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BY THE COMPTROLLER GENERAL



Report To The Congress

OF THE UNITED STATES

Implementation Of Major System Acquisition Process-- A-109--Is Inconsistent Among Civil Agencies

The Office of Management and Budget's Circular A-109 prescribes how major systems are to be acquired. A-109 is consistent with the Commission on Government Procurement recommendations and is expected to reduce cost overruns and diminish the controversy of whether new systems are needed.

GAO reviewed its implementation in four civil agencies and found progress has been slow and some agency directives or acquisition processes are inconsistent with A-109's objectives.

Reforms are needed.



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To the President of the Senate and the
Speaker of the House of Representatives

This report contains our observations on the efforts of the Department of Energy, Department of Transportation, General Services Administration, and National Aeronautics and Space Administration to implement Office of Management and Budget Circular A-109 on major system acquisitions. A-109 was based on the Commission on Government Procurement recommendations made in December 1972, which were designed to improve Federal acquisition of major systems.

This report represents our first effort to review A-109 implementation by civil agencies. We have previously reviewed implementation efforts in the Department of Defense.

We are sending copies of this report to the Director, Office of Management and Budget; the Secretaries of Energy and Transportation; and the Administrators of the General Services Administration, National Aeronautics and Space Administration, and Office of Federal Procurement Policy.

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Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

IMPLEMENTATION OF MAJOR
SYSTEM ACQUISITION PROCESS--
A-109--IS INCONSISTENT AMONG
CIVIL AGENCIES

D I G E S T

Implementation of A-109, the major system acquisition process, by four large civil agencies has been slow and some directives or processes are inconsistent with the concepts set out by the Commission on Government Procurement. With the exception of National Aeronautics and Space Administration (NASA) officials, management officials have not seemed to support A-109 concepts and have not given a high priority to making changes in their acquisition policies.

The new policy calls for:

- Establishing an integrated systematic approach for determining mission needs, budgeting, contracting, and managing programs.
- Directing early research and development to satisfy mission needs and goals.
- Involving top-level management in determining agency mission needs and goals.
- Communicating with the Congress early in the acquisition process.
- Relating acquisitions to agency mission needs and goals.
- Improving opportunities for innovation by the private sector in designing new systems.
- Establishing contractual competition early in the acquisition process and continuing it as long as economically beneficial.
- Avoiding premature commitments to full-scale development and production. (See pp. 3 to 5.)

The agencies have issued directives to carry out these objectives, but as yet there have been few new programs and little action which

can be evaluated. Some directives and planned acquisition procedures conflict with A-109 objectives.

DEPARTMENT OF ENERGY (DOE)

DOE has not yet applied its implementing directives to day-to-day operations and has been slow in resolving questions by the Office of Federal Procurement Policy (OFPP).

- * These directives call for actions which GAO believes could narrow alternatives and limit industry innovativeness and open competition. (See pp. 6 to 10.)

The Secretary of Energy should:

- Resolve the OFPP objections to its current implementation directive.
- Evaluate and revise the agency's planned acquisition process to make sure that identifying and evaluating alternatives before approval of a mission need do not limit competition and innovative opportunities.

DEPARTMENT OF TRANSPORTATION (DOT)

DOT has not yet implemented the A-109 acquisition process into its day-to-day operations, but has issued a list of 11 major systems which are to follow DOT's directive.

DOT or agency components directives do not call for some key concepts in A-109. The major omission is the requirement to competitively solicit alternative solutions from industry. (See pp. 17 to 20.)

The Secretary of Transportation should revise the directives to conform more closely to the A-109 acquisition approach. These revisions should be coordinated with OMB/OFPP.

GENERAL SERVICES ADMINISTRATION (GSA)

GSA is now in its third implementation effort and is working with OFPP and the appropriate congressional committees on needed changes.

Its current budget structure is not compatible with a mission-budgeting approach. It is not structured to disclose funding for identifying and exploring alternative solutions to satisfy a mission need.

The Administrator of GSA should:

- Continue to place high priority on A-109 implementation, including implementing directives and application in day-to-day operations.
- Develop, and include in the agency's budget, a presentation based on agency missions which segregates funding requests for identifying and exploring alternative solutions to satisfy mission needs.

NASA

NASA's progress includes issuing an implementing directive, approval of four mission need statements, and extensive A-109 training. The implementing directive is almost a re-statement of A-109. NASA's planned acquisition process, however, as described by agency officials, contains elements which could work against the objectives of A-109 and the acquisition approach recommended by the Commission on Government Procurement. These elements include (1) program manager reassignments, (2) communication of NASA's in-house feasibility studies to contractors when soliciting conceptual designs, and (3) permitting a winning contractor to change its design based on data taken from losing designs. (See pp. 38 to 43.)

The Administrator should adequately consider A-109 objectives in future decisions relative to the above factors.

OMB/OFPP

While the agency head is the key official responsible for implementing A-109 in each agency, OFPP is responsible for overseeing A-109 implementation.

OFPP was established within OMB to give it prestige and leverage in dealing with the executive agencies and to increase its ability to handle responsibilities. A-109 implementation has been extremely slow.

GAO believes that agencies with significant technology base activities could compromise A-109 objectives. This would happen if they perceive a mission need (but do not formally approve it) and conduct system concept formulation and demonstration within the technology base which dictates the solution once the mission need is approved.

The Director of OMB and the Administrator of OFPP should:

- Direct OFPP personnel and OMB budget examiners to be aware of and consider, in reviewing DOE and NASA budget requests and programs, those elements (see pp. 9 and 40 to 43) in the agencies planned acquisition process which could permit actions contrary to A-109.
- Continue to place a high priority on working with the executive agencies to implement A-109.
- Direct agencies with significant technology base activities to make sure that only appropriate activities are being pursued.
- Review budget requests for technology base activities to make sure that they do not contain activities which, in effect, are design efforts for solutions to perceived mission needs.

AGENCY COMMENTS

This report was reviewed by the four civil agencies and by OMB, and changes or deletions

have been made to reflect their comments. GSA and OMB agreed with GAO's findings and recommendations.

According to DOE, GAO's draft report did not adequately describe the problems it faces or provide a useful independent review of DOE's progress and success. (See pp. 52 and 53.) GAO's objective, however, was to review and assess agency action in implementing A-109. As stated on page 6, DOE had not yet incorporated A-109 into its day-to-day operations; therefore, GAO's assessment was limited to review and discussion of DOE's implementing directive. DOE disagreed with GAO's concerns about (1) the status of DOE's disagreements with OFPP and (2) DOE's consideration of alternatives before establishing a major system acquisition program. (See pp. 9 and 10.)

According to DOT, GAO was taking a more rigid interpretation of A-109 than OFPP intended. DOT agreed that Federal Aviation Administration implementing directives need revision, but disagreed that the DOT and Coast Guard directives need revision since the DOT components are expected to apply A-109 principles and meet A-109 requirements. (See pp. 56 to 61.)

According to NASA, its controls are proper and adequate to insure that A-109 objectives are considered in its acquisition decisions and procedures. (See pp. 65 to 70.)

GAO believes concerns expressed about DOE, DOT, and NASA acquisition processes or directives are valid. Further discussion is included in the referenced pages.

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ABBREVIATIONS

ADP	automatic data processing
ADTS	Automated Data and Telecommunications Service
DOD	Department of Defense
DOE	Department of Energy
DOT	Department of Transportation
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FPR	Federal Procurement Regulation
FRA	Federal Railroad Administration
GAO	General Accounting Office
GSA	General Services Administration
MMS	multimission modular spacecraft
MSFC	Marshall Space Flight Center
NASA	National Aeronautics and Space Administration
NHTSA	National Highway Traffic Safety Administration
NMI	NASA Management Instruction
OFPP	Office of Federal Procurement Policy
OMB	Office of Management and Budget
OST	Office of the Secretary of Transportation
PBS	Public Buildings Service
RFP	request for proposals
TSARC	Transportation System Acquisition Review Council
UMTA	Urban Mass Transportation Administration

CHAPTER 1

INTRODUCTION

In 1970, due to the magnitude of the Government's procurement expenditures and the problems encountered in Federal procurement, the Congress established the Commission on Government Procurement. In December 1972, the Commission made recommendations to promote economy, efficiency, and effectiveness in Federal procurement. Part of the Commission's effort dealt with major system acquisitions and it made recommendations for reforming the major system acquisition process.

On April 6, 1976, the Office of Management and Budget (OMB) issued OMB Circular A-109 prescribing how major systems are to be acquired. The new policy was viewed to be consistent with the Commission's recommendations and was expected to

"* * * effect reforms throughout the executive branch to greatly reduce cost overruns and to diminish the controversy of * * * whether new systems are needed."

Major system acquisitions represent a significant portion of the Federal budget. As of September 30, 1978, 857 ongoing major acquisition programs had an estimated cost of \$531.2 billion. ^{1/} The cost was an increase of \$207.4 billion, or 64 percent over initial estimates. The report included Department of Defense (DOD) programs with estimated research, development, test, and evaluation costs exceeding \$75 million or estimated production costs exceeding \$300 million and civil agencies' programs with estimated costs of \$25 million or more. Executive agencies attributed the cost increase to (1) inflation, (2) quantity changes, (3) changes in system characteristics (engineering), (4) spare parts or similar types of support needs, (5) extended delivery dates, and (6) inadequate original cost estimates.

This report discusses the progress made by four civil agencies--Department of Energy (DOE), Department of Transportation (DOT), General Services Administration (GSA), and National Aeronautics and Space Administration (NASA)--in implementing A-109 policy into their operations.

^{1/}"Financial Status of Major Federal Acquisitions, September 30, 1978," PSAD-79-14, January 11, 1979.

Our Office has issued several reports related to A-109--three January 24, 1977, reports, each comparing the acquisition of a DOD major system with the Commission's recommended acquisition framework; a July 27, 1977, report on mission budgeting; eight reports on executive branch progress in responding to the Commission's recommendations issued between June 19, 1973, and May 31, 1989; and a February 20, 1979, report on DOD progress in implementing A-109.

SCOPE OF REVIEW

To accomplish the objectives of our review, we conferred with officials of the Office of Federal Procurement Policy (OFPP) and the headquarters and major components, services, or field centers of the agencies reviewed. We examined appropriate directives, reports, correspondence, and other records to assess the agencies' formal implementation of A-109. We held discussions with agency officials and reviewed ongoing new programs to determine if the agencies' acquisition practices followed the policies in A-109 and in the agencies' implementing directives.

