manner. Oftentimes this philosophy leads to a disregard for the establishment of certain features which provide for adequate internal controls and audit trails.

An excellent example of the type of system which can result may be found in GAO's report to the Congress on the review of the automated central payroll system of the Department of Health, Education, and Welfare (HEW).² The review of HEW's system disclosed several serious deficiencies in the computation of pay and deductions, maintenance of employees' records, and systems controls. As a result, the payroll system had to be redesigned. If the auditor had participated in the development of this system, such costly redesign might have been avoided. One of the recommendations of this report was, "that HEW's internal audit organization be consulted in the redesign of the system to help ensure that adequate controls are established and adequate audit trails are provided in the system so as to avoid costly changes after the revised system has been installed."

It is not intended that auditors participate as members of the design team. Auditors are not systems designers and their interest in systems design projects must continue to be audit oriented. This precludes them from becoming directly involved in decisionmaking or policy setting, which are functions reserved for agency managers.

It is important for auditors to maintain their independence and objective viewpoint in all associations with design personnel. Auditor participation should be that of consultant and advisor. In this connection, auditors should establish a rapport with the sys-

tem designers and the extent and purpose of the auditors' involvement should be made clear. The advice, comments, and suggestions which are provided on proposed procedures must be viewed only as an attempt to develop the best system possible and should not be construed as formal approval of any part of the system. The advisory role does not relieve the auditor of the ultimate responsibility to evaluate the system and to render an opinion as to its adequacy. Let us not forget that he also will have the continuing audit responsibility after the system is implemented of identifying the need for further refinements to the system and of reviewing its operations to evaluate the continued effectiveness, efficiency, and economy.

The auditor's viewpoint then in participation in systems design projects of the agencies is a dual one. Not only will he be providing assistance to personnel designing the system, but also he will be obtaining valuable information pertaining to the approaches and techniques for future audits of the system. With this viewpoint in mind, GAO is participating in the development of JUMPS by the military services. Personnel from four regional offices (Cincinnati, Denver, Detroit, and Kansas City) have been assigned to work on a full-time basis with the designers of the system at each military finance center.

Responsibility of Internal Auditors

GAO considers internal auditing an essential part of the internal controls of a system and we include in our review of agency control mechanisms, the various arrangements made by management

² U.S. General Accounting Office Report to the Congress, *Need for Improvements in the Automated Central Payroll System of the Department of Health, Education, and Welfare* (B-164031), Jan. 17, 1969.

for internal audits and other forms of inspections, appraisal, and evaluation. The effectiveness of the internal auditing function is a large factor in determining the scope of our audit.³

We are deeply concerned with fostering internal auditor participation in system design projects. Consultation between the systems/computer technicians and the internal auditor during the system development phase helps to assure that adequate controls are established and adequate audit trails are provided in the system so as to avoid costly changes after the system has been installed. The work of the internal auditor should include an evaluation of prescribed policies and procedures related to the accounting for all financial transactions—both receipts and disbursements of public funds—and their compliance with applicable laws and regulations.

Design Assistance

There are several ways in which the auditor can aid in systems design projects. He can provide the designers of the system with information from previous audits in the functional area involved to point out certain areas that are weak and lack adequate control. He can assist the designers also in the analysis of problem areas by performing specific tests during the design phase. In the performance of these tests, he would use auditing techniques and procedures to develop findings and identify their basic causes. This should

be followed up by discussing the problem areas with the systems designers and making constructive suggestions to improve and/or clarify procedures. The primary difference between testing and auditing is the timing. Testing is accomplished *before-the-fact* and provides the designers with an opportunity to correct the condition *before* the system is operating.

It behooves the auditor to take an early interest in the design of a system. In the early stages (system design) functional specialists establish the system specifications to identify input sources and documentation, data flow, processing requirements, output products, system controls, etc.

System Design

The objective of auditor participation in the early stages of the projects are as follows:

- To determine the conceptual adequacy and completeness of the system.
- To ascertain the adequacy of the system internal controls and audit (management) trails.
- To determine the adequacy of system output products.
- To determine whether system interface problems have been adequately considered.
- To determine the adequacy of written guidelines and documentation prepared for operating personnel.
- To determine what computer-assisted audit techniques will be needed.

The best approach for the auditor in this stage involves the concept of data

³ For more information pertaining to basic principles and concepts of internal auditing see *Internal Auditing in Federal Agencies*, U.S. General Accounting Office, 1968.

flow analysis. This concept advocates the evaluation of a specific data element beginning at its point of origin and following it through machine processing to its final resting place. It will be necessary to identify what actions will impact on a given data element and what the impact will be.

Data analyses should be accomplished primarily through a review of the system documentation. Documentation includes system flow charts, program narratives and listings, decision logic charts and tables, manuals, directives, regulations, etc. It is extremely important in the development of any ADP system that documentation be created promptly and revised promptly. Documentation provides the basis for efficient operation of the system and aids considerably in the development of an audit approach, in the determination and preparation of audit techniques, and in the formulation of programs for testing the logic of the system and integrity of the files.

Procedures which are used to establish, change, and delete data elements must be evaluated. This can be accomplished most practically by beginning with the internal records and going back through the various computer programs which process the data elements and continuing to the origin of the data element and input products in the functional activity. Additionally, the procedures used to summarize, analyze, and output the data elements must be evaluated as well as the intended use of the information by the recipient. For the latter procedures, the approach would be to begin with the internal records and move forward through the system.

For each data element, the edit and control features specified in the program must be evaluated. The auditor must determine whether the system provides for a sufficient number of edit and control features to preserve the integrity of the data element being processed. Special emphasis should be given to those programs which will edit input data or will develop controls such as record and transaction counts, hash totals, batch totals, etc.

Audit requirements can be formulated conceptually as soon as the processing logic and decision logic tables have been determined. There will be frequent changes to the system logic, however, and the auditor must be cognizant of these changes so that he can review them in the light of their impact on the audit aspects of the system. When he has gained a thorough understanding of the system concepts and has determined his probable audit requirements, he should make provisions for audit techniques to be built into the system. These techniques may take the form of file interrogation capability, statistical sampling techniques, matching routines, selection of exceptions, etc. It is conceivable that the functional specialists can be convinced that the audit techniques desired will benefit them also. In which case, many of these techniques could be incorporated into the system specifications.

System Programming

The next stage in system design involves adapting the functional design into an efficient system. From the documentation developed by the functional

specialists, computer analysts prepare computer-oriented charts for use of the programmers in the development of the detailed computer instructions. Auditor involvement in this phase of the system's development normally would be not to evaluate the computer programs themselves, but rather to evaluate the results produced by the computer programs through participation in their testing. The objectives in this phase are as follows:

- Determine whether the internal computer processes adhere to and fulfill the operational objectives of the system.
- Determine the actual existence in the processing routines of the controls which were previously identified in the flow charts and other system documents.
- Evaluate the ability and adequacy of the programmed controls and edits to detect error conditions.

To accomplish these objectives, it will be necessary for the auditor to work very closely with the programmers. It is the auditor's responsibility to identify the specific processing routines and controls he wishes to test and to develop for project officials the transaction data required for the test.

System Test

The testing phase normally will be conducted with the system processing "live" data under controlled test conditions at a test location. The tentative audit approach, program, and techniques developed in the earlier stages of development should be tested along with the testing of the system by its developers. The auditor may find it nec-

essary during this phase to revise and/or refine some of his techniques and audit requirements. This is a good time to evaluate the adequacy of procedural documentation and conformance with the specified procedures.

The auditor should pay particular attention during the testing of the system to the problem areas previously identified and he should be alert for other problems which had not been anticipated. He should be concerned with testing the entire system beginning with the creation of input throughout the complete flow of data through the system. Individual computer runs are only one part of the whole system. The test will point out areas which will require particular audit attention later and the depth of audit needed.

Since the purpose of testing is to uncover program and procedural deficiencies, the auditor should monitor the resulting meetings of functional and technical personnel. This will provide him with an opportunity to determine in what manner the solutions proposed to the problems encountered will affect his audit plans. It will enable him also to evaluate independently the results of the testing before the official evaluation report is issued. We must bear in mind that pilot tests probably will be conducted under highly controlled conditions by personnel who developed the system. Consequently, the official evaluation of the results may be somewhat less than realistic.

Internal Controls

In any system, the adequacy of internal controls is of special concern to the

auditor. It is even more important in ADP systems. The centralization of data processing activities and the concentration of functions in ADP systems demand that increased emphasis be given to the effectiveness of internal controls. The evaluation of internal controls during the design of ADP systems must rest on a review of the system documentation to obtain knowledge of how the system is expected to operate and on an accumulation of test data to demonstrate how it will most likely operate. The evaluation should be based upon the effectiveness of the "network of controls," i.e., the location of specific controls within the system which will provide their most efficient utilization in the most economical manner. Accordingly, the auditor's efforts in assisting the designers in this area should be to achieve a proper balance of system controls—one that equates the incremental cost of including certain controls with the risk of loss due to this omission.

The adequacy of the network of internal controls in an ADP system is the key element to be depended upon in determining the reliance to be placed upon the accuracy of the system. The most practical approach for use in evaluating internal controls involves studying the flow of data to identify the critical processing points where controls are necessary and then to determine what controls are considered for these points. Subsequently, it will be necessary to determine that the controls actually have been incorporated into the system and are effective.

Conclusions

The benefits to be gained through internal auditor and GAO participation in agencies' system development projects are significant. Primarily our participation will provide the framework for the expeditious approval of the system and for the performance of an effective and efficient audit of the system after implementation.

In addition, we will know the extent of internal auditor participation in the design project and the audit approach and techniques anticipated by them after implementation of the system. This knowledge will provide the basis for determining the scope of our future audit efforts. Related benefits for both the internal auditor and GAO include the following opportunities:

- To recommend concurrent with the development the inclusion of computer-assisted audit techniques.
- To identify key controls and processing points of the system to which follow-on audit efforts would be desirably directed.
- To identify potential problem areas and provide timely assistance to the designers.
- To develop a trained cadre of auditors for the initial audit of the system and to obtain sufficient information about the system to upgrade the technical capability of other staff members.

In brief, we will *know the system* and thoroughly understand its capabilities and limitations.

Agency Action—A Technique for 7-21504 More Timely Response

By Don Cluff

For some time GAO has been concerned about the length of time between starting an audit, issuing a report draft to the agency for review and comment, and sending the final report to the Congress. In this article the author proposes more use of a recognized but infrequently used procedure for bringing audit findings more promptly to an agency's attention.

"Due Date-itis" had struck our assignment to review transportation practices in the Department of Defense. The job, on which we were lead region, had started in January 1968 and an estimated completion date of September had been set. Suddenly, it was December and we were far behind schedule. The fieldwork was nowhere near completion, the original man-day estimate had more than doubled, and the end was not in sight. Our completion date was getting farther away, rather than closer, and something had to be done.

The Problem

The expansion and extension of the assignment was not due to an absence of findings, but to the exact opposite. We had a plethora of findings, most of which were so significant that we felt

obligated to develop them for inclusion in our planned report so that the Department of Defense could take timely corrective action. After reviewing the situation, it appeared that two of GAO's basic objectives (reporting all significant identified deficiencies and reporting promptly) were conflicting with each other. By expanding our work to include all significant areas, we were delaying the detailed audit, the report, and any corrective action we hoped to obtain from DOD.

At that time, our best estimate of a draft report release date was next December, a full year away. We felt that date was the very best we could hope for and that there was no chance, under existing procedures, of releasing the report to the Department any earlier. Although this delay in reporting appeared

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unavoidable, we were of the opinion that some of our observations had such time importance that the situation was unacceptable.

Selection of Action Technique

It appeared that we had two alternative solutions. The first one—issuing a series of single-subject letters to the Department—was rejected on the basis that it would not be much more timely than the vehicle of a draft report. In our opinion, time devoted to coordinating and consolidating the work of about 12 regional offices into a series of letters, and the time expended processing these letters for release to the Department, was prohibitive and might in the final analysis result in an even greater delay in issuing the draft report.

The second alternative—an oral presentation to the Department—seemed to be a more logical and expeditious method. A conference with agency representatives, in which we would present and discuss all of our observations and tentative conclusions, could be considered a report to the agency; this would effectively reduce our reporting lead time by 8 to 12 months. Such a conference would have the obvious benefit of allowing the Department to institute corrective action much earlier and thereby achieve greater savings and economies.

In our opinion, GAO would also achieve benefits from the conference, although they would not be as significant as the benefits that would accrue to the Department through earlier reporting. One of the more easily recognizable benefits would be an increase in the effectiveness of our manpower

utilization. When we started this assignment, we planned to program detailed reviews in those areas where the Department would not or could not institute corrective action after receiving our draft report. At the time we were giving consideration to briefing the Department, several thousand man-days had been programmed into specific followup reviews in those areas where discussion with field installation commanders indicated that corrective action would not materialize. We believed that the Department's response to our oral presentation would provide a much sounder basis for programming the future work.

In addition, these briefings, by allowing the Department to start its analysis of our observations prior to receiving the draft report, should result in more timely response to our findings. Although we generally request agency replies within 60 days, the GAO Transportation Division had been experiencing delays beyond this time frame of as much as 1 to 3 months in the receipt of such replies. It seemed logical to expect a substantial reduction in, or complete elimination of, these delays if our briefings were detailed enough to permit an in-depth review by Defense.

On December 26, we presented to the deputy director, Transportation Division, our views on giving an oral briefing of our findings to the Department. Because of his extensive knowledge of the area under survey, he recognized that our observations had both merit and significance, and he agreed that they should be brought to the attention of the Department of Defense. He suggested that the Department be fur-

nished—before the meeting—a summary of the matters we wished to discuss.

Because of the preliminary nature of our observations, we did not have our summary referenced, nor had it been through the normal report review process. Accordingly, the transmittal letter contained a statement explaining that our fieldwork had not been completed and that our conclusions were tentative in nature and subject to change as our work progressed. However, we stated that we were prepared to discuss our preliminary findings and to provide detailed examples if desired.

Action Results

On February 27, 1969, about 60 days after we had suggested to our Washington office that the conference be held, we met with Defense officials. The conference was long (about 4 hours), arduous, and—for me—quite disappointing. The Department officials did not agree with many of our conclusions or with many of our facts. However, they did agree to look into the areas in greater detail and to advise us of their position on each of them as soon as possible.

I returned to San Francisco convinced that a large part of the apparent disagreement was the result of poor communications and that Defense simply was unaware of the problems we were unearthing and, consequently, felt that the problems just did not exist. I felt also that this disagreement could be eliminated if we encouraged Defense to take the time and effort to perform a thorough evaluation and if we cooperated with them fully. A great deal of my time during the next 2 months was

spent providing the various interested organizations of the Department with examples and discussing with them in great detail the basis of our tentative conclusions.

On April 24, we received from Defense its tentative position on our observations. The Department indicated concurrence in several of the areas where there had previously been disagreement, and in some areas it had already started corrective action. Subsequently, the Department took action on many of the areas on which its April response indicated disagreement with our findings. It appears that, of about 20 areas presented during the briefing, the Department has now agreed with nine of our conclusions and that it has satisfactorily rebutted our position on four others. We are currently performing detailed reviews in two of the seven areas which the Department did not accept, and we plan to initiate work in several of the areas.

This procedure, which provides agency officials an advance review of our findings, is not a completely new idea, but merely the extension of existing office procedures which recognize the need for advance review by the appropriate agency officials when warranted by the seriousness of the finding. However, existing instructions caution that the extent and formality of the advance review should depend upon our assurance as to the completeness and fairness of our information.

The advantages to both Defense and GAO, of using this technique on the assignment, were significant. Defense has achieved substantial savings through timely changes in shipping

practices and appropriate reductions in tariff rates. GAO has canceled three programmed reviews without expending any time on the audits because the Department's corrective action obviated the need for the reviews. We can utilize this saved manpower more effectively elsewhere. Furthermore, by the time the final report is issued Defense will have been receiving the benefits of our efforts for more than a year.

Although much success on this assignment may be attributed to the interim presentation of findings and problems to agency management levels, possibly a smoother approach and more timely actions could have been achieved if a series of meetings had been organized between GAO and the agency. The sheer number of areas we covered

on this assignment seemed to inhibit agency personnel from assimilating and evaluating all the data presented.

Conclusion

I believe that this technique has been proved to be an effective management tool for GAO and that its frequent employment should be attempted on many of our larger assignments. More timely action by the agency in improving its management can be the immediate result, and the formal report subsequently prepared can be issued sooner and be materially strengthened by disclosing not only what we found and recommended but what action was taken and what benefits resulted. These have always been basic objectives of the GAO.

GAO Seminar on Federal Manpower Programs

By Raymond J. Kowalski

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For some time there has been congressional interest in GAO's expanding its evaluations of the Federal Government's manpower programs. This article describes a GAO seminar held in November 1969 during which recognized experts and authorities in and out of the Government provided orientation on the basic concepts of the Federal manpower programs to top GAO supervisory personnel who will direct reviews of these programs across the country.

A seminar on manpower programs of the Federal Government was held in the GAO Building in Washington, D.C., during the week of November 17-21, 1969. The seminar was presented under the auspices of the Civil Division with *Henry Eschwege*, associate director, and *Richard Woods*, assistant director, serving as moderators. The purpose of the seminar was to provide orientation in the basic concepts of the Federal Government's manpower programs to the top GAO supervisory personnel who are responsible for directing reviews and evaluations of the effectiveness and administrative efficiency of Federal manpower programs across the country.