CHAPTER 2

A-109 ACQUISITION FRAMEWORK

The acquisition framework and policy established by A-109 call for, in part:

- Establishing an integrated systematic approach for determining mission needs, budgeting, contracting, and managing programs.
- Directing early research and development to satisfy mission needs and goals.
- Top-level management involvement in determining agency mission needs and goals.
- Communicating with the Congress early in the acquisition process.
- Relating major system acquisitions to agency mission needs and goals.
- Improving opportunities for innovation by the private sector in designing new systems.
- Establishing contractual competition early in the acquisition process and continuing it as long as economically beneficial.
- Avoiding premature commitments to full-scale development and production.

Following the determination of mission needs, the A-109 acquisition process is divided into (1) identifying and exploring alternative design concepts, (2) demonstrating alternative design concepts, (3) full-scale development and initial production, and (4) production. The following sections present steps normally to be followed in each segment of the acquisition process. It should be noted that OFPP views A-109 as calling for a flexible process, tailored to fit individual acquisition programs, rather than a "cook-book" which must be rigidly followed.

DETERMINING MISSION NEEDS

New major system acquisition programs are to begin after a mission need is recognized from an "analysis of an agency's mission reconciled with overall capabilities, priorities, and

resources." To be accomplished, this process assumes that an agency would have a definitive mission structure with identified goals and objectives for mission areas. This kind of structure is consistent with section 14 of A-109 which calls for agencies to separately identify research and development funding for (1) technology base, (2) alternative system design concepts to accomplish a mission need, and (3) full-scale development.

A mission need can result from a deficiency in existing agency capabilities, the decision to establish a new capability in response to a technologically feasible opportunity, or a desire to reduce costs in a mission area. Mission needs are to be stated independently of any particular system or technological solution.

The agency head must be the one to approve the mission need, the relative priority to be assigned, and the general level of resources that may be invested.

IDENTIFYING AND EXPLORING ALTERNATIVE DESIGN CONCEPTS

Alternative system design concepts are to be solicited from a broad base of qualified firms, and multiple parallel contracts are to be awarded. Federal laboratories, federally funded research and development centers, educational institutions, and other nonprofit organizations may also be considered as sources for system design concepts. Emphasis is to be placed on generating innovativeness and competition. Care is to be taken not to conform mission needs or program objectives to any known systems or products that might foreclose consideration of alternatives.

DEMONSTRATING ALTERNATIVE DESIGN CONCEPTS

Selected alternative system design concepts are to be advanced to a competitive contractual test/demonstration phase after the agency's mission need and program objectives are reaffirmed. An agency head must decide whether to pursue alternative concepts or to proceed with a noncompetitive (single concept) solution.

FULL-SCALE DEVELOPMENT AND INITIAL PRODUCTION

Alternative systems can enter full-scale development, including limited production, only after the agency's mission

need and program objectives have been reaffirmed and competitive demonstration results verify that the chosen system design concepts are sound. Agency head approval is required.

PRODUCTION

Agency head approval is also required for a system to enter full production. The decision is made only after reaffirming the agency's mission need and program objectives and satisfactorily testing system performance in the expected operational conditions. Operational testing is conducted independent of the agency's development and user organizations. An agency head can grant exceptions to testing requirements.

CHAPTER 3

DOE: A-109 IMPLEMENTATION IS GOING SLOWLY

DOE has yet to incorporate A-109 policy into its day-to-day operations. Implementing A-109 has been slow; some contributing factors are:

- DOE was not established until October 1977, over a year after A-109 was issued.
- The agency's mission structure has not been established.
- An interim program and project management system is now being implemented.

Accordingly, there has been little program action which we could compare with A-109's policy and acquisition framework. DOE's implementation directives reflect A-109 concepts, but, in our opinion, its acquisition approach calls for actions which could conflict with A-109 objectives. Moreover, DOE has been slow in resolving questions raised by OFPP concerning the implementing directives.

BACKGROUND

DOE's budget request for fiscal year 1979 was about \$12 billion. The organizations responsible for major acquisitions are identified as major outlay program offices.

<u>DOE organizations</u>	<u>FY 1979 estimated budget</u>
	(billions)
Energy Research	\$.6
Energy Technology	3.8
Defense Programs	1.7
Resource Applications	4.9
Conservation and Solar Applications	.9
Environment	<u>.3</u>
Total	<u>\$12.2</u>

Each of the above offices is headed by an assistant secretary or, in the case of Energy Research, by a director who reports to the Under Secretary of Energy. The Under Secretary is also the Acquisition Executive responsible for DOE's A-109 implementation.

Basic research and applied research are done by the Energy Research office using in-house laboratories and universities. Further development is the responsibility of the Assistant Secretary of Energy Technology. The results of the Energy Technology effort are passed on to the Assistant Secretary of Resource Applications or to the Assistant Secretary for Conservation and Solar Applications. They, together with private industry, attempt to promote the commercialization of the product or effort. The Assistant Secretary for Environment is responsible for developing policy and issuing guidance to ensure DOE compliance with environmental, health, and safety procedures. He also conducts research and development on the environmental, health, and safety effects of energy technologies and programs. The environmental planning and review process, integrated with technology development, is intended to assure that environmental, health, and safety concerns are assessed early in the research and development cycle and are addressed throughout the advance of research and development.

Activity under the Assistant Secretary for Defense Programs involves directed DOD projects on nuclear weapon design and production. The Defense Programs research work is done by the agency's Los Alamos Laboratory and Lawrence Livermore Laboratory; production activity is done at other locations. It appears that in defense nuclear work, much of A-109 will have little application, since the mission need statement is a DOD responsibility and much of the work is done in Government laboratories.

MAJOR SYSTEM CRITERIA

For the most part, DOE major system acquisitions are those acquisitions whose estimated Government share is over \$50 million in the technology development phase of the acquisition process or \$200 million over the life of the system or project. 1/ Other than this specific dollar criteria, major systems are projects that: (1) are directed at or are critical to fulfilling a DOE mission, (2) entail the allocation of relatively large resources, and (3) warrant special management attention.

DOE has designated 27 ongoing projects as major system acquisitions. A-109's effect on these projects is uncertain, however, because specific solutions have already been selected.

1/DOE's major system acquisitions are "projects" rather than programs and are headed by project managers.

Mission need statements have been approved for two of the ongoing projects and one has been drafted for a third project. Not all of the ongoing projects will have a mission need statement since some are nearly complete. All new major system acquisitions, however, are to begin with a mission need statement.

IMPLEMENTING DIRECTIVES' CONSISTENCY WITH
A-109 IS QUESTIONABLE IN SOME AREAS

The DOE directives for implementing A-109 are: (1) Interim Management Directive 0207 dated February 6, 1978, "DOE Major System Acquisitions," and (2) DOE Order 4240.1 dated June 23, 1978, "Designation of DOE Major Systems." Interim Directive 0207 defines DOE requirements and objectives and assigns responsibilities and authorities for major system acquisitions. DOE Order 4240.1 lists the projects which have been designated as major systems.

These documents implement the A-109 acquisition framework to a great extent. Consistent with A-109, the documents call for:

- The DOE Under Secretary, as the Acquisition Executive, to make four key decisions in the acquisition process.
- Major acquisition projects to begin with a mission need statement defined in terms of the mission, purpose, capability, DOE components involved, schedule, and cost objectives.
- Appointment of a project manager at the time it is decided to pursue alternative concepts to satisfy an approved mission need statement.
- Solicitation of alternative system design concepts from a broad base of qualified firms.
- Competitive exploration of alternative system design concepts.
- Competitive test/demonstration of selected system design concepts.

However, OFPP officials have questioned certain aspects of the DOE directives. We, too, have some reservations about them.

Conflict with OFPP

On April 27, 1978, OFPP advised DOE that a number of serious inconsistencies were noted between Interim Management Directive 0207 and Circular A-109. According to DOE officials, this conflict was not as serious as OFPP indicated and an identical document submitted by DOE's predecessor agency, the Energy Research and Development Administration, was judged to be acceptable by OFPP.

Some of OFPP's concerns related to apparent inconsistencies between the DOE directive and attachments to it. In our opinion, of the inconsistencies pointed out by OFPP, the most significant concern sections which call for (1) identifying system design concepts before approving the mission need statement or appointing a project manager and (2) strong DOE technical direction for all systems. In addition, the directive sets out responsibilities for the Director of the Office of Energy Research and the Assistant Secretaries. Some of these responsibilities--(1) tailoring an acquisition strategy, (2) exploring alternative system design concepts, and (3) demonstrating and evaluating competing systems--are project manager responsibilities under A-109. OFPP recommended that the role of the project manager be recognized.

In October 1978, 6 months after OFPP's letter, DOE and OFPP officials met to discuss OFPP's objections. No written record was prepared concerning the agreements reached. However, according to a DOE official, as a result of the October meeting, the only action to be taken by DOE is to change the name of the first phase of the acquisition process. Some of the other OFPP objections may result in future revisions of the directive, but the official was uncertain as to when the revisions might be made. OFPP officials are still concerned about the directives in their present form.

From our review of the DOE directive, including OFPP's comments and discussions with DOE officials, our opinion is that DOE's acquisition approach may be inconsistent with the intent of A-109 regarding (1) the identification of mission needs stated independently of specific system solutions and (2) the opportunity for industry innovativeness and open competition in responding to requests for proposals (RFPs) to satisfy mission needs.

Since the initial acquisition phase under A-109 had not been completed for any project no actual experience could be evaluated. When questioned on these matters, DOE officials

replied that, while alternative concepts may be identified and included in the mission need statement, the project manager may solicit private industry for alternative concepts. Our concern, however, is that the approach could narrow alternatives so that acquisition is directed to a specific solution, limiting open competition and industry innovation in identifying and exploring alternative solutions. Identifying a possible solution--either formally in the mission need statement or informally--could be construed by industry to mean that the agency would accept only that solution.

DOE's policy, calling for the agency to exert strong technical direction on all DOE systems, appears to be inconsistent with A-109's policy calling for industry to be able to submit the technical ideas it feels are superior. OFPP's response to the DOE directive was that "* * * strong technical direction is not needed when competition drives the concepts."

DOE's response to our draft report was that:

"* * * it should be noted that DOE's R&D [research and development] work entails the involvement of a broad spectrum of academic and industrial entities providing ideas and concepts for consideration in initial activity associated with mission and legislative analysis. Consequently, any preliminary identification of potential alternative concepts will have a significant amount of non-DOE content."

In our opinion, this statement supports our concern. A great deal of Government/industry/academic interchange is desirable, especially in technology base activities; but A-109 specifically calls for alternative system design concepts to be solicited from a broad base of qualified firms, with emphasis on innovation and competition. DOE's statement implies that DOE would identify potential alternative concepts based on input from many industry and academic sources--exactly the system design approach criticized by the Commission.

ESTABLISHING A MISSION STRUCTURE

As stated in chapter 2, the intended foundation for A-109 is an agency mission structure with mission areas and approved objectives. The mission areas and their objectives allow the agencies to conduct mission analysis to reconcile resources and capabilities against objectives. Mission needs are identified through this analysis.

DOE's initial budget was for the President's fiscal year 1979 budget request. DOE is in the process of identifying its mission areas. Mission analysis--as envisioned by A-109--will then be done, according to agency officials, under the direction of the Assistant Secretary for Policy and Evaluation, the other DOE Assistant Secretaries and the Director of Energy Research. The mission structure is also critical; it enables the agency to present and the Congress to evaluate new program starts based on their need.

IMPLEMENTING A PROGRAM AND PROJECT MANAGEMENT SYSTEM

DOE is in the process of implementing a program and project management system. The implementing directive (currently in draft form) identifies the responsibilities of various management levels from the Under Secretary to the project manager and describes the project charter, program management plan, and the project management organization. On May 31, 1978, an interim management system in response to the draft directive was approved. The system is being reviewed and, as of June 1979, is expected to be finalized through formal policy directives in the near future.

DEVELOPING TRAINING PROGRAMS

In 1976, OMB provided 46 officials of the Energy Research and Development Administration with either a 1- or 2-day briefing on A-109 policy. The briefings were given to headquarters executives, department heads, and program managers. As of June 1979, DOE has designed and conducted project planning and management courses: a 10-day course, a series of five 3-day courses, and a 6-day course. The courses are being provided to management personnel throughout fiscal year 1979 and about 400 people are expected to attend. A review of A-109 is included in the courses. In addition, DOE officials submitted names of over 600 candidates for OFPP-sponsored A-109 training and, as of June 1979, about 10 people had attended.

CONCLUSIONS AND RECOMMENDATIONS

A complete assessment of DOE's implementation of A-109 policy cannot be made at this time. A-109 policy has not been implemented into DOE's day-to-day operations and there have been no approved mission need statements for "new start" programs. Full implementation will not be accomplished until ongoing efforts to establish an agency mission structure and a program/project management system have been completed.

DOE has been slow in resolving OFPP's questions about DOE's implementing directives. DOE's implementing directive and planned acquisition approach call for strong technical direction by DOE and for alternative system options to be identified and evaluated before the mission need statement is approved. We believe this approach could narrow alternatives and limit industry innovativeness and open competition.

We recommend that the Secretary of Energy:

- Resolve the OFPP objections to its current implementation directive.
- Evaluate and revise the agency's planned acquisition process, as necessary, to make sure that identifying and evaluating alternatives before approval of a mission need do not limit competition and industry freedom to be innovative.

AGENCY COMMENTS

DOE's comments on specific sections of our draft report have been considered and, where appropriate, discussed above. In addition, according to DOE, our draft report did not adequately describe the problems it faces or provide a useful independent review of DOE's progress and success. With regard to this general comment, it should be noted that our objective was to review and assess A-109 implementing actions. As stated above, DOE had not yet incorporated A-109 into its day-to-day operations; therefore, our assessment was limited to review and discussion of DOE's implementing directive.

CHAPTER 4

DOT: IMPLEMENTING DIRECTIVES AND ACQUISITION

APPROACH ARE NOT FULLY CONSISTENT WITH A-109

When our field work was completed, no DOT major systems acquisitions were being carried out under the acquisition process envisioned by the Commission on Government Procurement and established by A-109. ^{1/} Moreover, DOT and agency components' implementing directives present acquisition approaches which are inconsistent with the intended A-109 reforms. The most important inconsistencies concern the Government/industry role in identifying and exploring alternative solutions to mission needs and maintaining competition between selected alternative approaches.

BACKGROUND

DOT is comprised of the Office of the Secretary of Transportation (OST) and eight operating components

- Federal Aviation Administration (FAA),
- Coast Guard,
- Urban Mass Transportation Administration (UMTA),
- Federal Railroad Administration (FRA),
- Federal Highway Administration (FHWA),
- Research and Special Programs Administration,
- Saint Lawrence Seaway Development Corporation, and
- National Highway Traffic Safety Administration (NHTSA).

DOT's fiscal year 1979 budget contained an estimated \$17.3 billion in obligations. Two-thirds of this amount, or about \$11.8 billion, was for grants to State and local governments for such things as highway systems, mass transportation systems, and airport planning and construction. A-109 does not discuss grants, and OFPP has taken the position that grants do not fall under A-109.

^{1/}Subsequently, in November 1978, DOT designated 11 programs (mostly ongoing) which will follow its A-109 implementing directives.

MAJOR SYSTEM CRITERIA

DOT's definition of major systems is consistent with A-109's. It includes programs directed at and critical to fulfilling a departmental mission, entailing the allocation of relatively large resources, or warranting special management attention. DOT classifies as major systems those programs having \$150 million or more total acquisition costs or \$25 million or more research and development costs. These criteria were established following discussions with officials from the DOT components, the research and development staffs, the program staffs, and the Office of the Secretary. DOT's major concern in setting the criteria was the number of program reviews the Deputy Secretary would be able to undertake. DOT officials said that the established criteria would result in three to five new major system starts each year. Discussions with DOT officials indicate that the dollar criteria will probably be the major factor in designating major systems.

DOT's dollar criteria exclude almost all acquisitions of most components from being categorized as major systems. For these reasons, DOT officials told us that only FAA and Coast Guard are expected to routinely have major system acquisition programs. DOT's list of major system acquisitions which will follow A-109 also includes acquisitions of three other DOT components--FRA, NHTSA and UMTA. These systems are in various phases of the acquisition process.

Estimated FAA obligations for fiscal year 1979 are approximately \$3 billion. These include obligations for research and development and for equipment estimated at about \$93 million and \$133 million, respectively. Estimated Coast Guard obligations for fiscal year 1979 are approximately \$1.5 billion. These include obligations for research and development and for equipment estimated at about \$20 million and \$154 million, respectively. Most FAA and Coast Guard acquisitions are for modernization or replacement of existing systems or subsystems.

IMPLEMENTING DIRECTIVES

The DOT directive for implementing A-109 (DOT Order 4200.14A) was not issued until May 17, 1978. An earlier directive (DOT Order 4200.14) established a task force whose efforts resulted in the May 1978 instruction; however, the earlier directive was not intended to apply to programs. FAA and the Coast Guard have also issued implementing directives.

DOT's prior acquisition process

Prior to A-109, DOT had recognized the importance of a high-level review process for the major systems. DOT Order 4200.9, "Approval of Acquisitions of Major Systems," dated September 7, 1971, established policy and procedures for Secretarial approval of major system acquisition decisions. It called for a Transportation System Acquisition Review Council (TSARC) to evaluate the desirability of proceeding to the next phase of the acquisition process. It also called for an acquisition paper to explain and support proposed actions. Under this order, the Deputy Secretary can and often has waived the requirement for individual TSARC's. Programs estimated to cost over \$10 million or whose total research, development, and demonstration cost is estimated to exceed \$1 million were subject to a TSARC review and the other policies and procedures set forth in the order.

DOT Order 4200.9 was superseded by DOT Order 4200.9A, dated August 29, 1978. One revision increased the cost thresholds to \$20 million total cost or \$5 million in research and development costs over a 3-year period.

A-109 implementing directives

DOT Order 4200.14, "Major Systems Acquisitions Review & Approval", described the planned procedures for implementing A-109, provided temporary guidance to agency components, and required establishing a task force to integrate the requirements and intent of A-109 into the DOT management processes. As a result, on May 17, 1978, DOT Order 4200.14A was issued.

The directive designates the Deputy Secretary of DOT as the Acquisition Executive. The Deputy Secretary is responsible for designating major systems and for approving the key decision points in the acquisition cycle. The order requires ongoing acquisitions to be considered for designation as major systems under A-109. DOT officials said that they will consider all programs, but not all will be subjected to A-109, since some are near completion.

Within the Office of the Secretary of Transportation (OST), the responsibility for implementing A-109 is shared by the Office of Installations and Logistics and the Office of the Assistant Secretary for Budget and Programs. The Office of Installations and Logistics coordinates the required paperwork on major system programs of the agency components and submits it to the Deputy Secretary for approval. A representative from that Office serves as the executive

secretary for TSARC meetings. Within the Office of the Assistant Secretary for Budget and Programs, the Office of Programs and Evaluation is responsible for monitoring A-109 implementation.

Responsibilities for A-109 implementation were added to existing responsibilities of the affected DOT personnel. No additional personnel have been brought into these organizational elements to implement A-109, and no one has A-109 implementation as his or her sole responsibility.

DOT Order 4200.14A calls for the four agency head decision points in A-109 and calls for a TSARC review at each decision point. The order discusses procedures for identifying, validating, and documenting requirements. It also requires an Acquisition Paper for the first key decision point, identifying a mission need, and updating Acquisition Papers at the remaining key decision points. The Acquisition Paper explains and supports the acquisition of the major system. It describes the mission need, discusses proposed solutions to the need, and sets forth an acquisition strategy.

Both FAA and the Coast Guard have issued directives implementing DOT Order 4200.14A. Some DOT components were not contacted because of their low level of research and development and procurement funding. Other components contacted, including UMTA, FRA, and FHWA, did not plan to issue additional implementing directives.

UMTA has no plans to change the way it will manage programs which fall under A-109, except for the Secretarial review of the four key decision points. An UMTA official told us that only one program every 3 or 4 years is expected to meet the major system dollar criteria.

No FRA individual or office has been assigned responsibility for implementing A-109 and no substantive changes are planned in the way FRA manages its system acquisitions. FRA officials said that they will only rarely have a program which will meet the major system criteria. FRA has no scheduled milestones regarding A-109 implementation and no training is planned.

FHWA officials said that they do not expect any FHWA program to meet the DOT costs criteria for a major system. They plan neither to issue any orders to implement A-109 nor to conduct A-109 training.

Because of the relatively small size of their budgets for equipment, we did not contact the remaining DOD components.

IMPLEMENTING DIRECTIVES ARE NOT
FULLY CONSISTENT WITH A-109

In our opinion, the DOT, FAA, and Coast Guard implementing directives contain conflicting approaches and are not consistent with A-109. OFPP officials also evaluated the DOT directive and reached similar conclusions about its limitations.

Overall, the DOT order is lacking in the sections that would cause the greatest changes to the way DOT is conducting its major system acquisitions. The way the order presently reads, we believe DOT would not, to any great extent, change the way it acquires major systems. According to one DOT official, the basic differences from the former DOT acquisition process and the acquisition process now prescribed for major systems is (1) a greater formality to the acquisition process, (2) earlier identification of programs for high-level handling, and (3) regular reporting on the system throughout its life. While these changes are in keeping with A-109 policy, other key provisions are not addressed such as the need for continuing mission area analysis, appointing a project manager, and formally soliciting industry to identify alternative solutions.