Since the early 1960s the Federal Government has been increasing the development and implementation of various manpower training programs and activities whereby the Nation's un-

employed and underemployed are sought out and provided with opportunities for skill training and supplementary services to enable them to obtain and hold useful well-paying jobs. For fiscal year 1970, outlays of about \$3.5 billion will be made for manpower training programs and activities. Recently, the Congress has urged GAO to broaden its evaluations of the manpower programs in order to give the Congress independent reviews of the performance of these programs by the executive agencies.

About 60 persons participated in the seminar, including members of the Civil Division, representatives from each of the 16 regional offices of the Field Operations Division, and representatives from the Defense Division and the Office of Policy and Special Studies. Several of the sessions were at-

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tended by the Comptroller General, the Assistant Comptroller General, and the Director and Deputy Director of the Civil Division.

The seminar was opened with remarks by the Comptroller General. Mr. Staats explained the purpose of the seminar, the role and responsibilities of the GAO in making reviews and evaluations of Federal manpower programs, and the interest of the Congress in expanding our reviews of the Federal Government's manpower training programs.

During the seminar the participants heard from representatives of the Department of Labor, the Department of Health, Education, and Welfare (HEW), the Office of Economic Opportunity (OEO), and the Senate Committee on Labor and Public Welfare, as well as recognized experts and authorities outside the Government in the fields of education, economics, and manpower training.

Notes of interest on some of the sessions follow.

Purpose and Objectives of Federal Manpower Programs

Dr. Arnold R. Weber, Assistant Secretary of Labor for Manpower, discussed the purpose and objectives of Federal manpower programs in our society, the nature and unique characteristics of the several component programs, and the organization of responsibilities within the Federal Government for implementing the manpower programs. He also gave a brief historical sketch on the manpower programs.

Dr. Weber said that the early manpower programs of the 1960s dealt with

special programs and special clients. For example, the Area Redevelopment Program which began in 1961 was designed to give aid to depressed areas by attracting industry in order to provide an economic base. He said that the Manpower Development and Training Act of 1962 (MDTA) arose as a result of the great automation scare and was designed to train those displaced from obsolete jobs for job categories in which there was a demand for workers. MDTA programs, therefore, were legislated because of technological change in the job market and were not necessarily directed to those who might be disadvantaged or unemployed.

He said that the most recent manpower program legislation, the Economic Opportunity Act of 1964, was enacted in response to the civil rights revolution and assistance is directed towards disadvantaged members of minority groups: Negroes, Mexican Americans, and others who have been dropped out of the economic system. Dr. Weber expressed the opinion that economic opportunity programs have, up to the present time, been supply rather than demand oriented in that the emphasis has been on job training with little emphasis on job development within the labor market. As a result, most of these programs have in essence been income transfer programs. He said that the Department of Labor is now trying to fuse the opportunities for training and jobs under the MDTA and economic opportunity programs with the Job Opportunities in the Business Sector (JOBS) national program to provide the necessary linkage between the training and the available jobs.

Labor Markets in the United States

Howard Rosen, Manpower Administration, and Howard Stambler, Bureau of Labor Statistics, Department of Labor, discussed the nature and composition of the labor market in the United States. Dr. Rosen presented a very interesting analysis of the nature of the market and the various ways in which it operates. He explained that the market is very large (covering almost 79 million persons) and is a dynamic and highly elastic market due to population changes, shifts in consumer demand, technological change, and continuing research and development. Mr. Stambler complemented Dr. Rosen's remarks by providing numerous statistical breakdowns of the labor market and its participants.

Discussions by Other Federal Participants

The various other representatives from the Departments of Labor, HEW, and OEO gave presentations on the conceptual basis for various manpower training programs such as the Job Corps, the Neighborhood Youth Corps, the Job Opportunities in the Business Sector (JOBS), the institutional and on-the-job training programs under the MDTA, the Opportunities Industrialization Centers and the Comprehensive Work and Training Programs such as the Concentrated Employment Program (CEP) and the Work Incentive Program (WIN). They also discussed the role of the Federal-State employment service in the implementation of the Federal manpower programs, and the program evaluation and management

data systems developed to review, evaluate, and manage the programs.

Discussions by Counsel for Senate Committee on Labor and Public Welfare

William Bechtel, Counsel for the Subcommittee on Employment and Manpower, Senate Committee on Labor and Public Welfare, discussed matters of concern and interest to the Congress relating to Federal manpower programs and, in particular, what the Congress would like GAO to review. He said that the Congress still has a deep commitment to finding solutions to poverty; however, there is growing skepticism in some quarters as to the effectiveness of manpower programs. Mr. Bechtel suggested that one way GAO could help is to provide the Congress with an independent evaluation of the individual programs, as well as evaluations and comparisons of the effectiveness of the various manpower programs.

Mr. Bechtel stated that a particular area of interest to the Congress is whether the manpower programs are reaching the right target population. He said Congress is interested in knowing whether it is possible that manpower programs are being directed too much to the unemployed and forgetting or ignoring the disadvantaged or underemployed who are working but may not be earning enough to rise above the poverty level.

Discussions by Other Authorities on Manpower Programs

The participants at the seminar heard various noted experts and authorities from outside the Federal Government

FEDERAL MANPOWER PROGRAMS

speak on different aspects and problems of Federal manpower programs. The speakers and subjects discussed were as follows:

Dr. John J. Corson—Dr. Corson, formerly Director of the U.S. Employment Service and now a Professor of International Affairs at Princeton University and a private consultant, spoke on the changes in our economy and labor market which result in a need for the Federal manpower training programs. Dr. Corson described these changes as technological, industrial, occupational, geographic, educational, population, and the increasing influx of women into the labor force and market.

Dr. John T. Dunlop—Dr. Dunlop, Professor of Economics, Harvard University, discussed the Nation's commitment to manpower programs, the basis for this commitment, and the Federal Government's policies relating to manpower programs. Dr. Dunlop, in essence, believes that much of the manpower policy has been directed to the exterior labor market—movement from firm to firm, rather than to the internal labor market—upgrading within a firm. Dr. Dunlop also discussed various tests he believes are needed to evaluate manpower programs.

Dr. Sar A. Levitan—Dr. Levitan, who is a Director of the Center for Manpower Policy Studies at George Washington University, discussed problem areas in present approaches to manpower training programs, with emphasis on changes needed in direction of effort during the 1970s. Dr. Levitan stated that the lessons learned in the past show that training the hard-core is not enough and that more supportive

services are needed. Dr. Levitan also expressed the need for more emphasis in evaluations as to which programs are effective in meeting their objectives.

Dr. Samuel B. Marks—Dr. Marks, Director of the Skill Achievement Institute, a Department of Labor experimental and demonstration project, spoke on the problems involved in promoting the upgrading of low-skill workers. Dr. Marks discussed the failures and successes encountered in his project to try to persuade managements to restructure their organizations and provide training to permit upgrading and promotions of the underemployed within their firms.

Dr. Jacob J. Kaufman—Dr. Kaufman is Professor of Economics and Director of the Institute for Research on Human Resources at the Pennsylvania State University. Dr. Kaufman spoke on vocational education and training in the United States and discussed some of the inadequacies of our present school systems including the vocational education portion. He cited the need for better relationships between the academic and occupational courses to improve the educational interests of the majority of students.

Dr. Seymour L. Wolfbein—Dr. Wolfbein, formerly Deputy Assistant Secretary of Labor for Economic Affairs and now Dean of the College of Business at Temple University, spoke generally on the problems involved in dealing with unemployment among youth especially those teenagers who lack the necessary academic and technical status or personal background to compete in the job market. Dr. Wolfbein discussed trends in the labor market for 1970 and

pointed out, among other things, that one out of three persons in the population of the United States was not yet born 15 years ago and, as a result, the average age of the work force of the future will be reduced. Additionally, he stated that one of every seven new workers will be black.

Dr. Alvin Schorr—Dr. Schorr is Professor of Social Policy and Director of the Income Maintenance Project at Brandeis University and spoke on the problems of welfare recipients in relation to work. He discussed problems which will be encountered by the Work Incentive (WIN) program regarding the employment of persons receiving Aid to Families with Dependent Children. Dr. Schorr foresees problems in the WIN program particularly regarding the provision of child care services because of its limited availability and high cost in most areas. He also suggested that the WIN program, in

some areas, could provide participants more money and security than some persons receive working full time.

Dr. Garth Mangum—Dr. Mangum, who is a Director of the Center for Manpower Policy Studies at George Washington University and Professor of Economics at Utah University, discussed the problems and techniques of evaluating the effectiveness of Federal manpower programs. He stated that educators have evaluated the program inputs, others have made judgments on how the programs have been working, but no one has fully evaluated what happens after a participant leaves a program in order to determine whether there has been an improvement in employment and earnings. Dr. Mangum made observations on methods of sampling, using control groups, interviewing, and evaluating the data obtained in reviews of Federal manpower programs.

Validity of Information

“I’m never satisfied—whether it has to do with drugs or school desegregation or whatever. I get very uneasy about some of the data I see and I very often ask for more or send back to get additional data, or question how accurate or relevant the data is that I have. That’s one of the single toughest problems in HEW—or indeed, in all Government, I think—to make sure that what you have is current, is fresh and is on target.”

ROBERT H. FINCH,
Secretary of Health, Education, and Welfare.
Quoted in *Government Executive*, February 1970.

Feasibility of Applying Uniform Cost Accounting Standards to Negotiated Defense Contracts

On January 19, 1970, the Comptroller General of the United States released his report on the GAO study on this subject which had been directed by the Congress when it extended the Defense Production Act in mid-1968.

The report is a very significant contribution to the literature of accounting principles and standards as they relate to private industry accounting practice and the utilization of cost data in the negotiation and administration of contracts for Government procurement of goods and services.

The financial importance of negotiated procurement in Government operations is underscored by the fact that in the fiscal year 1969 total Government procurement amounted to \$53 billion, of which \$45.9 billion, or 86.6 percent, was negotiated (i.e., not formally advertised).

Conclusions and Recommendations

Because of the significance of this study, the specific conclusions and recommendations recorded in the report are set forth here.

1. Feasibility

It is feasible to establish and apply cost-accounting standards to provide a greater degree of uniformity and consistency in cost

accounting as a basis for negotiating and administering procurement contracts.

- It is not feasible to establish and apply cost-accounting standards in such detail as would be necessary to ensure a uniform application of precisely prescribed methods of computing costs for each of the different kinds of cost, under all the wide variety of circumstances involved in Government contracting.
- Emphasis should be directed to disclosure, consistency, and establishment of criteria for the use of alternative cost-accounting methods.
- To the extent that contractors or divisions of contractors could be grouped on the basis of similarities in the nature of their operations or in contracting situations, the standards for such groups could be stated in more specific terms.
- The cost-accounting methods to be used in the reporting of costs in support of the bid proposal and interim administrative actions and in the settlement of the contract or contracts of a particular contractor could be specified in greater detail by the use of advance written disclosure agreements. In essence, these agreements would further elaborate upon the cost-accounting standards and thus would better ensure a mutual understanding as to the cost-measurement methods to be employed.
- More explanatory material and better criteria for identifying and measuring direct and indirect costs and for the allocation of indirect costs should have high priority in establishing cost-accounting standards in the interest of providing a better understanding among the users of cost data as to their meaning and significance.

2. Coverage

Cost-accounting standards should not be limited to Defense cost-type contracts. They should apply to negotiated procurement contracts and subcontracts, both cost type and fixed price. They should be made applicable Government-wide.

3. Benefits and costs

Cumulative benefits from the establishment of cost-accounting standards should outweigh the cost of implementation.

- Cost-accounting standards for contract costing purposes should evolve from sound commercial cost-accounting concepts and should not be incompatible with generally accepted accounting principles. Therefore extensive modifications to present accounting systems would not seem to be necessary in most cases. Although some modifications to existing systems may be necessary, we do not see the need for new or separate accounting systems.
- Costs which might be incurred directly by the Government will depend largely on:
 - a. The capabilities of the agency to which the responsibility for establishing and maintaining cost-accounting standards is assigned.
 - b. The recognition of the need for continuing research into the use of cost-accounting standards to keep pace with changing technologies.
 - c. The cooperation of the accounting profession, of industry, and of other Government agencies with the designated agency.
- Cost which might be incurred by contractors in implementing cost-accounting standards, whether they are ultimately borne by the Government or by the individual contractor, will vary from contractor to contractor and will depend largely on:
 - a. The cooperation and capabilities of individual contractors' organizations.
 - b. The extent to which present cost-accounting and management-information systems can produce cost data for

negotiated contracts in accordance with cost-accounting standards.

4. Responsibility for development

New machinery should be established for the development of cost-accounting standards. The objective should be to adopt at an early date the standards of disclosure and consistency and to strive for the elimination of unnecessary alternative cost-accounting practices—alternatives not required for equitable recognition of differing circumstances.

- This should be a gradual process building upon past experience.
- Considerable research in actual operating situations will be necessary and should be done in close cooperation with contractors, procuring agencies, and professional accounting organizations.
- Cost-accounting standards should not be developed under the same mechanism or procedures now used for section XV of ASPR. Since they should be applied to procurement by all Government agencies, it is important that new machinery be established to develop the cost-accounting standards and to perform the continuing research and updating that will be required for effective administration. Cost-accounting standards should be issued as a separate document rather than as a part of or amendment to FPRs or to ASPR. However, such standards could be incorporated by reference in those regulations.
- Periodic reports to the Congress should be made to keep the interested members and committees informed as to the progress and status of the assignment.

5. Need for disclosure

Contractors should be required to maintain records of contract performance costs in conformity with cost-accounting standards and any approved practices set forth in a disclosure agreement or be required to maintain the data from which such information could be readily provided.

Direction and Staff of Study

The GAO study was made under the direction of *William A. Newman, Jr.*,

Special Assistant to the Comptroller General and former Director of the Defense Division of GAO. He was assisted by:

- Ralph M. Kee*, Assistant Director
- Raymond J. Poskaitis*, Assistant Director
- Charles F. Carr*, Supervisory Accountant
- Irving Martin*, Supervisory Accountant
- Jon D. Sell*, Accountant

Origin of Study

The conclusion of the Congress that a feasibility study should be made evolved largely from testimony in recent years by Admiral Hyman G. Rickover, Deputy Commander for Nuclear Propulsion, Department of the Navy, as to the need for tighter accounting requirements on Government contractors. His oft-expressed view, based on his experiences with contractors, was that a most serious deficiency in Government procurement practices was the lack of uniform accounting standards which contractors were required to observe.

Illustrative of his views are the following remarks he made in testifying before the House Banking and Currency Committee in April 1968 on the extension of the Defense Production Act. The admiral recommended that:

* * * your committee require, by law, the establishment and use of such standards. Without uniform standards of accounting for defense contracts, neither Congress, the executive agencies, program managers, nor the taxpayer will ever know what complex military equipment costs and what profit the Government is actually paying.

In support of his proposal. Admiral Rickover testified as to the weaknesses,

as he saw them, in existing procedures that could be corrected through uniform accounting standards. He stated:

Profit is only a part of the real income to a company. In many cases the company benefits through overhead as well as from profit—sometimes better, since profits are taxed and overhead is not. Overhead charges usually constitute a great part of the cost on Government contracts. It is here that companies use much ingenuity in making expenditures for plant repairs and rearrangements, tools, manufacturing control techniques, computer programs and other items—items which can be charged to overhead but which actually serve to improve the company’s commercial capability.

A company’s profits are taxed about 50 cents on the dollar. But, an overhead dollar is not taxed, and is therefore worth twice as much as a profit dollar when it is used to improve a company’s business. By charging these improvements to overhead the company reduces the amount of income tax it must pay. The American public is the loser.

* * * * *

It should be clearly understood that under existing procurement rules it is not possible to tell just how much it costs to manufacture equipment or just how much profit a company actually makes—without spending months reconstructing the supplier’s books. Large additional profits can easily be hidden just by the way overhead is charged, how component parts are priced, or how intra-company profits are handled. The company may report as cost what actually is profit.

* * * * *

* * * Industry, naturally, does not favor uniform accounting standards. Without them, they have much greater ability to exploit “generally accepted accounting principles” and thus increase profits on Government contracts.

In my opinion, the lack of uniform accounting standards is the most serious deficiency in Government procurement today. There is no reason why the Government should have to spend years arguing whether certain costs at each contractor location conform to “gen-

erally accepted accounting principles;" there is more important work to be done.

These views and those in a similar vein made a sufficient impression on the Congress in 1968 that it directed the Comptroller General to study the feasibility of applying uniform cost accounting standards in negotiated prime and subcontracts defense procurements of \$100,000 or more.¹

Content and Organization of Report

The full report on the GAO feasibility study is 558 pages long, organized as follows:

- A relatively brief summary of 23 pages containing introductory information on why the Congress required the study to be made, statistics on Government procurement, and information on existing accounting guidelines for Defense procurement; a discussion of potential benefits and limitations of cost accounting standards; some major cost accounting problem areas; and the conclusions and recommendations.
- Six appendixes—
 - I. Contains the specific language of the law directing the study; some definitions of terms relating to cost accounting standards; and a description of the nature and scope of the study.
 - II. Contains excerpts from section XV of the Armed Serv-

ices Procurement Regulation which sets forth the existing cost principles and procedures for guidance in Department of Defense procurement operations.