The following sections present our concerns about the implementing directives.

DOT directive

Mission analysis

A-109 calls for determining mission need on the basis of analyzing an agency's missions, reconciled with overall capabilities, priorities, and resources. The DOT directive does not give detailed guidance to DOT components as to how mission needs are to be recognized. Attachment 1 to the directive, "Development of Mission Needs and Economic and Policy Considerations," implies that contrary to A-109, mission needs are determined apart from mission analysis and that mission analysis is performed to support a planned program.

Identifying and exploring
alternative design concepts

A-109 emphasizes generating innovation and conceptual competition from industry in identifying and exploring alternative system design concepts to satisfy an approved mission need. It also calls for each offeror to be free to propose

its own technical approach, main design features, subsystems, and alternatives and for contracts covering relatively short time periods at planned dollar levels during the uncertain period of identifying and exploring alternative design concepts.

The DOT implementing directive either is unclear in its treatment or does not cover certain aspects of the A-109 acquisition framework. The directive

- calls for DOT departmental elements to develop programs for satisfying mission needs before the mission needs have been approved;
- contains no mention of using short-term parallel contracts for exploring alternatives; and
- does not convey the role of industry as described in A-109, regarding the competitive exploration of alternatives.

Developing a program to satisfy a mission need before the need is approved is inconsistent with A-109 and could narrow the alternative approaches.

According to DOT officials, no changes to the agency's practice are planned. We were told that:

- Officials do not want to "exercise" industry needlessly, but will allow industry to propose solutions to mission oriented needs "when it makes sense."
- There is not always enough money in the research and development budget to solicit industry to devise alternative solutions.
- The identification of alternatives is generally done in-house.
- One agency component has clear and open lines of communication with industry's ideas through various consultative planning conferences, through which general needs are presented and the industry input is used to define solutions to agency needs.

Program manager

According to A-109, a program manager should be designated when a decision is made to pursue alternative design concepts. A-109 requires the program manager's tenure to be

long enough to provide continuity and personal accountability for the program. The DOT directive does not address these issues in detail.

FAA directive

We found that the acquisition management framework described in FAA Order 1810.1A is not consistent with A-109 in several important respects. The FAA order is not consistent with the A-109 requirement regarding four agency head decision points. The order calls for two agency head decisions-- approval for entering the development phase and the implementation phase of a system acquisition. Under the FAA order, a preferred solution would be selected within FAA and be proposed to the FAA Administrator. Development, if necessary, would begin after agency head approval.

The FAA approach does not call for formally soliciting industry in nonequipment terms to identify alternative solutions which would then be competitively explored. Rather, the approach calls for in-house study and evaluation of potential requirements by a system requirements group with informal input from industry, government agencies, and others and for selecting a solution to the requirement without formal competition.

Another inconsistency concerns the role of the program manager. A-109 calls for designating a program manager for each major system acquisition when a decision is made to pursue alternative design concepts. Considering alternatives in the FAA approach is done in-house by a system requirement group before the program manager is appointed. The desired continuity and personal accountability espoused in A-109 would not be achieved.

An agency official said that consistent with the provisions of DOT Order 4200.14A, the FAA is now preparing an order to implement and supplement the DOT order. This order, expected to be issued soon, refers to the four key decision points in the A-109 acquisition process. The order requires a submission of candidate major system programs to OST annually on May 1. No changes are planned regarding the analysis of alternative design concepts or the assignment and responsibilities of a project manager. Basically, the order will establish offices and individuals within FAA responsible for the documentation required in DOT Order 4200.14A.

According to DOT officials, FAA Order 1810.1A is a working-level order which supplements other DOT and FAA orders. According to FAA officials, it will be revised soon to make its language consistent with the DOT implementing order. For example, approval for major programs will be by the OST rather than the FAA Administrator.

Coast Guard directive

The revised appendix S of the Coast Guard's Planning and Programing Manual deals principally with the appointment and functions of the program manager and refers to the DOT implementing order for a "complete understanding" of the "complicated process." As previously discussed, however, we believe the DOT order does not completely and accurately present the A-109 acquisition framework.

Other than appendix S, the Coast Guard has not made any formal changes to implement the DOT order and A-109.

PROGRAMS UNDER A-109

We planned to review programs being carried out under DOT's interpretation of A-109 as a further assessment of implementation effort. At completion of our detailed review, however, no new program had been started under A-109. Subsequently, DOT's response to our draft report listed 11 (mostly ongoing) programs which the Deputy Secretary identified as major system acquisitions in November 1978. The components with major systems were Coast Guard (1), FAA (6), FRA (2), NHTSA (1), and WMTA (1).

DOT officials said that with the issuance of the DOT order, DOT's A-109 implementation plan had been completed. DOT's order includes a requirement that each agency component provide a list of new or ongoing candidate major systems to the Assistant Secretary for Budget and Programs on May 1 of each year.

The Coast Guard's Arctic-Great Lakes Class Icebreaker program was designated a major system acquisition under the DOT order. Coast Guard officials said that only rarely do they expect to have a program meeting the major system cost criteria. For its icebreaker program, the Coast Guard is considering passing over the competitive test/demonstration and the full-scale development phases and proceeding directly to the full-production decision point. Coast Guard officials believe that they have complied with the intent of A-109

through in-house effort by their Plans and Evaluation Division. We disagree in that this kind of approach in evaluating alternatives was criticized by the Commission and is inconsistent with A-109.

Currently, 10 ongoing systems within FAA are under FAA Order 1810.1A. Not all meet the DOT major system cost criteria. In November 1978, six FAA programs were designated as major system acquisitions under the DOT order.

Training plans

Presently within OST there are no formal plans for the training or orientation of DOT employees to the A-109 concepts. At the request of OFPP, OST designated an official responsible for A-109 training; however, he has just recently been assigned this responsibility. The Coast Guard and FAA have no training plans for implementing A-109. Coast Guard officials stated, however, that project managers will be sent to DOD courses for program management. Other Coast Guard personnel may be sent to short courses or seminars.

The absence of training plans is consistent with agency officials' position that Secretarial approval of key decision points is the only change from the agency's prior program review process. No other substantive changes are planned in new or ongoing programs as a result of the DOT order or A-109.

CONCLUSIONS AND RECOMMENDATIONS

DOT seems to have placed a low priority on A-109 implementation, evidenced by the time required for DOT to issue implementing directives and no DOT programs being carried out under A-109 when our review was completed. Moreover, neither the DOT, Coast Guard, nor FAA implementing directives call for certain key A-109 concepts. A-109 concepts excluded from one or more of these directives are

- agency head approval of a mission need before identifying and exploring alternative solutions;
- formally soliciting industry to obtain alternative design concepts;
- designing systems by industry rather than in-house;
- competitively exploring proposed industry solutions;
and

--maintaining competition as long as it is economically feasible.

We recommend that the Secretary of Transportation revise the DOT and agency component directives to reflect the intended A-109 acquisition approach. These revisions should be coordinated with OMB/OFPP.

AGENCY COMMENTS

DOT's comments on our draft report stated, in part, that the DOT order and the FAA and Coast Guard implementing directives are not intended to stand alone, but provide the additional guidance necessary to implement A-109 and should be read in conjunction with it. DOT's opinion was that no revision to the DOT or Coast Guard order was required and that our notice of some of the FAA inconsistencies had been recognized. Accordingly, FAA will issue a new directive.

DOT did not address the specific objections we had to the DOT order. Regarding this order, our principal concerns were in the areas of analyzing missions and of identifying and exploring alternative design concepts. (See pp. 17 and 18.) In our opinion, from our review of the DOT order and from discussions with agency officials, conflicts with A-109 do exist and should be resolved.

In addition to Coast Guard and FAA, DOT components with designated major acquisitions are UMTA, NHTSA, and FRA. We did not contact NHTSA because of the small size of its research and development and procurement funding. UMTA and FRA officials, however, informed us that they do not expect to revise their directives or to issue new ones to implement A-109. Directives of these three components should be considered in implementing our recommendation.

CHAPTER 5

GSA: THIRD EFFORT TO IMPLEMENT A-109 IS UNDERWAY

GSA is now into its third distinct effort aimed at implementing A-109. This latest effort was started after congressional hearings on June 23, 1978, disclosed that the ongoing implementation approach, particularly in GSA's Public Buildings Service (PBS), was not consistent with A-109.

Since the hearings, GSA's principal effort has been in drafting two pamphlets which will be issued by OFPP; one on major space acquisitions and the other on the acquisition of automatic data processing (ADP) and telecommunications systems.

GSA and OMB/OFPP plan to describe an acquisition process in these pamphlets which is acceptable to GSA, OMB/OFPP, and the appropriate congressional committees. GSA will then revise its existing (issued or draft) implementing directives to reflect the approved process, and will then begin implementing the process into its day-to-day operations. Ongoing programs will be reviewed on an individual basis to see if A-109 can and should be applied. New starts will fall under A-109.

Therefore, GSA's approach to implementing A-109 is now being developed, and the agency has not yet conducted acquisitions under A-109. Meaningful evaluation of GSA's current implementation approach and results must await these actions.

BACKGROUND

GSA is a key agency in A-109 implementation because of its own public buildings and ADP and telecommunications acquisitions and because it often acts as the executive agent in these kinds of acquisitions for other Federal agencies.

For major system acquisitions of other agencies, GSA must decide whether to act as the executive agent for the acquisition or to delegate acquisition authority to the acquiring agency. GSA and the acquiring agency are responsible for insuring compliance with A-109 for those portions of the acquisition process over which they are the executive agent.

MAJOR SYSTEM CRITERIA

GSA has defined "major system" as

"* * * a combination of elements that functions together to produce the capabilities required to fulfill a mission need. Major system acquisitions are those that:

- (1) Are directed at and critical to fulfilling an agency mission;
- (2) Are estimated to entail the allocation of \$25 million or more in current year dollars. In the case of space acquisitions, a major system will be designated if it is estimated to be \$25 million or more in cost or 250,000 square feet of space; or
- (3) Has [sic] been determined by the Administrator to be of critical importance to the agency, technologically advanced, or warrants special management attention."

This criteria applies to GSA's acquisitions. According to a 1976 GSA study, this threshold would include about 17 percent of then ongoing public building projects and would represent about 67 percent of GSA funding for public building acquisitions. GSA is now considering a change to the above criteria whereby the square footage requirement would be changed to 250,000 square feet of occupiable space.