- III. Discusses major cost accounting problem areas encountered in Defense procurement such as practices in distinguishing between direct and indirect costs, allocations of indirect costs, and capitalization of tangible assets. This appendix also cites briefly numerous specific cases involving the problem areas discussed.
- IV. Summarizes significant comments received on a preliminary draft of the feasibility study report from 12 industrial associations, five professional accounting associations, and 10 Federal agencies.
- V. An evaluation of responses to a GAO questionnaire which was sent to over 2,000 representatives of industry. This questionnaire was designed to obtain information on current cost accounting practices and other information pertinent to the feasibility study. The evaluation of these responses was prepared by Professor Robert K. Mautz of the University of Illinois and his associates Professor K. Fred Skousen of the University of Minnesota and David L. Smith of the University of Illinois.

¹ See *The Federal Accountant*, September 1968, pp. 94-110, for information on the legislative history of the amendment to the Defense Production Act of 1950 which provided for the feasibility study.

VI. Contains a research study entitled "Standards for Cost Analysis" prepared by Professor William J. Vatter of the University of California. This study addresses the question of what cost accounting standards are or should be and how they would affect the processes of cost analysis.

The full report has been published as a committee print by the House Banking and Currency Committee.

Other Highlights of Report

In addition to the conclusions and recommendations, the report contains much notable information on this complex subject. Some examples:

Congressional Concern with Need for Standards

House Report 1455, of May 23, 1968, on the bill which originally contained proposed legislation on the subject indicated that accounting standards were needed because of

- Substantially increased costs of procurement.
- Difficulties in having contractors carry out defense work under contracts providing adequate safeguards to ensure against excessive profits.
- Government agencies having to accept less favorable contract terms.

During the Senate debate, it was brought out that

- Cost accounting principles followed have a large impact on the determination of contractor costs and that a number of important

cost elements can be treated in different ways.

- Once a method of treatment is selected, the costs may be allocated to Government and other contracts in a variety of ways.
- In the absence of uniform principles, Government procurement officials have the burden of evaluating contractor practices without the guidance of authoritative support for use of alternatives in specific circumstances.
- There is a growing awareness within the accounting profession itself that more uniformity is needed.

Inadequacy of Existing Cost Accounting Guides

Section XV of the Armed Services Procurement Regulation contains general cost principles and procedures for the determination and allowance of costs in the negotiation and administration of cost-reimbursement-type contracts and contains guidelines for use, where appropriate, in evaluating costs of certain fixed-price-type contracts. This guidance is inadequate because:

- Frequent reference is made to generally accepted accounting principles and/or regulations of the Internal Revenue Service, neither of which is intended to serve contract costing purposes.
- Specific criteria for the use of alternative accounting principles and indirect cost allocation methods are lacking.
- It is of limited applicability, since it is mandatory for only cost-reimbursement-type contracts.

Potential Benefits of Standards

By providing a common framework for the buildup of prospective and actual cost of a product or service in the light of the environment in which the costs are accumulated, cost accounting standards could supply the guidance, support, and coordination required for better understood cost estimates and reports of actual costs.

Other benefits cited:

- Facilitate the preparation and reporting of cost information by contractors and its audit and evaluation by the Government.
- Help ensure that costs on a given contract are reported on a consistent basis and are comparable with (1) costs originally proposed or projected and (2) costs cited in financing arrangements, reports, change orders, reimbursement claims, price redeterminations or adjustments, and termination claims.
- Enable those responsible for contract negotiation, administration, and settlement to reach a common understanding of contract terms and then hold contractors to report in accordance with such terms.
- Improve communications between the Government, the Congress, industry, and the public generally.
- Minimize controversy between the Government and contractors in the administration and settlement of contracts.

Limitations of Standards

The report makes it clear that cost accounting standards could not, by themselves, ensure that contracts will be

effectively negotiated, administered, and settled. It also notes that such standards could not ensure that costs will be determined in accordance with those standards.

The report also emphasizes that because of the complexity and diversity of the operations of different contractors, cost accounting standards cannot be stated in sufficient specificity to recognize all cost accounting problems that can arise from such diverse operations. Because standards must be stated somewhat broadly, they cannot anticipate and provide specific guidance for all types of cost accounting questions that might exist.

Major Cost Accounting Problem Areas

Some of these problem areas, identified from administrative and audit experience, were highlighted. For example:

- In reporting to the Government on both proposed and incurred costs, contractors may select from alternative accounting methods without specific criteria governing such selection.
- Contractors sometimes present cost data in pricing proposals differently from the way they record their cost of performance.
- Inconsistencies in distinguishing between direct and indirect costs and in the allocation of indirect costs by contractors are among the most common problem areas. The report notes that the allocation of indirect costs is one of the most controversial areas in cost accounting for Government contracts and

that it is not a problem that can be solved by simple or rigid rules. Indirect costs cannot be as accurately assigned as direct costs; but they must be based on some demonstrable relationships between the reasons why costs are incurred and the cost objectives to which they are assigned.

Need for Disclosure of Cost Accounting Methods

Recognizing that cost accounting practices followed in such problem areas as distinguishing between direct and indirect costs and allocating indirect costs can vary because of the diversity in methods of operation by different contractors, the report notes the need for an advance disclosure agreement between the Government and contractor which would identify proposed accounting methods and require their consistent application.

Meaning of Terms

Because the law directing that the GAO feasibility study be made introduced terms that had no generally understood or agreed upon meaning in accounting literature or practice, it was necessary early in the study to define these terms. Thus:

Cost accounting standards relate to assertions which guide or point toward accounting procedures or applicable governing rules. They embrace "cost principles" which suggest self-evident truths and axioms which have a degree of universality and permanence and which underlie or are fundamental to the derivation of cost accounting standards. They embrace general rules of cost accounting procedure and criteria

for application of alternative procedures. They are *not* the same as standardized or uniform cost accounting.

Cost accounting standards shall be deemed to be *uniform* when stated with the goal of achieving comparability, reliability, and consistency of significant cost data in similar circumstances and with due regard to the attainment of reasonable fairness to all parties in such circumstances.

Evaluation of Questionnaire Responses from Industry

The law directing the feasibility study required that GAO consult with that segment of American industry engaged in defense contracting. Accordingly, a major part of the study involved the devising of a comprehensive questionnaire designed to obtain from selected industrial companies information on current cost accounting practices and comments on the feasibility and usefulness of cost accounting standards.

The questionnaire was sent to over 2,000 companies. Responses were sent directly to Professor Robert K. Mautz of the University of Illinois, a consultant to GAO, who directed the analysis and evaluation of them and prepared a comprehensive report which was made a part of the GAO report as appendix V.

The principal conclusions reached by Professor Mautz growing out of this part of the feasibility study were (emphasis supplied):

--*It is feasible to develop and establish an authoritative set of propositions, general in nature yet definitive in providing for*

the accumulation and reporting of costs of contracts or other cost objectives.

- Considerable difficulty* must be anticipated in stating such a set of propositions so that they are meaningful to the variety of contractors who will be affected by them, so that they are applicable with reasonable equity in the variety of circumstances in which contracts are performed, and so that their imposition upon contractors does not reduce the availability of necessary products and services to the Government.
- Such a set of propositions can make a *significant contribution* to contract cost determination and reporting. Certain aspects of cost determination, however, are not susceptible to control by accounting practices alone but require the cooperation of those responsible for contract negotiation, contract administration, and cost accounting activities.

Other notable observations on cost accounting standards made in the report on evaluation of questionnaire responses:

- Cost accounting standards by themselves cannot assure that contract costs will be stated properly.
- Cost accounting standards can provide useful guides to those who, in negotiating, administering, or settling contracts must use accounting data or make accounting decisions.
- Cost accounting standards stated in general terms may be so subject to individual interpretation as to be of little benefit to those seeking control over cost accounting practices.
- Greatest care must be exercised in the wording of cost accounting standards. Any attempt at the development of an integrated set of Uniform Cost Accounting Stand-

ards should provide for an adequate hearing of contractors' point of view. Otherwise, it is unlikely that the great variety of situations, conditions, and problems experienced in Government contracting can be given the consideration deserved.

- Any simple statement of a few broad principles is unlikely to be effective unless supported by enough explanatory matter to explain terms used, to deal with specific variations, and to provide for alternative circumstances.
- It is possible to develop standards which are so general in nature as not to provide any real guidance for or control over cost determinations. It is also possible to develop standards in such specific terms that they are impractical of application to the wide variety of situations encountered by industry in determining costs under Government contracts.

The Vatter Study

Another valuable section in the GAO feasibility study report is appendix VI which contains the study entitled "Standards for Cost Analysis" by Professor William J. Vatter of the University of California, a GAO consultant.

This study examines from a conceptual viewpoint what cost accounting standards are or should be and how they would affect the processes of cost analysis, especially in the determination of product or activity costs. The written report on this study is a valuable contribution to the literature of cost ac-

counting. It is important not only because of its relationship to the GAO feasibility study but because it fills a gap that has been a serious weakness in cost accounting concepts. As Professor Vatter stated in transmitting his report to the Comptroller General:

Although there are many textbooks on cost accounting, they tend to reiterate methods without examining them critically. There have been few attempts to review the logical structure of cost accounting in any theoretical or normative sense. This report is intended to fill that need.

Press Briefing

Because of the technical complexity of the subject matter of the feasibility study report, the Comptroller General, *Elmer B. Staats*, met with representatives of the press just before the report was issued to assist in promoting public understanding of the conclusions reached and recommendations made. This was the first major press briefing ever conducted by a Comptroller General on a GAO report.

The briefing was held on January 16, 1970, in the GAO Building, Washington, D.C., and was attended by 20 representatives of the press.

Other GAO officials in attendance to assist in answering questions were: *Robert F. Keller*, Assistant Comptroller General; *William A. Newman, Jr.*, Special Assistant to the Comptroller General, and *Ralph M. Kee*, Assistant Director; *E. H. Morse, Jr.*, and *Robert L. Rason*, Office of Policy and Special Studies; *Charles M. Bailey* and *James H. Hammond*, Defense Division; *Roland J. Sawyer*, Information Officer;

and *Paul G. Dembling*, General Counsel.

Some of the explanatory remarks of especial interest by Comptroller General Staats:

- The report * * * represents, in my opinion, and I think the opinion of most people in the accounting profession in the Government, probably the first comprehensive—certainly the most comprehensive—effort to assess the feasibility of establishing common standards in the costing of Government contracts.
- The final report does emphasize the importance of a gradual approach, building upon the beginning that has already been made in the Armed Services Procurement Regulation.
- We have emphasized particularly the elements of consistency and disclosure, both of which we would regard as standards.
- Congress asked us to make a finding of feasibility, and there are those who would say that our report goes beyond this and makes the argument for standards. We recognize this point—that you cannot really make a judgment of feasibility unless you can identify sufficiently specific problems that standards might potentially at least solve. If there are no problems, it wouldn't be feasible to establish standards.
- I would like to emphasize that we would not see standards as a solution to all of our problems in contract negotiation and administration. I don't think any of us here in the General Accounting Office would even be willing to state that this is the most important problem. But it is an important subject—particularly in view of the intensive use of negotiated contracts.
- We feel that if standards are feasible and developed, then we should make it possible to administer the Truth-in-Negotiations Act more effectively than it is now. But we also recognize that there are many other factors which bear heavily upon the problems involved in cost

growth or cost overruns. While this will play a part, it may or may not be the most important part.

Congressional consideration of this report and related legislative proposals

will be discussed in future issues of the *Review*.

E. H. Morse, Jr.,
DIRECTOR, OFFICE OF
POLICY AND SPECIAL STUDIES.

“Accounting is an art of a sort and, as such, it is not susceptible to the orderliness of a physical science.”

ROBERT M. TRUEBLOOD,
The Journal of Accountancy, January 1970.

Annual Report of Second Comptroller of the Treasury—1855

Reflective of the concerns with financial control of Federal operations in a simpler day is the annual report for 1855 of the Second Comptroller of the Treasury. In the 1850s, the predecessor functions of the Comptroller General of the United States and the General Accounting Office were a part of the Treasury Department, organized around the following officials:

The First Comptroller of the Treasury whose duties included—

Examination of accounts settled by the First and Fifth Auditors and certifying the balances (the First Auditor handled Treasury Department accounts and the Fifth Auditor handled State Department accounts),
Countersigning warrants, and
Superintending recovery of all debts to the United States.

The Second Comptroller of the Treasury whose duties included—

Examination of accounts settled by the Second, Third, and Fourth Auditors and certifying the balances (these auditors handled War and Navy Department accounts and Indian accounts),
and

Countersigning warrants.

This arrangement of audit and settlement responsibilities was provided in

the act of March 3, 1817 (3 Stat. 366) and set the pattern of financial administration for most of the 19th century. Prior to the 1894 overhaul with the passage of the Dockery Act, a few statutory changes were introduced such as setting up a Sixth Auditor in 1836 to handle postal matters and establishing a Commissioner of Customs in 1849 who in effect became a “third comptroller.”

The file copy of the 1855 annual report of the Second Comptroller, then John M. Brodhead, is in precise handwritten form characteristic of that typewriter age (Vol. 19, Decisions of the Second Comptroller, in GAO Law Library).

The report is dated October 18, 1855, and is addressed to James Guthrie, Secretary of the Treasury.

Some excerpts of interest:

Among the improvements of the office, it may be mentioned, that Books of Differences have been opened in which statements are entered, exhibiting all the differences existing between the accounts of disbursing officers and the official settlements of the same, with the explanatory reasons for such differences. The preparation of these books, and the subsequent entries have imposed some additional work upon the Clerks; but the adoption of the plan has proved judicious. The books are very useful in the settlement of accounts in tracing suspended vouchers, and for reference in regard to contested items.

* * * * *

By the 2d Sec. of the "Joint Resolution for the relief of Pursers, Ac.," approved March 3, 1948, (9 Stat. 419) it is provided that every disbursement of public moneys, or disposal of public stores, made by order of any commanding officer of the Navy, which shall be objected to by the accounting officers of the Treasury in the settlement of the accounts of any disbursing officer, shall, nevertheless, be allowed to such disbursing officer, and the commanding officer by whose order such disbursement or disposal was made, shall be held accountable for the same.

This enactment has been interpreted by the Pursers as authorizing them to advance on the order of the commanding officer, any or all of the public funds in their possession; and some of the commanders availed themselves of this indiscreet concession to their supposed authority, to direct considerable sums to be put into their hands, of which no account whatever has been rendered, and which was doubtless expended for private purposes. So serious a misconstruction of the law, which set at naught the guards so carefully thrown around the public money by acts of Congress and executive regulations, which absolved a particular class of officers from the liabilities of the 16th Sec. of the Act of Aug. 6, 1846 (the Independent Treasury Act); which tended to imperil the due performance of Naval service by diverting the funds provided for the expenses of the ship and the wages of the crew—to private objects; and which opened a wide door for collusion and fraud, could not be acquiesced in for a moment. It was clear, in my judgment, that Congress presupposed an indebtedness, and intended to cover only disbursements of a public nature, but which were not sanctioned by existing laws or regulations; as for purchases of unauthorized supplies, or for hire of unauthorized employe's but not to screen the disbursing officer from all responsibility for loans and advances made by order of the commanding officer, nor to empower the latter, for his private convenience or necessities, to withdraw funds from their legitimate application to the public service.

* * * * *

For many years past great labor and perplexity have occurred in ascertaining the re-

spective liabilities of sureties in suits upon official bonds, where more than one bond has been given. To obviate such difficulties in future, directions have been given in a circular addressed to each bonded disbursing officer whose accounts come under the jurisdiction of this office, that separate and distinct accounts with the United States shall be kept under every bond given, and that in the caption of each quarterly account, *the date of the bond* under which it is rendered, shall be stated. The balance, if any, due to the United States, is not to be carried into the second or subsequent series rendered under a new bond; but the account is to be closed by the payment of the balance found to be due; and in making his deposits the officer is required to designate by the date of the bond the account to which the sum is to be applied, and also the appropriation to which it is refunded. It is also brought to the attention of the disbursing officers that additional or cumulative bonds do not operate to release the sureties on prior bonds, though a settlement under each is necessary in order to fix the times when successive sureties become liable, and to ascertain the amount of their liability.

The good effects of this rule are already perceptible, and it is confidently believed that it will not only relieve the accounting officers and the Solicitor of much labor and embarrassment, but will tend to save the Government from pecuniary loss resulting from doubt as to what sureties should be held responsible for the defalcation of their principal.

* * * * *

It is a source of great satisfaction to me, that in reviewing the operations of this office for the last fiscal year, I can speak in terms of well deserved praise of the gentlemen employed in it, in the transaction of the public business, who have performed their duties cheerfully, ably and promptly. To their intelligence and faithfulness is the office essentially indebted for its present excellent condition. No branch is in arrears, and not a single case, requiring, or presented for, my personal examination and decision, remains adjudicated.

ARTHUR S. FLEMMING AWARD



Mr. and Mrs. Gregory J. Ahart with the Comptroller General, Elmer B. Staats, before the Fleming Award ceremonies.

Arthur S. Flemming Award

Gregory J. Ahart, deputy director, Civil Division, was selected to receive the Arthur S. Flemming Award as one of the Ten Outstanding Young Men in the Federal Government for 1969.

These awards were presented to the 10 winners by the Honorable Potter Stewart, Associate Justice of the United States Supreme Court, at a luncheon held in the Grand Ballroom of the Mayflower Hotel, Washington, D.C., on February 19, 1970. The main speaker for the occasion was the Honorable George W. Romney, Secretary of Housing and Urban Development. Over 100 persons from GAO attended.