Other agencies' acquisitions would be designated as major systems based on the agency's own criteria. Therefore, a \$25 million data processing acquisition would be a major system in GSA, but would not meet the major system criteria (dollar criteria only) for many other agencies.

ORGANIZATIONAL STRUCTURE FOR IMPLEMENTING A-109

A-109 required that the head of each agency designate a focal point for integrating and unifying the system acquisition management process and monitoring policy implementation. On September 3, 1976, GSA's Deputy Administrator was designated as the GSA Acquisition Executive, and on September 30,

1976, GSA established the Office of Systems Acquisition to facilitate A-109 implementation. This Office consisted of two professional staff members, reporting to the Deputy Administrator.

The Office of Systems Acquisition was subsequently abolished effective August 26, 1977. This Office had prepared an OFPP-required A-109 implementation plan and had tried to issue a GSA implementing order. According to a GSA official, the draft implementing order was near approval when the Acquisition Executive determined that there was no longer a need for a separate organizational entity to handle A-109 matters.

A two-person staff in the office of the Acquisition Executive was then assigned responsibility for A-109 matters. There was also one person in PBS and one person in the Automated Data and Telecommunications Service (ADTS) who were assigned implementation responsibilities in addition to their usual responsibilities.

GSA's overall implementing directive, ADM 5400.33, was issued on August 1, 1977. In addition, PBS issued an implementation order (PBS 5400.18) on March 24, 1978. The PBS Commissioner appointed the Assistant Commissioner, Office of Space Planning and Management, to implement A-109 in PBS.

ADTS also drafted an order to implement A-109. The Director of the ADTS Office of Management Policy Planning was in charge of ADTS implementation of A-109.

On June 23, 1978, however, hearings were held on GSA's implementation progress before the Senate Subcommittee on Federal Spending Practices and Open Government, Committee on Governmental Affairs. OFPP and GAO officials testified at these hearings that GSA's planned approach for PBS was not consistent with A-109. In his testimony, the GSA Administrator acknowledged that GSA was not implementing the A-109 reforms and said that he would resolve the A-109 situation by transferring responsibility for implementation, giving it the highest priority in GSA, and personally monitoring the activity until he is convinced that GSA is in full compliance. His actions resulted in the current implementation effort.

Following the hearings, the Administrator directed the Director, Office of Policy, Planning, and Evaluation, to ensure that revised GSA implementation orders will fully comply with A-109. A revised GSA implementation order, a revised PBS implementation order, and the ADTS implementation order

have been drafted and; as of June 1979, issuance was expected shortly after swearing in of a new GSA Administrator. The new Administrator was sworn in on July 2, 1979.

PREVIOUS IMPLEMENTATION APPROACH WAS
NOT CONSISTENT WITH A-109

In implementing A-109, agencies responsible for major systems acquisition were required to submit a time-phase plan by October 5, 1976, outlining their implementation. GSA submitted a comprehensive implementation plan to OFPP on October 5, 1976. According to a cover letter transmitting the plan, the Administrator was in complete accord with the intent of A-109 and that the proper methods of integrating the concept into the firmly entrenched practices in GSA were being investigated. However, the plan did not have the enthusiastic backing of all factions within GSA. A concern was that GSA might be locking itself into a fixed policy to which there might be little modification. Because of this, GSA reserved the right to submit modifications to ensure that the implementation of A-109 was in agreement with the prerogatives granted by law to the Administrator of GSA.

OFPP assessed GSA's implementation plan in an October 26, 1976, letter:

"The plan * * * reflects a praise-worthy effort by GSA. The schedule of changes contained in your time-phase action plan reflects a good approach in implementing our Circular A-109."

GSA's planned implementing actions were to include (1) establishing a structure/organization for implementing A-109, (2) conducting a series of eight acquisition policy studies, (3) issuing agency regulations, (4) identifying and applying A-109 to ongoing and planned major system acquisitions, and (5) developing GSA training needs for A-109. According to the plan, A-109 was to be fully implemented within GSA by January 1980.

In July 1976, the GSA Administrator initiated a study to identify activities to which A-109 would be applied. The study identified the following activities:

--Public Buildings Service: PBS is involved in acquisition of space. This would include lease, construction, lease-construction, and purchase of new buildings; major alterations or repairs to existing buildings; and combinations of the above.

--ADTS: ADTS is involved in the acquisition of major ADP and telecommunication systems.

--Federal Supply Service (FSS): Most FSS commodity programs, transportation services, and stockpile management would not come under A-109. However, certain major high-impact programs or major motor vehicle procurements could use major acquisition system management methods.

Acquisition policy studies

Several acquisition policy studies were to be conducted, beginning in October 1976 as part of GSA's plan for accomplishing the required A-109 changes. Each study was to include a plan for implementing its recommendations.

The studies covered

- (1) agency cost estimating capability and analysis,
- (2) impact of agency mission,
- (3) impact on current legislative requirements and procurement regulations and related OMB circulars,
- (4) impact on budget and funding process,
- (5) impact of client agencies,
- (6) impact on the established organizational structure of each service,
- (7) impact on training, and
- (8) impact on agency processes.

According to a GSA official, only three of the studies (1, 4, and 7) were completed; none were approved by the Administrator, and the study effort was discontinued about May 1977. Shortly thereafter, the Office of Systems Acquisition was abolished following internal conflicts about whether A-109 should be applied to PBS and ADTS.

GSA conflict concerning A-109 implementation

Although viewed by OFPP as a good approach to implementing A-109, the implementation plan encountered internal GSA resistance. On November 5, 1976, the Deputy Administrator

informed the Administrator that the Commissioners of ADTS and PBS had not accepted the implementation plan as the direction they would like to accept for their own services. He further stated that, "As a result, there is a direct confrontation at the staff level between your direction and their practices." GSA revised the implementation plan in January 1977, because the various services within GSA had difficulty in meeting the plan's timetables. The timetables were revised to allow adequate time in responding to each of the implementation items.

Implementing directives

According to its implementation plan, GSA was to issue major systems acquisition directives on December 10, 1976. These directives were to address the applicability of A-109, define major systems, including space or cost thresholds, and describe the general roles and responsibilities of all affected offices and services. By October 1, 1977, the services were to either modify existing orders or create new orders and procedures to reflect compliance with A-109 and the GSA policy orders.

On December 20, 1976, GSA provided OFPP with a draft of its implementing order for review and comment. A number of revisions were subsequently drafted and circulated within GSA for comment until GSA Order 5400.33 was issued on August 1, 1977. The final version was not coordinated with OFPP.

In February 1978, GSA sent OFPP a copy of the proposed PBS implementing order. According to OFPP comments on the draft on March 21, 1978, only about 50 percent of what was contained in A-109 was addressed. OFPP suggested that GSA analyze the draft against each paragraph of A-109 and either include appropriate A-109 language or reference other PBS policies or procedures containing the policy. The comments stated that OFPP would like to review the revised order prior to its issuance.

On March 29, 1978, OFPP provided GSA with a flow diagram which presented a possible approach for the consideration of alternatives for PBS acquisitions. According to OFPP, A-109 is fully compatible with the Federal Acquisition Act currently under consideration by the Congress, and OMB Circulars A-76 and A-104.

On March 24, 1978, 3 days after OFPP's initial comments, PBS issued Order 5400.18 virtually unchanged from the draft that OFPP reviewed. According to GSA's April 10, 1978, response to OFPP's comments on the draft order, a number of OFPP's recommendations would be included in the next revision of the order. In addition, pending such revision, the recommendations would be incorporated into the major system acquisitions training programs and supplemental working papers for acquisition personnel.

At that time, ADTS had not issued an implementing order, but was processing a draft order.

GSA's position on implementation--
prior to June 1978 hearings

In an April 5, 1978, letter, OFPP requested (1) a status report on GSA's implementation, (2) an updated time-phased action plan for complete implementation, (3) a list of all new major systems acquisition starts included in fiscal year 1978 and 1979 budgets, and (4) identification of a focal point for training and orientation so that the Federal Acquisition Institute could assist in scheduling courses. GSA provided this data on May 23, 1978. According to GSA, the implementation of A-109 had occurred both on an agency-policy level and a service-operation level. However, a number of problems had been experienced in adopting their operations to A-109 procedures because of various legal and practical constraints. GSA's further opinion was that most of the problems had been worked out and that they were following A-109 procedures in all major system acquisitions.

Implementation efforts evaluation

On June 23, 1978, GAO, OFPP, and GSA officials testified on GSA's progress in implementing A-109, principally in PBS. Our testimony concluded that GSA's planned implementation did not call for substantive changes from its previous acquisition process, and that some key elements of the acquisition process recommended by the Commission on Government Procurement and included in A-109 were not in GSA's process. Also, our conclusion was that GSA and OFPP had differing opinions on A-109's application to public buildings, but had not been working to resolve these differences.

In our opinion, because GSA has redirected its A-109 implementation effort, a detailed discussion of our evaluation is not warranted. Generally, however, A-109 elements excluded from GSA's proposed acquisition process were:

- Agency head approval of a mission need before identifying and exploring alternative solutions. (GSA/PBS planned to present the mission need and a recommended solution to the Administrator at the same time.)
- Communicating mission needs promptly to the Congress before identifying and exploring alternative solutions. (The first GSA/PBS presentation would have been a request for funds for its selected solution.)
- Soliciting alternative system design concepts from a broad base of qualified firms. (GSA/PBS planned to continue using its in-house market survey technique to identify alternatives.)
- Maintaining competition between alternatives as long as economically beneficial. (Under the GSA/PBS approach, a solution to a need would be selected and competition would end much earlier in the acquisition process than intended by A-109.)

IMPLEMENTATION PROGRESS SINCE JUNE 23, 1978

Since the June 23, 1978, hearings, implementation progress by GSA and OFPP include

- a draft change to the GSA order on major systems acquisition in PBS;
- a draft OFPP pamphlet on major space acquisition;
- a new GSA policy that the final selection of architect-engineer firms shall be based on conceptual drawings depicting design alternatives and including life-cycle cost and projected budget considerations;
- a revised draft of a GSA order on major system acquisitions in ADTS;
- a Federal Procurement Regulation (FPR) which clarifies the relationship between A-109, FPRs, and Federal Property Management Regulations for major ADP and telecommunications acquisitions by the executive branch;
- a draft OFPP pamphlet on acquisitions of major ADP and telecommunications systems;

- establishment of a GSA Office of Acquisition Policy;
- 71 people trained or scheduled for training in the systems acquisition process before the end of fiscal year 1979; and
- a draft policy on the use of project/program management in GSA.

In addition, GSA plans to issue directives on life-cycle costing, design-to-cost and functional specifications.