Arthur S. Flemming was a former chairman of the Civil Service Commission and the first Secretary of Health, Education, and Welfare.

The awards program is administered by the Downtown Jaycees of Washington, D.C. The program was established to honor outstanding young (under age 40) men in the Federal Government and to recognize exceptionally meritorious work; to attract top-caliber young men to Government service; to encourage high standards of performance; and to enhance appreciation of Government service and the opportunities and responsibilities that it presents.

Among the other award winners was Neil A. Armstrong, astronaut and first man to set foot on the moon during the mission of Apollo 11 in July 1969.

Mr. Ahart was cited in the administrative category of awards by the judges:

For his outstanding performance in planning, programming and carrying out the accounting, auditing and investigative functions of the Government (*sic*) Accounting Office for the Federal Government, the Corps of Engineers, the District of Columbia Government, and the legislative and judicial branches of the Government, and for his comprehensive evaluation of the economic opportunity programs.

In recommending Mr. Ahart for one of these awards, the Comptroller General, *Elmer B. Staats*, noted his effectiveness and vigor as a leader and administrator, his intellectual capacity, his complete objectivity, and his distinguished performance in dealing with congressional committees and their staffs.

Mr. Ahart is a graduate of Creighton University (1957), a certified public accountant (Nebraska), and a member of the bar of Virginia. He joined the General Accounting Office staff in 1957. Earlier honorary GAO awards to Mr. Ahart include the Meritorious Service Award in 1961 and the Career Development Award in 1967.

Previous GAO winners of the Flemming Award were:

- 1951—Ted B. Westfall, Director of Audits.
- 1960—John P. Abbadessa, Deputy Director, Civil Accounting and Auditing Division.

Annual Report of Comptroller General—1969

from debtors of the United States.

Legal work: Handled about 4,900 legal decisions and other legal matters, including 794 legislative and legal reports to committees and Members of Congress.

Savings attributable to GAO work:

\$187.6 million, of which about \$65 million are of a recurring nature. The annual report summarizes these savings by major categories.

GAO operating expenses: \$59.9 million, of which \$53.3 million consisted of salaries and related personnel costs.

Personnel at June 30, 1969: 4,544, of which 2,663 were professional accountants and auditors.

Measuring GAO Accomplishments

In testifying before the House Appropriations Committee on the GAO budget request for 1971, the Comptroller General provided the following general policy statement on measuring GAO accomplishments and effectiveness:

It is difficult to translate the effect of GAO activities in terms of improvement of the operations of the Government. Most of the recommendations which flow from our work cannot be readily reflected in terms of dollar savings. For example, about 20 percent of our professional staff effort is involved in rendering direct assistance to the Congress—none of which is reflected in terms of dollar savings. Moreover, we do not attempt to reflect dollar savings except where these can be readily measured. In brief, we do not under-

The annual reports of the Comptroller General which are made to the Congress as required by the Budget and Accounting Act, 1921, contain a wealth of information on the far-ranging operations of the General Accounting Office. And they provide a sharp contrast to earlier annual reports of the accounting officers of the Government (see p. 42).

The 1969 report of nearly 400 pages transmitted to the Congress on January 5, 1970, is no exception. Some highlights:

Audits made: About 2,000 audits and reviews of selected Government activities and programs throughout the United States and in 45 foreign countries.

Reports issued: 1,023, of which 177 were addressed to the Congress, 204 went to congressional committees, and 642, mostly in the form of letters, were sent to Federal agency officials. The annual report contains a complete listing of all of these audit and investigative reports.

Transportation payments: Audited over 9.5 million freight shipments and passenger movements for which the Government paid over \$2.5 billion.

Claims settled: 18,690 general claims against the United States for amounts totaling \$70.1 million and 9,750 claims by the United States.

Debts collected: Over \$2.8 million

take to test our effectiveness in terms of our ability to increase our dollar savings from year to year. Rather, our objective is to concern ourselves with indicated problem areas or potential problem areas, irrespective of the amount of savings which we might anticipate would flow directly from our work.

Nevertheless, we feel that it is useful to maintain a record of readily translatable dollar savings resulting from actions taken by Federal agencies through the adoption of recommendations brought to the agencies' attention through GAO audits. For fiscal year 1969 these amounted to \$187.6 million in additional revenues or savings, including:

- \$20.4 million in refunds and collections.
- \$65 million, representing one year's value of savings and revenues which we expect will recur in future years, and \$102.2 million in nonrecurring savings in planned or current programs.

Approximately \$95 million of the total savings and revenues were achieved through improvement of Government supply management and procurement.

Reorganization Plan No. 2 of 1970

Reorganization proposals affecting the Bureau of the Budget are always of interest to GAO. The two agencies were originally created by the same act of Congress—the Budget and Accounting Act, 1921. In addition, they have common interests and objectives in promoting good financial management systems and practices in the Federal agencies and have worked cooperatively over the years to this end.

On March 12, 1970, President Nixon sent to the Congress Reorganization Plan No. 2 of 1970 which, if not disapproved by the Congress, will directly affect the organization and operations of the Bureau.

The plan proposes to create two new entities in the Executive Office of the President:

—*Domestic Council*—to coordinate policy formulation in the domestic area. Chaired by the President and made up of designated cabinet officials, this group would have an institutional staff and to a considerable degree would be a domestic counterpart to the National Security Council.

—*Office of Management and Budget*—to be the President's principal area for the exercise of his managerial functions.

In essence, the plan recognizes that two closely connected but basically separate functions both center in the President's office: policy determination and executive management. These involve:

- What the Government should do.
- How it goes about doing it.

The Domestic Council would be primarily concerned with *what* is done. The Office of Management and Budget would be concerned with *how* and *how well* it is done.

Among the policy functions in which the Domestic Council would be expected to take the lead are these:

- Assessing national needs, collecting information, and developing forecasts, for the purpose of defining national goals and objectives.
- Identifying alternative ways of achieving these objectives, and recommending consistent, integrated sets of policy choices.
- Providing rapid response to Presidential needs for policy advice on pressing domestic issues.
- Coordinating the establishment of national priorities for the allocation of available resources.

—Maintaining a continuous review of the conduct of on-going programs from a policy standpoint, and proposing reforms as needed.

The plan transfers to the President all functions now vested by law in the Bureau of the Budget and designates the Bureau as the Office of Management and Budget. The intention is that the President will delegate the Bureau's functions to the new Office.

Creation of the Office of Management and Budget is intended to be more than a change in name for the Bureau of the Budget. It is intended to be a basic change in concept and emphasis and reflect the broader management needs of the Office of the President.

The new Office will be involved in such functions as:

- Budget preparation and execution
- Fiscal analysis
- Program evaluation
- Program coordination
- Executive Branch organization
- Information and management systems
- Development of executive talent
- Development and coordination of legislative proposals
- Coordinating Federal statistical services

In announcing the details and concepts of the plan, the President's office provided the following comments on the increased emphasis to be placed on program evaluation:

The new Office of Management and Budget will place much greater emphasis on the evaluation of program performance: on assessing the extent to which programs are actually achieving their intended results, and delivering the intended services to the intended recipients. This is needed on a continuing basis,

not as a one-time effort. Program evaluation will remain a function of the individual agencies as it is today. However, a single agency cannot fairly be expected to judge overall effectiveness in programs that cross agency lines—and the difference between agency and Presidential perspectives requires a capacity in the Executive Office to evaluate program performance whenever appropriate.

GAO Report on Water Pollution

On November 3, 1969, the Comptroller General sent to the Congress a report on the GAO examination into the effectiveness of the Federal construction grant program for abating, controlling, and preventing water pollution (B-166506). This significant report deals with an important Federal program that is directly concerned with a serious environmental condition that is receiving increased attention—pollution of the Nation's water resources.

The program is administered by the Federal Water Pollution Control Administration of the Department of the Interior. Because of the significance of the subject matter and the GAO report, a future issue of the *Review* will include a more comprehensive explanation of the GAO review of the program and the findings and recommendations made.

The GAO report was favorably mentioned in the series of articles on environmental pollution in *The Washington Evening Star* in January 1970. One installment in this series by Roberta Hornig and James Welsh stated:

Two months ago, in a tough report, the General Accounting Office told Congress that the benefits from billions of dollars of spending on some 9,400 treatment plants in the last 12 years "have not been as great as they could have been."

GAO's reasoning gets to the heart of the traditional grant-in-aid process.

Consider a river lined by two dozen communities and a lot of industry. Administrators in possibly five of those communities know the bureaucratic application route well enough to get money for treatment works. But the river remains dirty because all the other communities and the industry continue to pour untreated waste into the river.

Said the GAO report: "The program to date has been administered for the most part using a shotgun approach—awarding construction grants on a first-come, first-served or readiness-to-proceed basis. Little consideration has been given to the immediate benefits to be attained by the construction of individual treatment plants."

Ralph Widner is director of the Appalachian Regional Commission, serving an area sorely beset by both water and air pollution. He puts it this way: "What we have is the accidental consequences of the grant-in-aid approach. There has been no systematic attack."

If Congress listens to GAO and other critics, it may insist on the application of systems techniques, leading to treatment systems serving large areas.

Accounting for War Costs

A recurring question of interest to the Congress and the public concerns the dollar cost of the Vietnam War. During the hearings in December 1969 by the Senate Appropriations Committee on Department of Defense appropriations for 1970, chairman Richard B. Russell of Georgia inquired of Secretary of Defense Laird as to the annual cost of the war in Vietnam.

The Secretary stated that the full estimated cost for 1970 was \$23.2 billion. It was pointed out that this amount included costs that would have been incurred anyway for the peacetime force and that the incremental cost of the war was considerably less than

\$23.2 billion. He then supplied the committee with a more detailed written explanation of the cost measurement problem and the differences between incremental and full cost measurements (Part 6 of hearings, 1970, p. 59).

Some excerpts of interest:

The full costs of the war cover the military personnel (deployed and backup) added for Southeast Asia since 1965 and the costs of equipping and supporting forces in Southeast Asia. Some of these costs would have been incurred in any event. Incremental costs represents the *net* difference between wartime and peacetime needs.

For example, the ammunition used in Southeast Asia is counted as a war cost. Had there been no war, our ammunition requirements for peacetime training would have been somewhat greater than they now are. A unit deployed in Vietnam might use 1,000 rounds per month in combat. In peacetime, that unit might have used 50 rounds per month for training. Full costs would reflect 1,000 rounds per month; incremental costs would reflect 950 rounds per month—the net difference between wartime and peacetime needs.

Similar considerations would apply to aircraft operations. Full costs reflect the cost of operating aircraft in Southeast Asia—fuel, parts, maintenance, etc. However, some costs would be incurred in peacetime training of the units, and this should be recognized in determining incremental costs.

Many new units have been created for operations in Vietnam, and the cost of these units has been treated as a special war cost. In some cases, however, it has been determined that these new units should be continued in the baseline force, and other units have been disestablished. Our wartime costs (on a full-cost basis) continue to reflect the full costs of the new units, while the disestablished units have been deleted from our non-war costs. Incremental costs would reflect only a part of the costs of such new units.

In summary, the costs of the war as we have reported them include costs of many types which would have been incurred in any

event. Incremental costs, to the extent possible, exclude these.

In addition to the distinction between full and incremental costing, there are other important factors in considering the impact of Southeast Asia developments upon Defense budgets. These include problems with respect to reconstituting inventory levels and meeting backlogs that have accumulated in other areas while priority was given to operations in Southeast Asia.

It should again be emphasized that there are no precise accounting records for these special war costs, nor can there be.

Because of the many uncertainties involved, no similar cost estimates are being made for the fiscal year 1971.

ADP in Department of Defense

The House Appropriations Committee, in reporting on the Department of Defense Appropriation Bill for 1970 (H. Rept. 91-698, Dec. 3, 1969), was critical of ADP management in the Department of Defense in a number of respects. Some highlights:

—In spite of the committee's request of a year earlier that expansion of all ADP systems be held in abeyance until a thorough review and analysis had been made by the Office of the Secretary of Defense, Comptroller, the Services were permitted to proceed with the expansion of many systems.

—There is still a need for improved management of these costly systems. Existing systems "were still being improved or new systems installed without careful consideration of the product of other systems already in existence or of other parallel systems being developed."

—The review process within the Office of the Secretary of Defense has

again been divided between various offices. The review and approval process should be a centralized responsibility of one group.

—It would appear feasible that at some Air Force bases second generation equipment in use could be utilized to provide adequate information instead of procuring a new generation of equipment as proposed.

—It was not necessary for the Air Force to enter into a contract to upgrade the computers for the LITE (Legal Information Through Electronics) program from second to third generation models.

—The committee "desires assurance that these systems will be given adequate management review and evaluation before implementation decisions are reached to be sure that they are necessary, are being effectively designed, and will be efficiently operated."

The committee's report also contained the following directive to GAO:

The Department of Defense recently announced plans to proceed further with the acquisition of a new family of 34 standardized computer systems for use in the Worldwide Military Command and Control System at an estimated cost of over \$500 million. The Air Force has announced its intention to proceed with the acquisition of a new generation of computers for the Advanced Logistics System at an estimated cost of approximately \$370 million. Severe difficulty has been encountered in the design of both of these systems. The Committee desires that the Department proceed with caution in the implementation of both systems. The Committee directs that the General Accounting Office immediately commence a comprehensive review of the need, requirements, and implementation features of these systems in line with the Committee's

directive of September 24, 1969. The Committee requests that the Department of Defense assist the General Accounting Office in every way possible.

Investigation of Military Clubs

The Permanent Subcommittee on Investigations of the Senate Committee on Government Operations held hearings in November 1969 on its investigation of fraud and corruption in the management of military club systems. The printed hearings, released in February 1970, list the following GAO staff members as assisting the subcommittee in its investigation:

Civil Division

Jack Balaban
Daniel Harris
Joseph Honcharik
Linda Boivin

International Division—Saigon Office

Harrison D. Richardson
Francis K. Buige

Chicago

Charles Stats

Cincinnati

Edward H. Stephenson

Kansas City

Jesse Plummer
Edward Traynor

Los Angeles

George Vissio, Jr.
Darryl W. Dutton
Richard R. Raker
Charles R. Fisher
Victor J. Ong

New York

Maurice Frame
John Hornung
Joe Unger

Philadelphia

D. Richard Stengel
Frank Philippi

San Francisco

George Choos
Thomas Coupar

GAO and Defense Expenditures

In a Joint Committee print dated December 23, 1969, the Subcommittee on Economy in Government of the Joint Economic Committee urged an expanded role for GAO in the analysis and evaluation of defense expenditures. The subcommittee stated:

In the past, the General Accounting Office has played an important part in the investigation and auditing of the expenditures of the Department of Defense, and in bringing to the attention of Congress numerous examples of waste and inefficiency. However, in the judgment of the subcommittee, the GAO needs to take on a larger role in the analysis of weapons systems contract performance, especially with regard to the more advanced and costly systems. As an agency of the legislative branch, the GAO is peculiarly able to serve the need for independent evaluations of expenditures and proposed expenditures by the Defense Department.

GAO Reports Never Die

The research value of GAO audit reports is illustrated by the recent use of one issued in 1956 in connection with a congressional study of the economic development of American Indian communities.

A series of papers on this subject was prepared for and published by the Subcommittee on Economy in Government of the Joint Economic Committee (Joint Committee Print, "Toward Economic Development for Native American Communities," Vol. 2, 91st Cong., 1st sess., 1969). Among these papers is one prepared by Stephen A. Langone, an analyst in the Legislative Reference

Service of the Library of Congress entitled "The Heirship Land Problem and Its Effect on the Indian, the Tribe, and Effective Utilization."

Pointing out that sources of information on Indian heirship problems were limited, Mr. Langone cited a 1956 report by the Comptroller General as one of three major sources of information on this subject. The report in question was entitled "Administration of Indian Lands by Bureau of Indian Affairs, Department of the Interior" (January 1956, B-114868). In preparing the paper the author referred to the report and its comments on difficulties experienced by Indians as a result of "fractionated landownership" and other factors.

GAO Audit of Benefit-Cost Studies Recommended

Reader's Digest for January 1970 contains an article by James Nathan Miller with the provocative title "Rape on the Oklawaha." The article is critical of the Army Corps of Engineers project to build a canal across central Florida, part of the route of which involves the Oklawaha River. Included in the author's suggested reforms is one requiring the General Accounting Office "to audit all benefit-cost reports on projects recommended by the Engineers."

Walt Frese—New Dickinson Professor of Accounting

GAO friends of Walt Frese, a former GAO official and currently a consultant to the Comptroller General, were pleased to learn of his designation as

the first Arthur Lowes Dickinson Professor of Accounting at the Harvard Business School.

Walt Frese was chief of the former GAO Accounting Systems Division from 1948 to 1956, when he left Government service to join the Harvard Business School faculty.

The Dickinson professorship at Harvard was made possible by gifts from eight of the Nation's leading public accounting firms in honor of Sir Arthur Lowes Dickinson, a former partner of Price Waterhouse & Co.

In occupying the Dickinson chair, one of Professor Frese's responsibilities will be, according to the Dean of the school, "to assure that the role of accounting receives significant attention among the various disciplines and courses that vie for students' time and interest."

Accounting marches on—even at Harvard.

Comptroller General Elected as Member of Governing Board of International Organization of Supreme Audit Institutions

The Comptroller General, *Elmer B. Staats*, was elected as a member of the Governing Board of the International Organization of Supreme Audit Institutions (INTOSAI) during the meeting of the Governing Board at INTOSAI headquarters in Vienna, Austria, September 1-5, 1969. The term of office is 6 years.

Participation in INTOSAI and all its organs is open to the supreme audit institutions of those countries that are members of the United Nations or one of its specialized agencies. INTOSAI is

a nongovernmental organization with consultative status with the Economic and Social Council of the United Nations. It aims at promoting the exchange of ideas and experiences between supreme audit institutions in the sphere of public financial control.

International Congresses are held every 3 years, with the next scheduled to be held in Montreal, Canada, in September 1971. Previous Congresses have convened in Tokyo (1968), Jerusalem (1965), Vienna (1962), Rio de Janeiro (1959), Brussels (1956), and Havana (1953). The Comptroller General attended the 6th International Congress that convened in Tokyo in May 1968, at which 70 nations were represented.

The duties of the Governing Board of INTOSAI are: (1) adopt all measures necessary to attain the Organization's aims regarding the directions of the Congress, (2) perform tasks assigned by the Congresses, (3) examine the qualifications of supreme audit institutions applying for participation, and (4) give recognition to established regional working groups desiring to participate as members of the Organization.

GAO Representatives Visit Italian Defense Ministry

On October 6 and 7, 1969, *Harold Rubin*, associate director, and *Frank Chemery* and *Sam Pines*, assistant directors, Defense Division, visited the Italian Defense Ministry in Rome to obtain information on Italian Government procurement methods.

During this visit, the GAO representatives described the responsibilities

and activities of the General Accounting Office. Based on the information provided, the Italian Department of Defense included a brief article on the GAO in the January 1970 issue of its magazine *L'Amministrazione Della Difesa* (Defense Administration).

Entitled "La visita dei rappresentanti del U.S. General Accounting Office al Ministero Della Difesa italiano," the article includes the following report on the GAO visit (as translated by Mrs. *Anna C. Dulaney* of the Office of Personnel Management):

U.S. GAO representatives' visit to the Italian Defense Ministry

A meeting with a team of GAO's officials was held on October 6 and 7, 1969, at the Defense Ministry-Central Office for Military Preparations. It was presided by the Central Director of the Preparations Lt. Gen. Mario Matarotta with the participation of representatives of the Central Office of the Budget.

The head of the GAO's delegation was Mr. Harold Rubin.

The purpose of the meeting was the investigation of the contractual systems followed by the Italian Defense Ministry, mainly in regards to supply of materials of high military technology.

The meeting was accomplished through answers to a complex questionnaire, prepared by the GAO and divided in four parts:

- (a) Supply of materials of high military technology;
- (b) Resupply of military materials and supply of military materials that can easily be found on markets;
- (c) Career developments of personnel assigned to the negotiations;
- (d) General criteria of supply and its problems.

The criteria followed by the Administration of the Italian defense in the field of supply were pointed out in the meeting which also identified the differences in respect to the rules, procedures and techniques followed by the U.S. Public Administration.

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HEARINGS and LEGISLATION



By MARGARET L. MACFARLANE
Chief, Legal Reference Services, Office of the General Counsel

New Laws

Federal Credit Unions

Under a law signed March 10, 1970 (Public Law 91-206), the GAO has been given specific statutory authority to audit the financial transactions of a newly established independent agency to be known as the National Credit Union Administration. The new agency will have supervision of the nearly 13,000 federally chartered credit unions. The GAO audit is to be conducted in accordance with principles and procedures applicable to commercial corporate transactions as prescribed by the Comptroller General.

Hearings

United States Financial Participation in Assistance Activities of the United Nations

The invitation for the Comptroller General to testify on the United Nations before the House Foreign Affairs Subcommittee on International Organizations and Movements on March 5, 1970, afforded the Office a good opportunity to summarize its conclusions and express its views on improvements needed in the management of U.S. interests in

development assistance activities of the various agencies of the United Nations.

In his prepared statement before the subcommittee, Mr. Staats detailed GAO conclusions and recommendations based on the review of five United Nations organizations:

- World Health Organization
- Food and Agricultural Organization of the United Nations
- International Labor Organization
- United Nations Children's Fund
- United Nations Development Program

The Comptroller General outlined seven specific areas where improvements were needed to assure the Congress that U.S. contributions to international organizations are effectively used to accomplish intended objectives. The Comptroller General's recommendations concerning United Nations organizations have been made available to the Appropriations subcommittees responsible for U.S. contributory funds and to other congressional committees having related oversight jurisdiction. (Other participants: Messrs. Stovall, Duff, Milgate, Conahan, Thompson, McCandless, and Kane.)

Independent Research and Development

In connection with the annual review of military procurement by the House and Senate Armed Services Committees, the subcommittees handling the research and development segment both requested the Comptroller General to testify. On February 25, 1970, he testified before the House Subcommittee on Independent Research and Development and on March 9, before the counterpart subcommittee of the Senate Armed Services Committee.

The Comptroller General submitted a report to the Congress on February 16, 1970, on "Allowances for Independent Research and Development Costs in Negotiated Contracts—Issues and Alternatives" covering the Department of Defense, the National Aeronautics and Space Administration, and the Atomic Energy Commission. In his statement, Mr. Staats outlined the results of the GAO study, as well as problems in determining independent research and development costs. Mr. Staats made recommendations urging a consistent policy requiring a greater relationship between the extent of participation in IR. & D. costs and the benefits accruing to the Government from such participation. (Other participants: Messrs. *Keller, Dembling, Bailey, Rubin, and Thompson.*)

SAFEGUARD System

The Joint Atomic Energy Committee invited the Comptroller General to brief the committee on GAO's review of the SAFEGUARD system on February 16, 1970. The committee met in executive session for purposes of the briefing.

(Other participants: Messrs. *Ahart, Bell, Crowther, Glickman, Bernstein, Garton, Carrigan, and Kane.*)

Telecommunications Policy Office

Because of the broad study conducted by GAO of the Government's telecommunications structure that culminated in a report to the Congress on July 14, 1969 (B-166655), representatives of GAO were invited by the Subcommittee on Legislative and Executive Reorganization of the House Committee on Government Operations studying the President's Reorganization Plan No. 1 of 1970 to present the Office views. Under this Plan a new Office of Telecommunications Policy in the Executive Office of the President will be established.

Charles M. Bailey, director, Defense Division, presented a statement outlining the findings made as a result of the GAO study. Inasmuch as the proposed reorganization will achieve the reforms recommended by GAO, favorable consideration by the committee was advocated. (Other participants: Messrs. *Bell and Eads.*)

Advisory Committees

At the request of the Special Studies Subcommittee of the House Government Operations Committee, the Comptroller General presented on March 12, 1970, information relevant to its study of the utilization and operations of Interagency and Public Advisory Committees in the Federal Service. Mr. Staats discussed the various types of advisory, interagency and public advisory committees and the method of their creation and performance. He recommended (1) a periodic and system-

HEARINGS AND LEGISLATION

atic review by both the agency head and the Bureau of the Budget as to the continued need for interagency and public advisory committees, together with a review of their membership and staff support, (2) that the executive branch be required to furnish after an appropriate interval information on the followup actions taken as a result of the reports of the interagency task forces or public advisory groups, and (3) establishment of management guidelines for the formation and use of such advisory committees. (Other participants: Messrs. *Friend* and *Thompson*.)

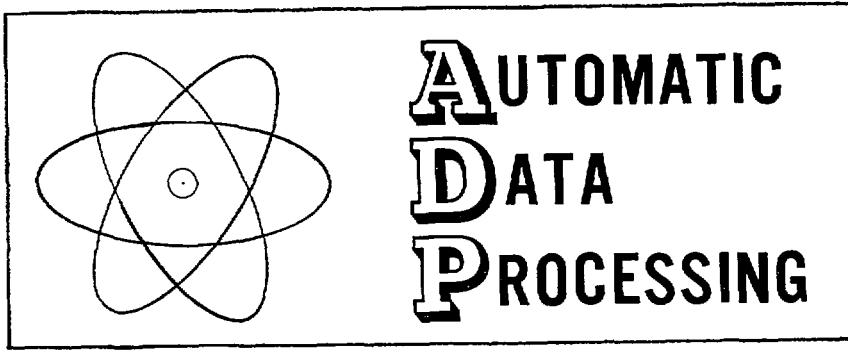
Budget Presentation

Mr. Staats and officials and division directors appeared before the Subcommittee on Legislative Branch Appropriations of the House Committee on Appropriations on February 24, 26, and

27, 1970, to present the budget estimates for GAO for fiscal year 1971. (Other participants: Messrs. *Keller*, *Dembling*, *Powers*, *Kensky*, *Morse*, *Bailey*, *Samuelson*, *Stovall*, *Sullivan*, *Simmons*, and *Cornett*.)

Anti-Bid-Peddling

A House Judiciary Subcommittee considering H.R. 3345 and H.R. 11245, bills to promote fair competition among prime contractors and subcontractors and to prevent bid peddling on public works contracts, requested representatives of GAO to be available at public hearings held on March 11, 1970, to answer questions. Mr. *Welch*, deputy general counsel, explained the changes recommended by GAO if the bills were to receive further consideration. (Other participants: Messrs. *Schwartz*, *Dokken*, and *Kane*.)



Acquiring Peripheral Equipment

On June 24, 1969, the Comptroller General sent a report to the Congress on the acquisition of peripheral equipment for use with automatic data processing systems. Copies of the report were sent to the heads of Federal departments and agencies. The report recommended that the head of each Federal agency take action to require replacement of leased components that can be replaced with more economical plug-to-plug compatible units.

In order to examine and evaluate the implications of the Comptroller General's recommendations upon the Government's policies and procedures, the Bureau of the Budget sponsored a conference of Government officials concerned with ADP management and procurement at the Federal Executive Institute in Charlottesville, Va., in September 1969. *Edward J. Mahoney*, associate director, OPSS, attended the conference as the GAO representative.

A report of this conference was prepared and, in general, it supported the conclusions in the GAO report.

Also, on February 2, 1970, the Bureau of the Budget issued its Bulletin No. 70-9 on the acquisition of periph-

eral components for installed ADP systems. The bulletin requires Federal agencies to review and make decisions on whether leased peripheral equipment components in computer systems supplied by the system manufacturer should be replaced with less costly equipment available from independent peripheral manufacturers or other sources. Some agencies have completed their reviews and have made replacements which have already resulted in substantial savings to the Government.

On February 16, the Director of the Bureau of the Budget, Robert P. Mayo, informed the Comptroller General that:

- Substantial economies are possible by the procurement of peripheral components, on a selective basis, directly from the independent manufacturer instead of from the system supplier.
- Substitution of such components for equipment now being leased from systems suppliers is feasible.
- Procurement of peripheral components from independent manufacturers in connection with initial acquisitions of systems was more complex. However, recent actions of systems manufacturers to separately price various elements of a system provide opportunities for selective procurement of software, training, maintenance and system support from different vendors in the same vein that the GAO report suggested be done for peripheral components.

Mr. Mayo also stated that the Bureau of the Budget found the GAO report "to be comprehensive and well-documented. It has highlighted a potential opportunity for significant economies and, on a longer-range basis, may have a substantial impact not only upon the Government's procurement processes, but on the industry's marketing policies as well."

Training in ADP Systems Design

The Office of Policy and Special Studies is developing a new ADP training program for GAO personnel. The overall objective is to provide training in the principles of computer-based systems and in the application of these principles during GAO accounting and auditing operations.

The program is designed to provide training in the following categories:

- ADP systems concepts
- ADP systems design
- Audit of ADP systems

The courses in ADP systems design and audit of ADP systems each will have a basic and an advanced session.

A pilot course in ADP systems concepts was conducted in Washington, D.C., on March 2-6, 1970. The following staff members attended the course:

Office of Policy and Special Studies:

Francis C. Chlan
Donald C. Clement
William R. Coyle
John F. Crotty
James K. Kardokus
Arthur M. Martin
Robert J. Ryan, Sr.
Charles A. Smith

International Division:

L. Carrel Daugherty
Percy E. Galey, Jr.

Civil Division:

Daniel P. Leary
Francis J. Polkowski

The ADP systems concepts course is designed to provide staff members with a practical foundation in:

- Data and processing concepts,
- Related design criteria, and
- Documentation and control requirements.

Lecturers and demonstrations for the sessions were provided by the Office of Policy and Special Studies, the Civil Service Commission, the National Bureau of Standards, Computer Identities Corp., Computer Usage Corp., Honeywell Inc., and General Electric Co.

Charles R. Shimkus of the Office of Policy and Special Studies conducted the course in cooperation with the Office of Personnel Management.

Delegation from Special Audit Committee, National Assembly of France, Meet with GAO Officials

On February 19, 1970, members of the delegation from the Special Audit Committee of the National Assembly of France met with the Comptroller General, *Elmer B. Staats*, and staff members of the General Accounting Office. The Special Audit Committee is generally equivalent to the U.S. House Committee on Administration. Briefings and discussions were held at the U.S. Capitol and the General Accounting Office.

The Comptroller General and staff members of the Office of Policy and

FRENCH LEGISLATORS MEET WITH GAO OFFICIALS ON ADP



Left to right: Seated—Pierre Bas, Deputy of Paris to the National Assembly and Chairman of the Special Audit Committee of the National Assembly; the Comptroller General, Elmer B. Staats; and Virgile Barel, Deputy of Alpes Maritimes (Nice area) to the National Assembly. Standing—Charles E. Hughes, assistant director, International Division; Claude Roux, Deputy of Paris to the National Assembly; Charles Deprez, Deputy of Hauts-de-Seines to the National Assembly and Mayor of Paris suburb of Courbevoie; Joseph Boyd, assistant director, Office of Policy and Special Studies; B. Morcau, Administrator of the National Assembly; Jean-Max Bouchaud, 1st Counselor, Embassy of France; E. H. Morse, Jr., director, OPSS; and Edward J. Mahoney, associate director, OPSS.

Special Studies (*E. H. Morse, Jr.*, director, *Edward J. Mahoney*, associate director, and *Joseph L. Boyd*, assistant director) briefed the delegation on the use of computer equipment in audit work of the General Accounting Office and GAO assistance in developing an automatic data processing program for the House of Representatives.

Charles E. Hughes, assistant director for special projects, International Division, coordinated the briefing arrangements and briefed the delegation on the organization, functions, and operations of the General Accounting Office.

Bernard A. Brady, supervisory auditor, Civil Division, met with the delegation at the Capitol and briefed them regarding the extent of GAO audits of salaries and expenses of Members of the Congress and such accounts as those of the Architect of the Capitol, the Library of Congress, and the Government Printing Office.

Testing Computer Auditing Procedures at Federal Housing Administration

The S. D. Leidesdorf & Co. approach to computer auditing has been undergoing a test in GAO during the past year. The test or pilot project is being conducted at the Federal Housing Administration (FHA) in Washington, D.C.

The annual audit of FHA's financial statements was selected as the basis for the study. The basic objective of this audit is to express an opinion on the fairness of the agency's financial statements in setting forth the financial position and results of its operations.

Two systems, the File Maintenance system and the Acquired Home Property system, were selected for test because of their size and significant effect on the agency's financial statements.

Representatives of S. D. Leidesdorf & Co. assisted GAO auditors in reviewing internal controls and evaluating the systems, and designing and implementing computer-based audit procedures. Several unique features of the audit approach included:

- Detailed review of selected computer programs of the agency.
- Modification of agency computer programs and preparation of new computer programs designed to test and provide information needed by the auditor.
- Reprocessing selected data through auditor-controlled programs and comparing the auditor's results with agency results.

During the study, several GAO auditors learned how to operate an IBM 7074 computer and actually processed live data used for audit purposes. As of March 1970, most of the work is complete and the project has been considered successful.

A detailed case study, describing the approach, actual testing, and test results, is now being prepared and will be available to those interested in the details of the test.

Auditape Application on Payroll Audit

The New Orleans Regional Office has submitted an interesting and informative summary of their most recent experience with Auditape. Taking a sam-

ple of employees for a payroll audit is not a new Auditape application. However, the discussion of problems encountered with the Auditape and the computer should be of interest to all staff members. *Malcolm Ledet, Robert Langlinais, and Mike Bannon* worked on this application. The summary submitted by Mr. Langlinais follows.

The review of civilian pay at the Pensacola Naval Air Station (PNAS) is part of a nation-wide Department of Defense payroll review being performed by several GAO regional offices. This review is divided into two segments: (1) propriety of salary rates, and (2) effectiveness of time and attendance reporting procedures and controls. Two separate statistical samples were required, one for each segment of the audit.

The sample for the time and attendance segment required consideration for such things as the number of reporting locations at the installation, the number and types of employees (wage board and classified) assigned to each location, and any unusual situations applicable to particular locations. For the salary rate segment, however, a random number selection of 100 employees was required. Accordingly, we used the Auditape for the selection of these employees.

From April 1969 through September 13, 1969, the payroll records for civilian employees at the Pensacola Naval Air Station were recorded on punched cards in IBM 1401 format and processed on an RCA 3301 computer with an IBM 1401 emulator. Beginning with the pay period September 14-27, 1969, the payroll records were con-

verted to magnetic tape in RCA 3301 format for processing on the 3301. The master payroll tape had been prepared during the week of September 7 and thus was available for use in our sample selection.