At the completion of our review, the GSA orders and the pamphlet on space acquisition needed further revision. As previously stated, priority has been given to the two OFPP pamphlets. Preparation and issuance of the change for the GSA order for PBS and the GSA order for ADTS will then be completed. GSA officials said that these documents will be consistent with the OFPP pamphlets. Target dates for the various steps to be taken to issue these and to complete the implementation of A-109 have not been established. The draft pamphlets will be widely distributed for comment, therefore, several months may elapse before they are issued.

ADTS

We reviewed the latest available draft order for ADTS. The draft OMB/OFPP pamphlet was not completed in time for our review. Generally, the draft order was consistent with A-109.

PBS

OFPP has directed that A-109 will not be applied to any major space acquisition program until the implementation approach developed by GSA has been coordinated with OMB and presented to the House and Senate Public Works Committees. OFPP officials reviewed the draft change to the GSA order for PBS and the draft OFPP pamphlet on acquisitions (prepared by GSA) and recommended specific revisions. GSA officials acknowledged the shortcomings and are making the revisions. Again, priority has been given to revising the OFPP pamphlet.

The major problem currently being addressed for space acquisitions concerns a conflict between GSA practice in implementing Public Law 86-249 (40 U.S.C. §§ 601-616) and the A-109 acquisition process relative to the identification and exploration of alternative solutions. Current practice is for GSA to present a prospectus to the Congress identifying the selected approach to satisfy space needs. The Congress

then normally authorizes and appropriates funds to implement the solution.

GSA interprets the law to mean that it is prohibited from spending money--other than for in-house effort--toward a solution to a space need until a resolution has been adopted by the Public Works Committees of the House and Senate if the solution is expected to involve a total expenditure in excess of \$500,000. Under A-109, GSA would spend money for private industry to identify and explore alternative solutions before the final solution is selected. These expenditures would conflict with GSA's interpretation of the statute.

OFPP, OMB, and GSA officials have been considering alternative approaches to resolve this conflict including changing the way projects are approved and funded. Their recommended approaches will be presented to the budgeting side of OMB and to the appropriate congressional committees.

CURRENT BUDGET FORMAT IS NOT CONSISTENT
WITH A MISSION BUDGETING APPROACH

To be most effective the A-109 acquisition process requires (1) an agency mission structure so that mission objectives and capabilities can be analyzed to determine needs and (2) mission-oriented budget data so that the Congress can relate budget requests to agency missions. According to GSA officials, GSA's mission structure is contained in its organization manual.

Mission analysis includes the reconciliation of long-term projections of mission capabilities, needs, and priorities with agency resources and capabilities. In addition, mission analysis is conducted by various functional organizations in the GSA services and staff offices.

Mission budgeting links an agency's missions or basic responsibilities to its activities and their proposed funding. Descending levels of the structure focus more sharply on specific purposes and needs and the programs to satisfy them. GSA's fiscal year 1979 budget, however, was submitted in zero-base budgeting terms only, rather than in a mission structure. According to GSA officials, the zero-base budgeting presentation is a mission budget and its fiscal year 1979 budget presentation follows the requirements of Section 601 of the Congressional Budget Act of 1974. We disagree. The GSA budget presentation is structured on end-purpose or solution terms, such as for lease or construction programs. This

structure resulted because the type of solution (such as lease, construction, or purchase) was selected before the funding or budgeting request was prepared.

With the implementation of A-109, a major system acquisition program will require funding before the type of solution has been selected. The current budget request format will require some addition or modification to reflect the early funding for identification and exploration of alternative system concepts.

TRAINING NEEDS ARE BEING ASSESSED

At the beginning, our review was intended to assess GSA's training plans, objectives, and accomplishments. However, the planned implementation then did not reflect critical changes called for by A-109, and GSA's training needs had not been determined.

The only A-109 training received by GSA personnel had been through seminars conducted by the Federal Acquisition Institute. Ten people had attended an Institute seminar and 10 commissioners had attended a lecture on A-109 during a Regional Commissioner's Conference. Twenty-seven other GSA employees also heard the lecture.

At that time, GSA officials said there was no need for training large numbers of people because there had been no major changes as a result of A-109 implementation. According to these officials, the biggest change was that the Administrator would be involved in the major decisions in the acquisition cycle. Previously, the Administrator may not have been involved.

According to the acquisition policy study, under GSA's first effort to implement A-109, there was an A-109 training requirement for 234 GSA personnel. The study recommended that each service prepare detailed training plans for personnel involved in the acquisition process and concluded that essential courses were readily available from Government and commercial sources. This study, however, was never approved by the Administrator.

The recently established Office of Acquisition Policy is responsible for GSA's acquisition training activities and is assessing A-109 training needs.

CONCLUSIONS AND RECOMMENDATIONS

Although more than 2-1/2 years have passed since A-109 was issued, the acquisition reforms which it set out have not been implemented into GSA's day-to-day operations. GSA is, however, now working with OFPP and the appropriate congressional committees to issue A-109 implementing directives. Even if these directives were to accurately reflect the A-109 acquisition process, implementation into day-to-day operations could meet with considerable resistance by GSA personnel as evidenced by the resistance toward GSA's initial implementation effort. In addition, significant training will probably be required, especially in PBS.

GSA's implementation directives will apply only to GSA's acquisitions activities. Acquisition activities by other agencies will be subjected to their implementation of A-109 and their major system criteria.

GSA's current budget structure is not compatible with a mission-budgeting approach. The structure does not disclose funding requests for identifying and exploring alternative solutions to satisfy a mission need.

We recommend, therefore, that the GSA Administrator:

- Continue to place high priority on A-109 implementation including implementing directives and application in day-to-day operations.
- Develop, and include in the agency's budget, a presentation based on agency missions which segregates funding requests for identifying and exploring alternative solutions to satisfy mission needs.

AGENCY COMMENTS

GSA reviewed our draft report and agreed with our recommendations. According to GSA:

"GSA is placing a high priority on the implementation of A-109. The responsibility for the Circular's implementation has been given to the Assistant Administrator for Acquisition Policy. In addition to applying A-109 to major building space, ADP, and telecommunications acquisitions as mentioned earlier, GSA is considering using A-109 for a motor vehicle replacement acquisition estimated to cost approximately \$81 million.
* * *"

* * * * *

"GSA will update its implementation plan and submit it to the Office of Federal Procurement Policy by the end of April 1979." 1/

* * * * *

"GSA has as one of its FY 1979 objectives an examination of the Federal Buildings Fund. This study will be expanded to include this [GAO's second] recommendation."

Even though in agreement with our report, GSA's response noted one action which indicates that its internal conflicts regarding A-109 implementation are not totally resolved. Although the Office of Acquisition Policy was initially given agency-wide responsibility for A-109 implementation, the Administrator issued an order on March 6, 1979, delegating implementation and administration authority for ADP management and policy responsibilities and procurement authority to the Commissioner of ADTS. GSA is assessing this order's impact on A-109 implementation.

1/As of June 1979, the implementation plan had been revised but issuance was expected after the swearing in of a new GSA Administrator.

CHAPTER 6

NASA: DIRECTIVES ARE CONSISTENT WITH A-109

BUT PLANNED PROCEDURES RAISE QUESTIONS

NASA's progress includes issuing an implementing directive, approving four mission need statements, and extensive A-109 training. The implementing directive is almost a re-statement of A-109 with no significant inconsistency between the two documents. NASA's planned acquisition procedures, however, are or could be in conflict with the objectives of A-109 and the recommendations of the Commission on Government Procurement.

BACKGROUND

Because of its extensive research and development efforts, NASA is one of the agencies which should benefit most from the A-109 acquisition process. An analysis of the Federal Government's fiscal year 1979 budget authority for mission-oriented research and development (almost \$14.4 billion) showed that NASA's 18.5 percent of the total ranked behind only DOD (57.8 percent) and DOE (22.1 percent). Our January 11, 1979, report, "Financial Status of Major Federal Acquisitions, September 30, 1978," (PSAD-79-14) included 17 ongoing major NASA programs with current estimates totaling almost \$10.4 billion. Programs ranged from the International Ultraviolet Explorer (\$37.2 million) to the Space Transportation/Space Shuttle--design, development, test, and evaluation only--(\$7,311 million in fiscal year 1979 dollars).

NASA's needs are driven by factors such as scientific or technological opportunities, in contrast to DOD's needs, which are driven in response to a projected threat. NASA implementation instructions call for a continuing analysis of current and forecasted mission capabilities, scientific applications, technological opportunities, overall priorities, and resources.

DELAYED ACCESS TO NASA DOCUMENTS

The NASA Council consists of top-level officials, and provides a continuing, formal mechanism for overseeing program planning activities and discussing important issues. One of the Council's primary duties is selecting candidate new-program starts. After a mission need is studied and identified by the responsible centers and program offices, the Council reviews it and, as appropriate, recommends it to the NASA Administrator.

Our staff requested access to NASA Council minutes to determine (1) whether operations were consistent with A-109 and (2) the Council's role in reviewing and assigning priority to the major programs. Of five programs 1/ selected for our review, four have approved mission need statements.

NASA initially denied our staff full access to the Council minutes and provided us limited excerpts containing specific A-109 references. Our staff requested information on specific programs, but the excerpts contained virtually no information on these programs, even though our staff was told that the Council had reviewed the programs several times. After our work was completed, NASA made the minutes available to us.

MAJOR SYSTEM CRITERIA

NASA's definition of a "major system" is:

"* * * that combination of elements (such as hardware, software, facilities, and services) that will function together to produce the capabilities required to fulfill a mission need. NASA programs with any of the following characteristics will be considered as candidates for designation as major system acquisitions:

- (1) an estimated cumulative cost in current year dollars) of \$100 million or more at time of the mission need determination,
- (2) a significantly new or improved capability directed at and critical to fulfilling a mission, or
- (3) warranting special management attention."

According to NASA officials, the \$100 million major acquisition threshold was established by an A-109 Implementation Committee chartered in May 1976. After reviewing programs in the budget at that time, the Committee identified 13 programs with cost estimates over \$100 million and 12 programs estimated below \$100 million. The \$100 million threshold was decided after analyzing benefits to be

1/See appendix I for a discussion of each program.

gained in applying A-109. In addition, programs estimated to cost less than \$100 million may be selected as major systems when they involve a significantly new or improved capability or warrant special management attention.

NASA officials estimate that up to 50 percent of the total NASA program dollars (excluding the Space Transportation System, which represents a major portion of NASA's budget) could fall under its major system acquisition process.