PNAS data processing personnel advised us that although they owned a Honeywell 200 (H 200) computer, a special program would have to be written to convert the payroll master record from RCA 3301 format to H 200 format. These officials suggested that we attempt to select the sample on the RCA system using the IBM 1401 Auditape and the IBM 1401 emulator. We were advised that, before using the Auditape, the payroll master tape would have to be converted from RCA 3301 to IBM 1401 format. However, this conversion would not require a special program since the RCA system had the capability to convert the tape with only minor instructions.

The master payroll file was converted from RCA 3301 to IBM 1401 format. We obtained a partial dump of the payroll tape to ascertain whether the conversion was successful and found that the records were properly converted. After mounting the Auditape, however, the tapes would not move. The console typewriter printed the following message: 0007 \$ 2393 0006 N. The message was broken down as follows: (1) the 0007 was in the instruction address, (2) the \$ was in the operations code, (3) the 2393 was in the "A" address register, (4) the 0006 was in the "B" address register, and (5) the "N" was in the demodifier register. We consulted the RCA representative at PNAS. However, he could not determine the

meaning of the printed message nor could he advise us of the actions to be taken to correct the situation.

Since this alternative failed, we decided not to request the H 200 Auditape from Washington and have the PNAS data processing personnel prepare a special program to convert the payroll master tape from RCA format to H 200 format. We decided to attempt to use the Auditape on an IBM 1401 computer in the New Orleans area, and were able to obtain IBM 1401 computer time at the NASA Computer Center in Slidell, La.

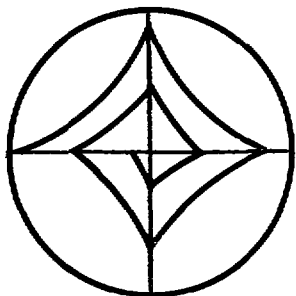
Our first two attempts at the sample selection on the NASA equipment were unsuccessful. The Auditape unwound about 200 feet and stopped at what appeared to be the same spot on the tape each time. We then checked our first specification card (the only one which had been read by the card reader) and found it to be correct. The computer operator then searched the Central Processing Unit and found that the computer was trying to write a message somewhere. We then decided to check the reel of Auditape to ascertain whether the file protect ring was on the reel. After pulling the Auditape off the drive, we found that someone had removed the file protect ring. This prevented the Auditape from recording a usage and, therefore, resulted in a complete halt of all operations. After

the ring was replaced, the Auditape began processing.

The processing continued until the card reader read the sample selection specification card. Three error messages regarding blocks 44 through 54 on the spec card were printed. Since we were selecting a numerical sample these blocks should have been left blank. We punched a new card and inserted it in the card reader. The processing continued smoothly until the application was completed.

The resulting printout contained a list of 101 employees (a sample of 100 was required). After reviewing the list, we found that the data listed appeared to be correct except for the grades and steps shown for several of the employees. Such oddities as grade 72 step 2 were listed. This, however, was the exception rather than the rule and will be resolved with PNAS data processing personnel during the audit.

This application required about 1½ hours of computer time (only about one-half hour would have been required had the file protect ring not been removed from the Auditape reel). We estimate that about 15 man-days would have been required to manually select the sample of 100 employees out of a universe of 9,212. Less than 5 man-days were expended on the application, including the time expended on the attempts made in Pensacola using the RCA 3301 computer.



SYSTEMS ANALYSIS

Systems Analysis in a Review Function

The Comptroller General stated in recent congressional hearings that we will "increase the application of specialized disciplines to management and program reviews, such as systems analysis, computer technology, actuarial science, etc." He also expressed the view that "* * * there is considerable potential for increased utilization of executive branch evaluations" by GAO in serving the information needs of Congress.¹

To support these ends, training in systems analysis is being given to supervisory staff members in GAO with two objectives in mind:

- First, to make them more aware of systems analysis techniques and approaches which may have application to the review work of the General Accounting Office.
- Second, to facilitate the review of executive agency analyses which employ these techniques.

For example, training is being provided in the development and use of models and simulations. In view of the objectives set by the Comptroller Gen-

eral, it is important not only to increase our understanding of the techniques as such, but to seek criteria for the evaluation of the applications which we encounter in agency programs.

A. L. Patterson, assistant director on the systems analysis staff, Office of Policy and Special Studies, prepared the following discussion of criteria for evaluating models and simulations.

Evaluation of Models and Simulations

The GAO "Glossary for Systems Analysis" defines a *model* as

A representation of the relationships that define a situation under study. A model may be a set of mathematical equations, a computer program, or any other type of representation, ranging from verbal statements to physical objects. Models permit the relatively simple manipulation of variables to determine how a process, object, or concept would behave in different situations.

In its broadest sense, any model is a *simulation*. Generally, however, the term simulation is used to refer to a model which is used to determine results under each of many specific sets of circumstances. Computer simulation is most appropriate when the model processes are complex and can be stated explicitly in a set of quantitative or logical relationships.

Models and simulations, of great variety, are found throughout the Gov-

¹ Statement of the Comptroller General, before the Subcommittee on Executive Reorganization of the Senate Committee on Government Operations, on "The Role of the General Accounting Office in Reviewing the Results of Federal Programs," Sept. 16, 1969.

ernment. They are designed to serve many objectives: education, planning, forecasting, research, analysis, coordination, and others. Since a frequent need is to study real-world events *in compressed time*, digital computers have become associated with modeling because of their speed and capacity. One model of the U.S. economy requires only 5 minutes to simulate a year of real-world time, broken into four 3-month intervals.

GAO staff members will presumably find increasing use of models and simulations among Federal agencies as program administrators are faced with a growing need to explain, experiment with, or otherwise observe complex systems aspects of their programs. The GAO staff member who wishes to assess any particular model might proceed by relating that model to the following criteria.

Feasibility

Is it feasible to obtain the data concerning the real-world system of interest necessary to model that system?

Data availability may have a large influence both on the construction of individual models and on the construction of types of models. The data available may not necessarily be the best reflection of the system or theory being modeled. The availability of sound national-level economic data has permitted extensive national economic modeling. On the other hand, specialized aspects of regional and urban economic modeling have been constrained by data gaps.

A distinction may exist between the data necessary to model a system and

the data necessary to run the model. One Federal agency contracted for the development of a model "to aid in the selection of public-program sets by evaluation of the indirect, as well as direct, impacts of alternative programs upon selected attributes of community population." These attributes included education, vocational skills, employment, income, housing characteristics, and distribution of the population within the community. Data was adequate to construct a plausible model of the system of interest, but the lack of other operational data has prevented the model from serving its intended purpose.

Coverage

How comprehensively are the processes of interest represented?

Any system is likely to involve a large number of variable factors, and the factors which are most significant—and worthy of inclusion in the model—may be a subject of debate among specialists. In disciplines with relatively settled theories, identifying significant variables for inclusion in the model may be easy. In systems where theory is in disorder, it is difficult. For example, most common economic subjects—and model variables—are those of classical economics: production, investment, income, consumption, and employment. These are matters on which there is wide theoretical agreement. In other subject areas—for instance, those involving sociological or political variables—there may be considerable controversy as to which variables warrant inclusion in a model.

Coverage is, of course, related to the size of a model. A model of the U.S. economy by the Brookings Institution, with 400 equations, is five times larger than any other econometric model, but a Department of Commerce model of the economy, with only 50 equations, may serve as well in forecasting for certain aggregate purposes.

Utility

How readily can processes of interest be manipulated under varying conditions and assumptions to answer specific questions?

In terms of utility, the ideal model of a complex process is one that simulates all the structural and decision-making elements of the real-world process modeled. The best model for experiment and observation is *transparent* in the sense that the internal processes faithfully reflect those of the system being modeled. A less realistic—but often useful—model is a *black box* model where the internal processes do not correspond to the real world. The real world, in such a model, is reflected only in its inputs and outputs, its starting and ending conditions, not in the systems structure within the model.

When emphasis is placed on prediction, rather than on comprehension of underlying phenomena, a black box model may have great utility. A high level Government decisionmaker is likely to be more interested in results than in methods. A black box model which predicts a change in output on the basis of changes in a set of input variables may be quite useful even though it does not display the structure

of relationships accounting for that output.

Comprehensibility

How clearly and understandably are the processes of interest represented?

Models should be understandable by those who are expected to use them. Government decisionmakers are unlikely to trust models enough to use them as aids to decisionmaking unless they can readily understand them. Comprehensibility is very relevant to the chances of a model being actually used, and this quality must be traded off against the complexity necessary to simulate the systems being modeled.

Comprehensibility may influence the choice between a transparent and a black box model. The pace of change in the subject area being modeled is also likely to be a consideration with respect to the degree of comprehensibility which the user of a model may be willing to accept. The user's familiarity with computer software is another consideration.

Most computer simulations are written in the standard programming languages (for example, FORTRAN, ALGOL, SNOBOL, etc.), but a number of programming languages—not yet in wide use—have been designed specifically for simulation (SIMSCRIPT, DYNAMO, CSL, SOL). It would be asking a great deal of the average Government user to expect that he learn a programming language in order to understand a particular simulation. The modeler who does not meet the user's demands for comprehensibility will likely produce a model for which there is, in fact, no user.

Validity

To what degree does the model correspond to the reality being modeled?

Validation of models may be accomplished by quantitative comparisons of model behavior and historical real-world behavior designed to disclose how relevant the model may be to the operational aspects, or the results, of the reality under consideration. This implies both agreement on terms and enough availability of historical real-world data to permit comparisons. In the absence of data permitting such comparisons, validation may necessarily be subjective—consisting of little more than judgments by users as to the model's plausibility. In addition to comparative data, objective validation requires widely accepted standards which may be developed in time but which are frequently lacking now. Validation is a continuing process. As experience since 1967 with econometric forecasting has shown, models whose forecasts in one year conform closely to the eventual reality may do less well in subsequent years.

Confidence

To what extent can the user of the model place confidence in its indications?

This criterion is closely related to that of validity, and in fact, to the other criteria discussed above. Once the user understands a model, has faith in the structural stability of the processes modeled and the completeness, accuracy, and relevance of the data used, he may use it with some confidence. The degree of confidence, however, is likely to be affected by the use for which the model is intended—whether it is designed for experimentation and research, or for direct operational support.

Other criteria suggest themselves—parsimony for instance—or heuristic value—whereby a model may lead to further discoveries or conclusions without providing proof of the correctness of the outcome. The evaluator of a model will in the end, however, want to be able to answer this question, "How well does the model do that which it was intended to do?" and the answer to this question implies an answer to all the others suggested above.

GAO Staff Changes

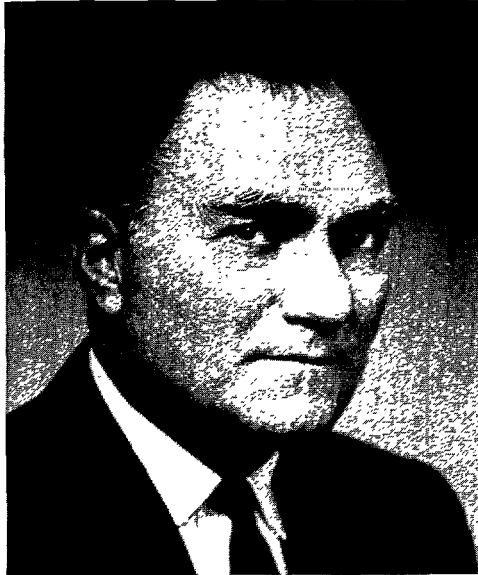


James M. Campbell

James M. Campbell was designated as director of the Claims Division, effective March 2, 1970, succeeding Charles M. Howard who retired from active service in February 1970.

As director of the Claims Division, Mr. Campbell is responsible for planning and managing the work of the division which encompasses the adjudication and settling of all claims required to be settled in the General Accounting Office, except transportation claims, and the taking of appropriate action on debts reported as uncollectible by administrative agencies. In addition, he supervises the functions exercised by the General Accounting Office under the Federal Claims Collection Act of 1966, as well as those functions vested in the General Accounting Office under Public Law 90-616, relating to the waiver of claims of the Government arising from erroneous payments of pay made to employees through administrative error.

Since joining the General Accounting Office in 1941, Mr. Campbell has had extensive experience as attorney-adviser on the staff of the General Counsel. He is a graduate of George Washington University, receiving his B.A. degree in 1937 and his LL.B. degree in 1939. He is a member of the District of Columbia Bar and is admitted to practice before the District Court of the United States for the District of Columbia, the U.S. Court of Appeals for the District of Columbia, and the Supreme Court of the United States.



Charles M. Howard

Charles M. Howard, director of the Claims Division, retired from active service on February 7, 1970.

Mr. Howard was born in Albany, Ga. He attended Davidson College in North Carolina, receiving a B.S. degree in 1933. He came to the Washington area in 1934, attended Georgetown University Law School, and received the LL.B. degree in 1941.

He joined the General Accounting Office in 1936 as an accounting clerk in the former Accounting and Bookkeeping Division. In 1941 he moved to the Claims Division as a claims examiner and from that position he progressed to those of increasing responsibilities until he assumed the duties of deputy director of the division in December 1956.

In December 1968 he was designated by the Comptroller General, Elmer B. Staats, as director of the Claims Division, succeeding Lawrence V. Denney, who had retired earlier in that year.



Edward J. Mahoney

Edward J. Mahoney was designated deputy director of the Office of Policy and Special Studies, effective March 8, 1970, to head the automatic data processing systems staff.

Mr. Mahoney has been on the staff of the General Accounting Office since 1948 when he became a member of the former Accounting Systems Division. He was designated as an associate director of the Accounting and Auditing Policy Staff in 1963.

Since 1953, Mr. Mahoney has been responsible for carrying out special studies involving automatic data processing systems in the Federal Government and providing other specialist services in this field. He was a member of the Joint Government Committee that developed the Government's electronic system for U.S. Treasury check operations. He was also a member of the Hoover Commission Task Force that studied electronic data processing systems and punched card processes in the Federal Government. In 1957, he received the GAO Distinguished Service Award.

Mr. Mahoney has been a member of the faculty of American University (1959-66), teaching courses in automatic data processing and systems analysis. He has also been a member of the American University Advisory Committee for Automatic Data Processing Programs and served on the Advisory Committee for the Institute on Electronics in Management of the American University.

GAO STAFF CHANGES

He has served as a member of several Government interagency committees and task forces. At the present time he is a member of:

- Interagency Committee (Civil Service Commission) on Federal Manpower Information System
- Interagency Task Force (Civil Service Commission) on Personnel and Computers in Decision-Making
- Federal Government Interagency Committee (Bureau of the Budget) on Automatic Data Processing
- Committee on Information Systems of the Council of State Governments (ex officio member)

He is also serving as chairman of the work group that was formed in 1969 to assist the House Committee on Administration in the study and development of a computer system for the House of Representatives.

Prior to joining the General Accounting Office, Mr. Mahoney was engaged in the development and implementation of large-scale mechanization programs in both industry and Government.

Mr. Mahoney is a member of the Federal Government Accountants Association and a charter member of the Society for Management Information Systems.



Philip A. Bernstein

Philip A. Bernstein was designated as an assistant director in the Civil Division effective March 8, 1970. In this position he will be responsible for the accounting, auditing, and investigative work pertaining to national defense and research and financial management activities of the Atomic Energy Commission.

Mr. Bernstein received a bachelor of arts degree, majoring in accounting, from George Washington University in 1958 and attended the Concentrated Course in Government Contracts at the California Institute of Technology in 1969. He received the GAO Meritorious Service Award in 1969.



William D. Martin, Jr.

William D. Martin, Jr., was designated as an assistant director in the Civil Division, effective March 8, 1970. In this position he will be responsible for the planning of the GAO accounting, auditing, and investigative work at the Department of Agriculture.

Mr. Martin served in the U.S. Army from 1953 to 1955. He received a bachelor of science degree with a major in accounting from Wake Forest College in 1959 and is presently attending the Graduate School of George Washington University. He is a CPA (Virginia) and a member of the American Institute of CPAs and the National Association of Accountants. He received the GAO Career Development Award in June 1968.



George D. Peck

George D. Peck was designated an assistant director in the Civil Division, effective March 8, 1970. In this position he is responsible for GAO accounting, auditing, and investigative work at the Department of Labor.

Mr. Peck served in the U.S. Army from 1947 to 1948. In 1958 he was graduated *cum laude* from Florida Southern University with a bachelor of science degree, major in accounting, and a bachelor of arts degree, major in history. He was awarded in 1958 the Lucius Pond Ordway Medal for Highest Scholastic Achievement in the business school and the Pi Gamma Mu Scholarship Medal for Highest Scholastic Achievement in the Social Sciences.

In August 1958 Mr. Peck joined the Field Operations Division of GAO in the Atlanta Regional Office and in September 1962 he transferred to the Civil Division in Washington.

In 1962 Mr. Peck received the GAO Superior Performance Award. He is a member of the National Association of Accountants and the Federal Government Accountants Association and is currently pursuing graduate studies at American University.



Dominic F. Ruggiero

Dominic F. Ruggiero was designated as assistant regional manager of the Los Angeles Regional Office, effective February 23, 1970.

From 1951 to 1953, Mr. Ruggiero served in the U.S. Army. In 1957 he received a bachelor of science degree, majoring in accounting, from California State College at Los Angeles. He is a CPA (California) and a member of the California Society of Certified Public Accountants. He was made an honorary member of the Beta Alpha Psi National Accounting Fraternity in 1967.

After graduation in 1957, Mr. Ruggiero joined the Los Angeles Regional Office. During 1967 to 1969, he served on the staff of the General Accounting Office in the Frankfurt Office, European Branch.

Professional Activities

Office of the Comptroller General

The Comptroller General, *Elmer B. Staats*, spoke at recent meetings of the following groups:

Chaired panel on "Congress and the Administration" in Charlottesville, Va., for the National Institute of Public Affairs, January 10.

Brookings Institution roundtable on "Selected Issues of Public Law" in Warrenton, Va., January 22.

Defense Industry Advisory Council on "Defense Profit Study," February 13.

The George Washington University—Doctoral Students' Association on the role of the General Accounting Office with particular reference to its program reviews, February 14.

Department of Commerce Science and Technology Fellows as part of their congressional orientation, February 20.

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

Participated in a meeting of the National Institute of Public Affairs, Baltimore, Md., on "The People View the Government." December 10, 1969.

Spoke at the Federal Government Accountants Association luncheon meeting on "What is GAO's Future Role," January 8.

Participated in a meeting of the

National Institute of Public Affairs (National Industrial Conference Board—Industry-Government Seminar) on "The State of the Union Message and the President's Legislative Programs," February 4.

Spoke before a meeting of the Air Conditioning, Refrigeration Institute, Cleveland, Ohio, on "What's Wrong with Awarding the Contract to the Lowest Bidder?" February 10.

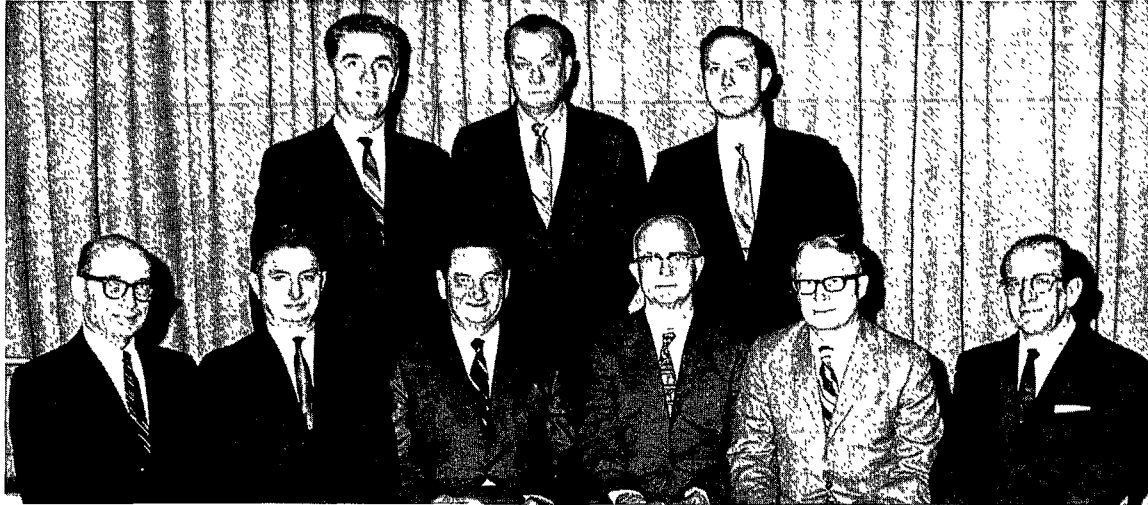
Spoke at the luncheon meeting of the Federal Executive Board of Southern California, Los Angeles, February 11.

Spoke at the dinner meeting of the Los Angeles Chapter of the Federal Government Accountants Association, Los Angeles, Calif., on "Uniform Cost Accounting Standards," February 11.

Spoke at the National Contract Management Association (South Bay Chapter) Symposium in Los Angeles, Calif., on "What the Congressional Watchdog is Watching," on February 13. General subject of symposium: "Causes and Cures of Cost Growth."

William A. Newman, Jr., Special Assistant to the Comptroller General, addressed the Northern Virginia Chapter of the Federal Government Accountants Association on March 3. The subject of his talk was "Uniform Cost Accounting Standards Are Feasible. Where Do We Go From Here?"

ASSISTANT COMPTROLLER GENERAL, ROBERT F. KELLER, ADDRESSES LUNCHEON MEETING OF WASHINGTON CHAPTER, FEDERAL GOVERNMENT ACCOUNTANTS ASSOCIATION, JANUARY 8, 1970



Among guests and members present, seated left to right: Joseph M. Robertson, Assistant Secretary for Administration, Department of Agriculture; E. H. Morse, Jr., Director, Office of Policy and Special Studies, GAO, and national president-elect, FGAA; Robert F. Keller, Assistant Comptroller General; Francis W. Lyle, Assistant Director, Office of Policy and Special Studies, GAO, and president, Washington Chapter, FGAA; Alan L. Dean, Assistant Secretary for Administration, Department of Transportation; and Daniel Borth, Deputy Director, Office of Policy and Special Studies, GAO, and vice president and chairman of the Finance Committee, Washington Chapter, FGAA.

Standing left to right: John R. Kurelich, Director, Office of Financial Systems and Services, Department of Housing and Urban Development; James A. Robbins, Executive Director, FGAA; and Joseph P. Welsh, Deputy Comptroller (Internal Audit), Department of Defense.

Mr. Newman also participated in a panel discussion on the subject of "A New Look at Cost Principles and UCAS (Uniform Cost Accounting Standards)" at a Briefing Conference on Government Contracts, sponsored by The Federal Bar Association and The Foundation of the Federal Bar Association in cooperation with The Bureau of National Affairs, Inc., held in Philadelphia on March 9 and 10.

Daniel L. Johnson, assistant director, Program Planning Staff, was program chairman for a 1-day seminar of the Capitol Region, Federal Government Accountants Association, held in Washington, D.C., on March 6. The seminar on "Techniques, Technology, and Our Times" probed various ways in which financial management is responding to the changing environment to which it relates and to the burgeoning technology which affects it and related fields.

Office of the General Counsel

Paul G. Dembling, general counsel:

Chaired a meeting of the Law and Sociology Committee of the American Institute of Aeronautics and Astronautics and spoke before the Institute President's Forum Committee on "Methods of Contributing to the Science of Government." New York, January 19-20.

Spoke before the Practising Law Institute on "Establishing Liability for Outer Space Activities." New York, February 6.

Addressed the Association of the Bar of the City of New York on "The Philadelphia Plan for Increasing Minority Group Employment in Federal Construction Projects (Lawful

Affirmative Action, or Unlawful Quota System)," New York, February 16.

J. Edward Welch, deputy general counsel:

Addressed the Annual General Counsel's Conference of the Army Materiel Command on "Patents and Technical and Proprietary Data," Alexandria, Va., February 3.

Spoke before The George Washington University Law School Class on Contract Administration on "Current Legal Problems of Interest in GAO" at the National Lawyers Club, February 17.

Stephen P. Haycock, assistant general counsel:

Spoke before Procurement Law Course, Judge Advocate General's School, on "GAO's Role in Government Contracting," Charlottesville, Va., January 8.

Spoke before the Contract Management Institute at the Mayflower Hotel on "Truth in Negotiations," February 5.

Participated as a panelist at the afternoon session of the Federal Contracts Conference which was sponsored by The Associated General Contractors of America, Inc., on "Negotiating Change Orders." Memphis, Tenn., February 6.

Melvin E. Miller, assistant general counsel:

Spoke before The George Washington University Labor Seminar on "Philadelphia Plan." December 3, 1969.

Paul Shnitzer, deputy assistant general counsel:

Participated in Government Con-

PROFESSIONAL ACTIVITIES

struction Contracting Course co-sponsored with the College of William and Mary, Williamsburg, Va., on "Preparing and Analyzing Specifications and Bidding," January 5.

Spoke before the 1970 Government Contractor Conference sponsored by Federal Publications, Inc., at the Mayflower Hotel, Washington, D.C., on "Negotiation," January 29.

Spoke at the Concentrated Course in Government Contracts presented by the Marshall-Wythe School of Law in cooperation with Federal Publications, Inc., at Williamsburg Conference Center, College of William and Mary, Williamsburg, Va., on "Contracting Techniques and Subcontracting," on February 24.

Spoke at the Department of Agriculture Graduate School on "Handling of Matters before the General Accounting Office," February 26.

Office of Policy and Special Studies

E. H. Morse, Jr., director, is serving this year as chairman of the National Awards Committee, FGAA.

Daniel Borth, deputy director, addressed the Fort George G. Meade Chapter of the Army Finance Association on the subject "The Role of the GAO in Systems Developments in the Executive Branch" on March 5.

Mr. Borth is currently serving as chairman, National Nominating Committee, Federal Government Accountants Association, and is vice president of the Washington Chapter.

William L. Campfield, assistant direc-

tor, lectured at two sessions of auditing students and conducted a seminar for accountancy faculty and graduate students at Northern Illinois University, February 18-20.

Published articles as follows:

The International Journal of Accounting, Fall 1969, "Selected International Trends in Financial Planning and Control in the Public Sector."

The Illinois CPA, Winter 1969, "Harmonizing the Several Faces of Professional Auditing."

Is serving as Visiting Professor of Accountancy at the Pennsylvania State University during the spring quarter 1970.

The following members of the Office of Policy and Special Studies were participants in the program of the 1-day seminar sponsored by the Capitol Region, Federal Government Accountants Association, on "Techniques, Technology, and Our Times," Washington, D.C., March 6.

Edward J. Mahoney, associate director, together with *Joseph L. Boyd*, assistant director for ADP, and *Leonard J. Koczur* conducted the session on "The Computer Audit Aid/Audit Challenge."

Keith E. Marvin, associate director, assisted by *A. L. Patterson, Jr.*, assistant director, and *Ted M. Rabun* were members of a panel which discussed the application of systems analysis techniques and concepts to the evaluation of results achieved by Federal programs in the afternoon portion of the session on "National Resource Allocation Considerations and Constraints."

M. A. Dittenhofer, assistant director, moderated the session on "Financial Management in the New Federalism."

Keith E. Marvin, associate director, also:

Addressed the Faculty Seminar arranged by the Los Angeles Regional Office of San Diego, Calif., on November 13, 1969, on the subject of "Use of Systems Analysis in GAO Reviews."

Chaired a seminar on "Weapon Systems Acquisition Process" at the Fifth Annual Department of Defense Cost Research Symposium in Washington, D.C., March 24-25.

Led a discussion on "Analysis for the Congress" at the Federal Executives Institute, Charlottesville, Va., April 1.

Defense Division

Charles M. Bailey, director, was awarded a Certificate of Appreciation on January 22, by the Picatinny (N.J.) Chapter 41 of the Armed Forces Management Association "for his support and contribution to our primary objective of improving the management of defense activities." Mr. Bailey addressed the Picatinny Chapter on January 22 on "The Role of the General Accounting Office in the Management of Defense Programs."

James H. Hammond, associate director, spoke to the Defense Procurement Executive Refresher Course on March 5. The course is conducted by Harbridge House for senior procurement officials of the Department of Defense. Mr. Hammond's topic was "GAO Plans for Auditing Defense Procurement."

Hassell B. Bell, associate director, was recently elected to the Board of Directors of the Federal Executive Institute Alumni Association. The present membership of the Association is about 400. The purpose of the Institute is to broaden the Federal executive's awareness of the problems involved in the environment in which the executive lives and works and to encourage his getting more personally involved in these problems.

Harold H. Rubin, associate director, spoke on March 11 before the Civil Service Commission Executive Institute on Management of Scientific and Engineering Organizations on "GAO Audit Functions in Research and Development."

The March 1970 issue of *The Journal of Accountancy* contains a letter by Mr. Rubin. The letter comments on an article in the November 1969 issue of the Journal on the need for improvement in the writing ability of CPA candidates. The letter is captioned with the following quotation: "* * * there is a vital need to educate people to express themselves clearly in writing and, in particular, to emphasize the importance of this ability."

R. G. Rothwell, associate director, attended the Civil Service Commission's Executive Seminar, "Environment of Federal Operations," at Kings Point, N.Y., February 2-13.

William F. Coogan, assistant director, was awarded the degree of master of science in business administration at graduation exercises on February 21 of the School of Government and Business Administration in The George

PROFESSIONAL ACTIVITIES

Washington University, Washington, D.C.

Messrs. *Hyman S. Baras*, *Frank P. Chemery*, and *Stanley R. Eibetz*, assistant directors, spoke to the Defense Procurement Executive Refresher Course in February. Mr. Baras also addressed the students of the Washington Semester Course of The American University on February 11 on "Responsibilities, Activities and Accomplishments of the GAO."

John Landicho, supervisory auditor, successfully completed the 18th session of the Program for Management Development at the Harvard University Graduate School of Business Administration on December 10, 1969. The session extended over a 16-week period beginning on August 24.

James T. Luhn, supervisory auditor, attended the 2-week course December 7 to 19, on Logistics Management for Auditors given at the U.S. Army Logistics Management Center, Fort Lee, Va.

Field Operations Division

Zane Geier, audit manager, Atlanta, received an achievement award at the October meeting of the Atlanta Chapter of FGAA in recognition of his services as president of the chapter in fiscal year 1969.

Elliott M. Appleman, supervisory auditor, Atlanta, participated in a DHEW regional workshop panel discussion in Atlanta on January 14 to inform community health center representatives on the maintaining of records and fiscal accounts for grants management and audit requirements.

James J. Dowd, Jr. and *Herbert A. Payonzeck*, supervisory auditors, Bos-

ton, recently attended a seminar in New York on Hospital Accounting and Medicare Audits given by the American Institute of Certified Public Accountants.

Howard G. Cohen, audit manager, Boston, spoke on the role of GAO in Government procurement at a Defense Procurement Executive Refresher Course conducted by Harbridge House at Hanscom Field, Bedford, Mass.

On February 19, *Myer R. Wolfson*, regional manager, Chicago, participated in a luncheon meeting of the Department of Government Contracts of Peat, Marwick, Mitchell & Company.

Kenneth W. Hitzeman, assistant regional manager, Chicago, spoke at a meeting of the Accounting Club of Drake University on February 11. His topic was "Management Audits in GAO."

Edward C. Messinger, assistant regional manager, Chicago, addressed two groups in October 1969. He spoke before the Accounting Club of Indiana University, Northwest Campus, on the subject "The Dynamics of Management Improvement in Government Operations." He spoke also before the Lombard Lions Club on "The Role of GAO in Improving Government Operations."

On January 16, *Frank T. Lawson*, management auditor, Cincinnati, was elected to the Alpha Sigma Lambda Honorary Scholarship Fraternity, during the annual awards ceremony of the Beta Chapter held at the University of Cincinnati.

David P. Sorando, regional manager, Cincinnati, and *Edward Stephenson*, auditor-in-charge, Indianapolis, addressed the Finance Officer Advanced Course at the Finance School, Fort Ben-

jamin Harrison, Ind., on February 3. Mr. Stephenson discussed the organization, role, and functions of the GAO and Mr. Sorando covered specific aspects of GAO's audit of the Army's Finance Officer activities.

On February 18, *Donald J. Heller*, supervisory auditor, Cincinnati, participated in the Career's Day Program sponsored by the Accounting Club at the University of Dayton.

Joe D. Quicksall, audit manager, Dallas, has been elected chairman of the Meetings Committee, and member, Executive Committee, of the San Antonio Chapter, FGAA.

Stewart D. McElyea, regional manager, Denver, was elected to the Board of Directors of the Colorado Society of CPAs on March 11.

Mr. McElyea, and *James E. Mansheim*, audit manager, Denver, spoke on the topic "Challenges in Accounting" to Beta Alpha Psi at Brigham Young University on February 16. Mr. McElyea spoke also to the Tenth Inter-governmental Seminar Series on March 12, on the subject "Fiscal Responsibilities in Government Agencies."

Robert T. Rogers, supervisory auditor, Detroit, spoke on career opportunities in Government during the Accounting Careers Council Seminar held in Detroit on November 15. The seminar was sponsored by various professional accounting groups.

On January 15, *Kenneth L. Weary*, regional manager, Kansas City, spoke before the Oklahoma City Federal Government Accountants Association on "Current Developments in the General Accounting Office."

Kenneth F. Luecke, audit manager,

St. Louis, spoke before the Southern Illinois University Accounting Club on February 28. His subject was "A Career in Government—One of the Challenges of the Seventies."

Dominic F. Ruggiero, assistant regional manager, Los Angeles, participated in a panel discussion on Uniform Cost Accounting Standards at a National Association of Accountants meeting in San Diego, on December 10.

On February 14, *Karl E. Deibel*, audit manager, Los Angeles, participated in a panel discussion at the Second Annual Business Conference sponsored by the California Polytechnic Institute and the Pomona Chamber of Commerce. Mr. Deibel was a member of the accounting panel which discussed "Opportunities for the Accounting Graduate."

George E. Grant, audit manager, Los Angeles, participated in a panel discussion sponsored by the National Association of Accountants, San Gabriel Chapter, on February 19. Topic of the panel discussion was "Opportunities for Accountants and Auditors."

Eugene G. Horwitz and *Charles E. Hulse*, supervisory auditors, Los Angeles, spoke before 65 members of the Accounting Society of the California State College at Long Beach on March 4. They spoke on GAO's functions and objectives.

Walter H. Henson, regional manager, New Orleans, made the initial presentation of the "Agency in the Spotlight" program at the October 1969 meeting of the New Orleans Chapter, FGAA. His topic covered current developments in the work of the General Accounting Office.