ORGANIZATIONAL STRUCTURE FOR IMPLEMENTING A-109

In May 1976, NASA established an Implementation Committee chaired by the Chief Engineer to specifically plan and coordinate A-109 implementation. The Committee was responsible for assessing existing NASA acquisition procedures and practices and developing new or revised policies and implementing directives. On January 21, 1977, the Committee's efforts resulted in NASA Management Instruction (NMI) 7100.14, which sets forth policies and management processes governing major system acquisitions.

The Committee was also responsible for preparing the time-phased action plan required by A-109. The plan was sent to OMB, and according to OFPP, it reflected a good approach in implementing A-109.

After the NASA implementing instruction was issued, the Committee was dissolved. The primary responsibility for implementation was then integrated into the Office of Procurement which now has the lead role. This Office issued NMI 7100.14A in April 1978, canceling the previous instruction and establishing the present implementation framework. The instruction not only outlined the agency's implementing policies and procedures, but also identified the roles and responsibilities of NASA officials in the acquisition process. The first instruction set forth the basic "philosophy" for implementing A-109. The second instruction set forth a detailed process describing how the A-109 philosophy was to be implemented.

Both NASA Headquarters and the NASA centers have roles in preparing and approving documents required throughout the acquisition cycle. For example, Marshall Space Flight Center (MSFC) has prepared an instruction which assigns responsibility for assuring MSFC adherence to the NASA implementing directive. MSFC's Procurement Office has assigned people to MSFC program offices to help in preparing documentation required throughout the acquisition cycle.

The Office of the Comptroller at NASA Headquarters is also involved, in that mission need statements are developed as part of the normal budget cycle. Major system approval is by the NASA Administrator, who approves the key decision points outlined in A-109. The Deputy Administrator is the acquisition executive and is responsible for monitoring A-109 implementation. The Deputy Administrator is also the Chairman of the NASA Council, which oversees such issues as the development of intermediate and long-range strategies and plans, and the selection of candidate new-program initiatives. According to the present implementing directive, the NASA Council will perform mission analysis as part of the agency's long-range planning process. However, the instruction is to be changed to remove the mention of mission analysis and to more accurately reflect the coordinating and advisory-like role of the Council. The NASA Centers and the program offices at headquarters are responsible for mission area analysis.

FOUR CURRENT PROGRAMS ARE
TO FOLLOW A-109

According to NASA's September 20, 1976, time-phased implementation plan, after February 1, 1977, NASA would apply A-109 policy to new programs. OFPP has taken a position that it would be inappropriate to require ongoing programs to be retrofitted to A-109's "front end" policy. NASA has now approved four mission need statements and several programs are underway.

NASA's first major system being developed under A-109 is the Solar Polar Mission. The mission need statement was signed by the Administrator on January 23, 1978. Three other programs have been recently identified to follow A-109. They are the Gamma Ray Observatory, the Upper Atmosphere Research Satellite, and the Venus Orbital Imaging Radar Mission. The mission need statements were signed on May 23, 1978, August 22, 1978, and September 27, 1978, respectively.

Another project which is expected to follow A-109 procedures is for a 25-kilowatt power module for the space shuttle. A mission need statement is expected within the next fiscal year. NASA officials estimated that two to three new programs will start under A-109 annually.

Application of A-109 to ADP
and construction

The NASA directive also applies to ADP software and facilities and to construction projects meeting NASA's major

system criteria. According to a NASA official, no major ADP or construction acquisition programs are currently planned.

IMPLEMENTING DIRECTIVES ARE
CONSISTENT WITH A-109

According to NASA officials, their acquisition process did not have to be changed to any great extent to implement A-109. Our staff found that the NASA implementing directive is basically a restatement of A-109. As such, it reflects important A-109 concepts such as (1) agency head approval at key decision points, (2) continuing analysis of current and forecasted mission capabilities, and (3) broad participation by industry and others to ensure improved opportunities for innovative private sector contributions to national needs and to maximize competition between organizations and ideas.

One A-109 concept that the NASA directive does not address deals with the desired continuity and accountability of the program manager. According to NASA officials, however, this area is covered in its basic policy instructions on planning and approving major research and development programs, especially, that portion of the instructions dealing with the required project plan.

Also, NASA programs seldom involve production of more than one or a very limited number of a system. The Administrator's approval to proceed with full-scale development, therefore, generally constitutes the final key decision in the acquisition process. According to the NASA instruction, however, in the event that a significant follow-on procurement is required, a "production" step will be added.

PLANNED PROCEDURES COULD PERMIT
CONFLICTS WITH A-109 OBJECTIVES

Although NASA's implementing directive is consistent with A-109's policy, our discussions with agency officials and our review of ongoing programs disclosed that NASA's planned A-109 implementation is or could be in conflict with the A-109 objectives and the recommendations of the Commission on Government Procurement.

Program manager continuity

In some instances, the tenure of program managers in NASA will not provide the level of continuity and accountability envisioned by A-109. Consistent with A-109, the NASA implementing instruction calls for program managers to be

designated upon approval of a mission need. In actual practice, the program managers for five approved or candidate major system programs we reviewed were appointed even earlier--prior to approval of the mission need statement.

In three of these programs, NASA plans to retain the program manager through the full-scale development phase. In the other two programs, NASA plans to replace the program managers at about the time the program enters full-scale development. For these programs, therefore, the desired continuity and accountability will not be present. Two reasons given by NASA officials for this deviation from A-109 were:

- There are not enough qualified program managers in NASA for all programs to have one manager through the acquisition cycle.
- Changing program managers allows better utilization of experienced managers.

The planned NASA approach conflicts with the Commission's view that program managers' accountability is enhanced when they are involved in the earlier program decisions which dictate the performance and cost characteristics of their programs.

Possible restriction to
innovation and competition

Consistent with the Commission's report and A-109, NASA officials plan to initiate the identification and exploration of alternative solutions through an RFP, stated in general terms rather than in detailed specifications.

NASA has issued a policy directive on planning and approval of major research and development projects as a formalized approach for determining mission needs. NASA, however, has many sources which generate mission needs. Besides the identification of needs in-house, projects can develop from the ideas generated by other Government agencies, industry, the scientific community, universities, and the Congress.

After a need is identified, it will be studied to determine potential costs, feasibility, and technical risks associated with programs satisfying the need. For example, centers would conduct studies to determine the best approaches

for satisfying a need. Approaches determined to be unattractive would not be pursued, while feasible approaches would then give rise to the preparation of a need statement.

Our concern, however, is that the practice followed is for feasibility study data, developed prior to the mission-oriented RFP for conceptual designs, to be communicated to contractors and may lead them to respond with similar concepts. This result could limit contractor innovativeness and design competition--primary objectives of A-109.

Four of the five major programs we reviewed have yet to issue RFPs for system design concepts. The NASA program managers for these programs plan to issue less specific RFPs than would have been issued in the past.

For the Solar Polar Mission, however, prior to issuing the RFP for system design concepts, a study phase had been ongoing for several years. During this period, a number of evaluations of the feasibility and desirability of doing a mission of this kind were made. This included a preliminary analysis phase which identified a proposed concept for the mission. The preliminary analysis was to obtain an idea of project cost, schedule, risk, and technical feasibility. This information was provided to the contractors when the RFP for alternative design concepts was issued. According to a NASA official, the concepts received from industry as a result of the RFP were similar to the concept, but not to the design, identified in the preliminary analysis.

This approach will probably be followed for all NASA's major system acquisitions. According to the program managers visited at three NASA centers, this kind of preliminary analysis is conducted for all major programs. The officials showed varying degrees of concern. According to officials from two centers, feasibility studies and background research related to one solution may bias contractors toward that particular solution.

Possible reduction in contractors' responsibility for system design

A-109 seeks to improve contractors' motivation and their feelings of responsibility toward the systems they are developing. This improvement is to be accomplished by allowing contractors' proposed solutions to proceed through the acquisition cycle as long as economically beneficial. The "best" solution will proceed through operational use. This

approach is significantly different from past acquisitions in which the Government picked and chose desirable ideas or components from contractor design studies and development efforts and designed an in-house "solution". The development contractor often lacked (1) a strong sense of identity with, responsibility for, or motivation toward the solution and (2) a clear understanding of the risks involved.

This problem also occurred sometimes because firms were allowed to enter the acquisition cycle at the development phase without participating in earlier design studies. A contractor just entering the competition could use earlier design studies and possibly out-bid the contractors who had already spent significant resources. According to a NASA official, because of this, companies were often reluctant to spend a great deal of money on design studies.

NASA's acquisition process will permit the winning contractor in a major system competition to use design data from the losing contractors. The narrowing of a competition to a single contractor will usually occur at the full-scale development phase. At that time, the winning contractor may choose to change its design based on data from the losing designs.

According to OFPP officials, such design changes should be allowed only in exceptional circumstances. Such design changes would be appropriate when a contractor decides to use Government-furnished information to further optimize his solution. If, however, the contractor's solution fulfills the mission need, it is inappropriate to make changes aimed solely at technical excellence.

When a contractor is chosen because it has the best overall system, only on an exception basis should an agency direct that a subsystem or component be changed. OFPP has indicated that limiting design changes should (1) reduce "gold plating" or the buying of an expensive subsystem or component when another subsystem or component can meet the stated need at a lesser cost, (2) provide a contractor who will be accountable for carrying the program through the acquisition cycle, (3) reduce risks because the contractor would more fully understand its own design than a Government or another contractor design, (4) improve part of the present "integration problems" the Government is now facing with its systems, and (5) encourage contractors to present their best ideas early in the acquisition process.

BUDGET STRUCTURE IS NOT FULLY CONSISTENT
WITH A MISSION BUDGETING APPROACH

On July 27, 1977, our Office reported 1/ that

"The initial part of NASA's budget structure, to some extent, follows a mission approach. Succeeding levels, however, begin to focus on well-defined system products and activities.
* * *"

We found that NASA's fiscal year 1979 budget structure was changed slightly, but still does not constitute a mission budgeting approach.