PROFESSIONAL ACTIVITIES

Paul deLassus, assistant regional manager, New Orleans, spoke at the October meeting of the Beta Gamma Psi Fraternity, Northwestern State College, on the functions of the General Accounting Office.

On November 20, *Robert Drakert*, regional manager, New York, monitored a seminar on contract terminations sponsored by the Northern New Jersey Chapter of FGAA. Representatives of industry and government took active part in what proved to be an informative and lively session.

David C. Kelly, audit manager, Norfolk, spoke on the organization and functions of GAO before the Hampton Roads Chapter, National Association of Accountants, at Norfolk, in September 1969.

Jack S. Everton, audit manager, Norfolk, addressed the Accounting Club at Atlantic Christian College, Wilson, N.C., on "The Changing Role of the Federal Auditor," in October 1969. Also Mr. Everton and *Deloit Strickland*, supervisory auditor, Norfolk, discussed "Career Opportunities Within GAO," with the Business Club at Campbell College, Buies Creek, N.C., in October 1969.

Paul M. Gaskill, audit manager, Norfolk, was recently presented with a certificate of appreciation by the National Association of Accountants in recognition for outstanding service to the association as a member of the National Board of Directors.

Simon Bonderow and *Frederick E. Harzer*, supervisory auditors, Philadelphia, whose article, "Preparing for and Taking the CPA Examination," appeared in the Fall 1969 issue of the

Review, received a letter of congratulations from William C. Bruschi, Director of Examinations, American Institute of Certified Public Accountants. In his letter Mr. Bruschi congratulated the two men for passing the complete examination at one sitting and said "Your article is a fine lesson for those who find themselves in the same position you were. You set forth in excellent form the details of your preparation, as well as the need for the preparation based on your analysis of the content of the CPA examination."

Milton H. Harvey, assistant regional manager, Philadelphia, was a guest speaker at the Navy's Defense Procurement Executive Refresher Course presented at Fort Monmouth, N.J., in October and at Philadelphia in November.

Charles Vincent and *Kenneth Pollock*, assistant regional managers, *George Choos*, supervisory auditor, San Francisco, *Edwin Kolakowski*, assistant regional manager, and *Karl Deibel*, audit manager, Los Angeles, met with the Qualifications Committee of the California State Board of Accountancy to work out procedures for implementing the board's recently adopted changes in evaluating governmental experience as qualifying for the CPA certificate.

Frank B. Graves, supervisory auditor, San Francisco, addressed the February meeting of the Federal ADP Council of Northern California and Nevada on the relationships of GAO's audit activities to the Federal ADP community.

Irwin M. D'Addario, assistant regional manager, Seattle, addressed the Kiwanis Club of Seattle on November 6. His topic was "GAO Responsibilities

and Functions and the Role of the Seattle Region in Accomplishing GAO Objectives in the Pacific Northwest." Mr. D'Addario also addressed the Delta Chapter of the Beta Alpha Psi at the University of Washington on January 27. The subject of his address was "Management Audits." He was assisted by *Ronald V. Nowocin* and *Joanne M. Elmslie*, both supervisory auditors, Seattle.

L. Neil Rutherford, audit manager, Seattle, addressed the Portland, Oreg., Chapter of the American Society for Public Administration on November 19. The subject of his address was "Management Audits in Federal Grant Programs."

William N. Conrardy, regional manager, Seattle, participated as a panelist during the 12th Annual Business Developments Conference at Portland, Oreg., on February 18. The subject discussed was "Accounting Concepts for Evaluating Human Resources."

Ruth A. Lee, supervisory auditor, Portland suboffice, was elected as a director of the Portland Chapter of the American Society of Women Accountants at their March 10 meeting. Her term of office is for 2 years.

Robert W. Hanlon, assistant regional manager, Washington, spoke to the Business Club at George Mason College of the University of Virginia, on November 18, on career development and the General Accounting Office.

James B. Deemer, supervisory auditor, Washington, has been appointed to the Accounting Supervisory Committee of the Northern Virginia Community College Board.

International Division

Oye V. Stovall, director, and *Charles D. Hylander*, deputy director, were guest speakers on January 12 at the Third Annual Conference of the Department of State Audit Staff in Washington, D.C. The Conference emphasized the continuing need to update audit techniques to assure that the Audit Staff's contribution to management is positive and constructive.

James A. Duff, associate director, and *Frank C. Conahan* and *Eugene C. Wohlhorn*, assistant directors, conducted a seminar on the international activities of GAO for students in the Washington Semester Program of American University on February 9.

Fred Dziadek and *Roberson E. Sul-lins*, assistant directors, and *James R. Rhodes*, supervisory auditor, attended the 1970 Annual International Development Conference held at the Mayflower Hotel, Washington, D.C., February 24-26, 1970. The theme of the conference was "World Development in the Seventies—The Need for New Departures." There was a series of panels, workshops, and speeches, with panelists including specialists from developing nations and the United States, businessmen and representatives of the World Bank and the United Nations.

Office of Personnel Management

Leo Herbert, director, participated in the Career Conference of the New York State Society of Certified Public Accountants, December 11, 1969. He spoke on the "Opportunities in Accounting" in governmental service.

Transportation Division

Joint commentaries by *T. E. Sullivan*, director, and *F. J. Shafer*, deputy director, on the subjects of GAO paperwork as related to the Transportation Division, and Government small shipment problems, were published in the February and March 1970 editions of *U.S. Transport*.

F. J. Shafer addressed the monthly meeting of the Washington, D.C., Chapter of Delta Nu Alpha on January 27, at the Washington Navy Yard Annex. His topic was "The Role and Functions of the GAO."

On March 14, Mr. Shafer addressed the 300th Inventory Control Center, a reserve unit located at Andrews Air Force Base, Md. His topic was "Distribution Management in the Department of Defense."

An article by *John M. Loxton*, assistant to the director, appeared in the January 1970 issue of *Management Accounting* published by the National Association of Accountants. The article is entitled "Use of Computer to Facilitate Audit of Transportation Charges."

T. E. Sullivan, accompanied by *R. E. West*, assistant director, addressed the meeting of the Freight Revenue Committee of the Accounting Division of

the Association of American Railroads, in Chicago, Ill., on March 2, 3, and 4. His topics were the recommendations of the Joint Agency Transportation Study Group, and Government small shipments. In addition, they discussed problems of mutual concern in the audit of accounts and the settlement of rail carriers' claims against the Government.

William F. McDade, Jr., supervisory transportation specialist, attended the 22d Annual Physical Distribution and Traffic Management Institute at American University from March 10-19.

E. B. Eberhart, supervisory transportation specialist, attended the semi-annual meeting of the Cargo and Passenger Revenue Accounting Committees of the Airline Finance and Accounting Conference in Dallas, Tex., March 16 and 17. He discussed various billing forms and problems encountered by carriers on Government traffic.

Lowell W. James, chief, planning staff, and *David F. Engstrom*, transportation specialist, completed an assignment with the Joint Agency Transportation Study Group in connection with the central billing and payment procedure study conducted under the Joint Financial Management Improvement Program.

Successful Candidates—November 1969 CPA Examination

Listed below are the employees who passed the November 1969 CPA examination:

REGIONAL OFFICE

<i>Name</i>	<i>Regional Office</i>	<i>State</i>
Charles R. Barker	Philadelphia	Pennsylvania.
Margaret H. Dyess (Mrs.)	Washington	Virginia.
Victor Ell	Los Angeles	California.
Edward J. Fossler	Philadelphia	Pennsylvania.
Lowell E. Hegg	Denver	Colorado.
B. Reginald Howard	San Francisco	California.
Joseph Kernen III	Philadelphia	Pennsylvania.
Edward F. Luty, Jr	Philadelphia	Pennsylvania
Donald D. Nagelhout	Norfolk	Virginia.
David V. Peltier	San Francisco	California.
Robert H. Schwartz	Detroit	Michigan.
Ernest W. Taylor	Norfolk	Virginia.

WASHINGTON

<i>Name</i>	<i>Division</i>	<i>State</i>
James O. Benone	Civil	Virginia.
R. James Councilman	Defense	Maryland.
Bernard G. Grindel	International	Washington, D.C.
Charles W. Moore, Jr	Civil	West Virginia.

New Staff Members

The following new professional staff members reported for work during the period December 16, 1969, through March 15, 1970.

Civil Division	Bassett, Keith E.	Duquesne University
	Brooks, William D.	West Virginia State College
	Brown, John A., Jr.	Tusculum College
	Calhoon, Carl C.	California State College at Long Beach
	Dishmon, James L., Jr.	Benjamin Franklin University
	Fain, Robert W.	Fairmont State College
	Ferson, William J.	Point Park College
	Galloway, James R.	Department of Health, Education, and Welfare
	Grace, Paul O.	Pennsylvania State University
	Graube, Carol A. (Miss)	University of Richmond
	Grossman, Robert A.	Department of the Navy
	Kent, David F.	Bloomsburg State College
	Lacey, Paul D.	West Liberty State College
	McMullen, Mary J. (Miss)	University of Maryland
	Manning, Wilse D.	Mississippi State University
	Milletary, William C.	Point Park College
	Roach, William H., Jr.	The University of South Florida
	Schoen, Roy H.	Gannon College
	Taylor, Tim R.	American University
	Weiss, Richard	American University
Williamson, Hugh M., Jr.	Alderson-Broaddus College	
Defense Division	Fiorillo, Michael	Caltronics, Incorporated
	O'Sullivan, Donald A., Jr.	King's College
	Taylor, Harry E., Jr.	East Tennessee State University
	Wertheimer, Arnold M.	Department of the Air Force
Office of Policy and Special Studies	Kardokus, James K.	University of Oklahoma
	Petrovitch, Edward J.	National Aeronautics and Space Administration
Transportation Division	Roseman, Christopher C.	John J. McMullen Associates
	Warren, David R.	University of Maryland
Office of the Comptroller General	Davis, Charles H.	Department of the Army
	Herrell, Daniel B.	The Johns Hopkins University
	Jensen, Eileen C. (Miss)	Treasury Department
	Kraus, Robert J.	Department of the Army
	Ramsey, Ronald R.	Mainstream Computing International, Incorporated
	Southwell, Donna L. (Miss)	George Washington University
	Weiner, Benjamin H.	Department of the Army

NEW STAFF MEMBERS

**Office of
Personnel
Management**

Dunlap, David P. Lawrence University

**REGIONAL
OFFICES**

Atlanta

Angle, Fredrick E., Jr. Mississippi State College
Edwards, Lee A. Valdosta State College
Holcombe, James C. University of Montevallo
Walters, David E. University of Tennessee

Boston

Dow, Wayne M. Oregon State University

Chicago

Dowd, Richard J. St. Mary's College
Jenne, Ronald D. University of Illinois

Cincinnati

Landroche, Michael O. Belknap College
Rock, James P. Ohio University

Dallas

Ebbs, Jimmie D. New Mexico State University
Sprows, Danny L. Southwestern State College
Watson, Charles W. Louisiana Polytechnic Institute
Williams, Allan G. University of Houston

Denver

Drudik, Bonnie L. (Miss) Louisiana College

Detroit

Rowan, David W. Eastern Michigan University

Kansas City

Gibney, Gary P. University of Tulsa
Solenberger, David R. Kansas State University
Ward, Martin E. Kansas State Teachers College, Emporia

Los Angeles

Bullock, Danny M. Northern Arizona University
Grisafe, Michael F. Northwestern University
Hachten, Stephen W. San Fernando Valley State College
Haug, Patrick W. California State College at Fullerton
Jordan, James G. California State College at Fullerton
Seigel, Larry M. University of California at Los Angeles

New Orleans

Barnett, Lee D. University of West Florida

New York

Carchia, Edward, Jr. Monmouth College
Crecco, Joseph Hofstra University
Muzio, Paul C., Jr. Long Island University
Orenstein, Mark I. City College of New York
Stein, Charles K. New York Institute of Technology

Norfolk

Brady, Hugh E., Jr. Old Dominion University
Roache, Dudley C., Jr. Old Dominion University

NEW STAFF MEMBERS

San Francisco	Berger, Ronald D.	Armstrong College
	Block, Ralph T.	San Jose State College
	Brandon, Lawrence D.	Humboldt State College
	Emanuel, Stephen L.	San Jose State College
	McDaniel, David J.	San Jose State College
	Rosenson, Richard S.	University of California, Berkeley
	Swearingen, William H.	San Jose State College
	Todaro, Frank J.	San Francisco State College
Seattle	Baken, Dennis R.	University of Washington
	Praast, Donald A.	University of Puget Sound
	Staley, Paul E., Jr.	University of Washington
Washington (Falls Church)	Funkhouser, Cleggett S.	Madison College
	Hirshy, Allan J.	George Washington University
	Newman, William K.	University of Maryland
	Polsky, Mark B.	University of Maryland
	Rosewell, Wayne A.	West Virginia Institute of Technology

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.

Documentation Standards

By Max Gray and Keith London; Brandon/Systems Press, Inc.; Princeton, New York, 1969; \$8.00.

"Documentation Standards" is the first book the reviewer has seen that is devoted entirely to the subject. Its basic purpose, as stated by the authors, is to provide to data processing managers, supervisors, and analysts a practical guide for the design and implementation of a standard system of documentation for data processing. Notwithstanding its basic purpose, the book should prove valuable as a professional reference or guide for the auditor who may be participating in the design of a data processing system or engaged in an after-the-fact review.

The authors define data processing documentation as an organized series of descriptive documents relating to all aspects of system development and operations. Within this broad definition, documentation is categorized into *development documentation* and *control documentation*. Development documentation, of primary concern in the book, describes the system and is the means of communicating information *about* the

system. Control documentation on the other hand is concerned with communicating information about resources used to develop the system including personnel, time, materials, and money.

Data processing documentation is divided into six basic classifications:

- Analytical
- System
- Program
- Operations
- User aids
- Management aids

Five of the 10 chapters of the book are devoted to a detailed discussion of these six documentation classifications. At the outset, the authors make it clear that there is no ideal universal set of documentation standards. They point out that each data processing department must implement a documentation system which suits its own environment because the type and level of complexity of documentation for one location may be totally invalid in another environment.

In addition to the discussion, examples of standard forms as well as reports that are being used in successful data processing installations are included in the book. This information

READINGS OF INTEREST

should prove valuable to auditors because it gives samples of the type of documentation normally maintained.

Throughout the book, the importance of documentation is emphasized. At the risk of taking some material out of context, several examples follow:

- Invariably, without adequate documentation, * * * the initial idea from the user becomes distorted, the final product bearing little relation to the original intention. Planned standard documentation intends to eliminate this element of distortion by permitting the orderly communication of ideas from one project phase to another.
- * * * planned standard documentation would reduce the impact of staff turnover.
- The only viable method of quality control review in development is to study and assess the product through its documentation as it proceeds from concept to general design and ultimately into operational form.
- Documentation describing a system at each step becomes almost indispensable, because it establishes design and performance criteria to be met during subsequent phases of project work.
- Adequate documentation, properly maintained, is a necessity for efficient system and program updates. Similarly, adequate documentation of programs previously developed is a necessity for the conversion of a system to new machines.
- * * * where a proposed system interfaces with a previously developed system, it is vital to review the interaction between the two systems. This can only be satisfactorily achieved if the previously designed system is adequately documented.
- * * * adequate documentation is probably the primary contributing factor towards maximizing efficiency in a data processing installation.
- Adequate documentation is invaluable

if there is not to be a duplication of effort in developing like applications independently.

- Documentation maintenance is a major area in which standards should be specified *and enforced*.
- The documentation standards development program can only succeed with full management backing.

These are but a few of the authors' comments, but they serve to illustrate the importance attributed to adequate documentation.

Overall, the book accomplishes several objectives:

- It defines the purposes and types of documentation.
- It describes the content of documentation within systems development.
- It outlines a model documentation system.
- It emphasizes the importance of documentation standards and outlines methods of developing these standards.

Because of increasing complexities in data processing systems, a crucial communication problem exists. As the authors state, "A greater volume of information of higher complexity passes among growing numbers of people of dissimilar backgrounds." Therefore, some agreed-upon methods of communication are essential. The book, "Documentation Standard," contains the framework within which this needed communication can be established.

Joseph L. Boyd,
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 Award for the Best Article Published in the GAO Review and is presented during the GAO awards program held annually in June in Washington.

One award of \$250 is available to contributing staff members 35 years of age or under at the date of publication. Another award of \$250 is available to staff members over 35 years of age at that date.

Staff members through grade GS-15

at the time of publication are eligible for these awards.

The awards are based on recommendations of a panel of judges designated by the Comptroller General. The judges will evaluate articles from the standpoint of the excellence of their overall contribution to the knowledge and professional development of the GAO staff, with particular concern for:

- Originality of concepts.
- Quality and effectiveness of written expression.
- Evidence of individual research performed.
- Relevancy to GAO operations and performance.

STATEMENT OF EDITORIAL POLICIES

1. This publication is prepared for use by the professional staff members of the General Accounting Office.
2. Except where otherwise indicated, the articles and other submissions generally express the views of the authors, and they do not necessarily reflect an official position of the General Accounting Office.
3. Articles, technical memorandums, and other information may be submitted for publication by any professional staff 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

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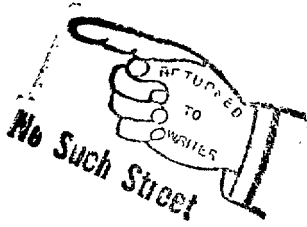
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