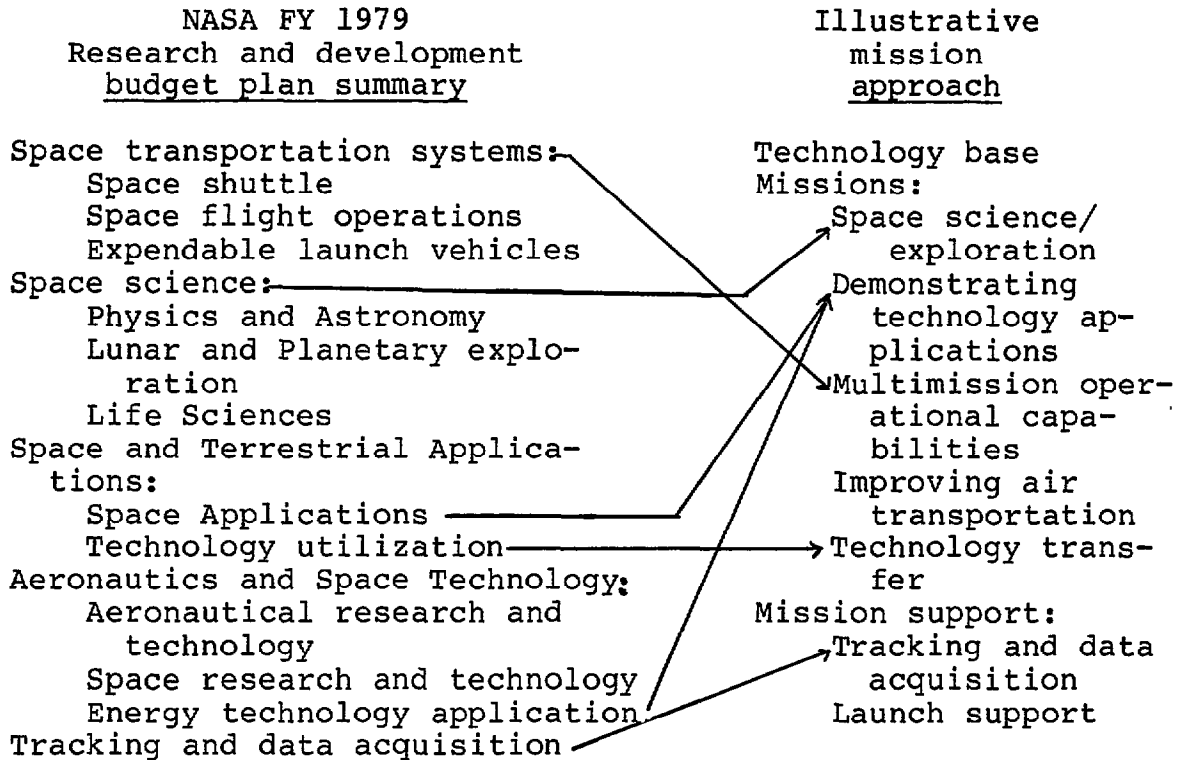
A mission approach would facilitate congressional review of new program starts. Each level of the budget structure would relate to NASA missions defined in end-purpose responsibility terms. The first or highest level in the structure would show NASA's broad responsibilities for meeting specified national needs and goals and would not contain references to specific system products. Descending levels of the structure would provide a sharper focus on end purposes to be served and specific needs to be met. The lowest levels of the budget structure would show the type of activity being funded or means to accomplish the end purposes.

Our recommendation to the Congress in our July 1977 report was to begin experimenting with the mission budgeting concept in carrying out its budget review, authorization, and appropriation functions.

As mentioned in chapter 2, an agency mission structure, mission analysis, and a mission budget presentation are necessary for full implementation of the A-109 acquisition process.

The following chart compares NASA's fiscal year 1979 budget structure with our illustrative NASA budget structure in the July 27, 1977, report and indicates where certain items in NASA's structure could fit in a mission budget structure:

1/"Mission Budgeting: Discussion and Illustration of the Concept in Research and Development Programs," PSAD-77-124, July 27, 1977.



Unlike the mission approach, NASA's structure contains technology base funds in several sections. NASA's structure is not as conducive to (1) a clear separation of technology base and efforts toward identifying and exploring alternative solutions to mission needs and (2) early communication of new starts to the Congress.

TRAINING IS UNDERWAY

The responsible NASA offices for A-109-related training are the Office of Procurement's Program Operations Division and the Procurement Policy Division. During the period of July 17 through August 4, 1977, NASA conducted orientation briefings for working managers in A-109 policies and management objectives. The briefings were held at 11 field centers and NASA headquarters. An estimated 800-850 people attended these briefings.

Other training programs attended by NASA headquarters and center personnel include the Federal Acquisition Institute training courses conducted by the Defense Systems Management College at Ft. Belvoir and briefing sessions by OFPP. Future plans call for continuing the NASA training programs with emphasis at the headquarters program office levels.

Some centers have also given training courses to senior- and working-level staff. For example, MSFC conducted an internal training seminar directed at both the working-level employees and the upper management staff.

CONCLUSIONS AND RECOMMENDATIONS

NASA's implementing directive is almost a restatement of A-109 and, as such, is consistent with the circular. NASA's planned acquisition procedures as described by agency officials, however, contains elements which could work against the objectives of A-109 and the acquisition approach recommended by the Commission on Government Procurement. NASA's plans regarding the tenure and reassignment of some program managers during an acquisition program are not consistent with A-109's desire for program manager accountability and continuity.

NASA's plans to identify a potential solution before a mission need statement is approved could serve to bias subsequent contractor proposals and restrict their innovativeness and competition. This approach also seems to be inconsistent with A-109 and the Commission's intention to (1) start a major system acquisition with an agency head need statement and (2) divide research and development effort into general technology base effort in support of an agency's mission, specific development effort in support of alternative system design concepts, and full-scale development.

NASA's plans to permit a winning contractor to use losing contractors' design data could, unless done by a contractor to optimize its solution, undermine A-109 objectives aimed at increasing contractor accountability for its proposed solution, reducing component integration problems, and avoiding gold plating.

NASA's needs are not solely developed through in-house analysis of agency missions. NASA relies heavily on the scientific community for generating and supporting ideas for NASA programs. NASA mission analysis seems to be done to support these proposed programs.

Our draft report included a recommendation that NASA reevaluate its acquisition process to determine whether controls are in place to insure that A-109 objectives are adequately considered in decisions relative to (1) program manager reassignments, (2) study efforts prior to approval of a mission need statement, and (3) use of losing contractors' design data. According to NASA, a reevaluation had been conducted and its controls are proper and adequate to

ensure that A-109 objectives are considered. However, our concern is that A-109 objectives could be compromised, especially, regarding NASA's study efforts prior to approval of a mission need statement. In our opinion, this effort could dictate the eventual system concept and limit competition and industry's opportunity to be innovative.

Accordingly, we recommend that the NASA Administrator adequately consider A-109 objectives in future decisions relative to program manager reassignments, study efforts before approving a mission need statement, and use of losing contractors' design data.

CHAPTER 7

OMB/OFPP: CLOSE COORDINATION WITH AGENCIES IS NECESSARY FOR PROPER A-109 IMPLEMENTATION

OFPP is responsible for overseeing A-109 implementation. OFPP was placed in OMB, rather than elsewhere in the executive branch, to give OFPP prestige and leverage in dealing with executive agencies and to enhance its ability to discharge its responsibilities, including using the budget review process and recommending agency funding be denied where necessary.

According to OFPP officials, they have worked closely with OMB budget examiners to ensure that A-109 policy is considered in reviewing agencies' budget requests.

In overseeing A-109 implementation, OFPP has had a difficult job to do with a very small staff. As an illustration of this difficulty, agencies' implementing directives have required more OFPP review and input than originally expected.

During the June 1978 congressional hearings (see p. 29) on GSA's implementation efforts, the Administrator of OFPP, commented on the office's implementation efforts. According to the Administrator, due to staffing, there is a limit as to how many programs OFPP can monitor in carrying out its A-109 implementation responsibilities. He added that beyond negotiating with agencies, OFPP's next recourse is withholding authority for money in the budget process. During questioning, he acknowledged that authority for money had been withheld in only one instance and that this approach may have to be used in the future to force compliance.

On the basis of our review of four civil agencies, there has been little urgency in implementing A-109. Whether it is because of workload; lack of real, executive agency support for A-109; or feelings that A-109 will not work or result in any important changes, it appeared that excluding NASA, A-109 did not seem to have a high priority in the agency's activities.

For example, in several instances OFPP and agency personnel both stated that they had made the latest communication concerning a given matter and were waiting on the other party to respond. Also, OFPP comments on agency implementing directives were essentially ignored or were treated as unimportant rather than confronted and resolved.

In our opinion, A-109 objectives could be compromised by agencies with significant technology base activities. This could happen if they do not formally recognize a perceived mission need, but conduct technology base research dictating the solution once the mission need is approved. This major acquisition practice was strongly criticized by the Commission on Government Procurement.

RECOMMENDATIONS

We recommend that the Director, OMB, and the Administrator, OFPP:

- Direct OFPP personnel and OMB budget examiners to be aware of and consider, in reviewing DOE and NASA budget requests and programs, those elements (see pp. 9 and 40 to 43) in the agencies' planned acquisition process which could permit actions contrary to A-109.
- Continue to place a high priority on working with the executive agencies to implement A-109.
- Direct agencies with significant technology base activities to make sure that only appropriate activities are being pursued.
- Review budget requests for technology base activities to make sure that they do not contain activities which, in effect, are design efforts for solutions to perceived mission needs.

NASA PROGRAMS SELECTED FOR REVIEWSOLAR POLAR PROGRAM

Interest in the effect of solar variability on the earth's weather and in the study of the Sun led NASA to propose the Solar Polar Mission. Since the late 1950s, scientists have discussed the benefits of flying a satellite over the poles of the Sun. In the NASA Solar Polar Mission Program, two satellites will be launched in a path that will take them over the poles of the Sun.

The mission need statement for the program was signed on January 23, 1978. However, on April 15, 1977, NASA released an announcement of opportunity to elicit experiments. The Administrator has already selected a design concept and two study contracts have been awarded. The Solar Polar Mission satellite launches are scheduled for February 1983. NASA expects to begin the program in fiscal year 1979.

GAMMA RAY OBSERVATORY (GRO)

Since gamma rays do not penetrate our atmosphere, NASA is developing a spacecraft to observe these rays which are the highest-energy radiations in the electromagnetic spectrum. The GRO is planned as a free-flying satellite which will be launched from the space shuttle and will carry a large gamma-ray observatory.

The GRO mission need statement was approved on May 11, 1978. An announcement of opportunity for GRO experiments had been published on November 15, 1977, and the RFP for alternative design concepts is being prepared pending a decision on mandatory use of the multimission modular satellite. The program is expected to start in fiscal year 1980 or later.

UPPER ATMOSPHERE RESEARCH
SATELLITE (UARS)

Concern about changes in the atmosphere due to natural and manmade phenomena led NASA to propose studying that region. The UARS program will include several satellites that will provide data on the solar energy input to and the temperature structure, dynamics, and photochemistry of the upper atmosphere.

The mission need statement for the program was signed by the NASA Administrator on August 22, 1978. An announcement of opportunity to solicit ideas for experiments was issued on September 15, 1978. The first RFP for alternative concepts is

to be released in calendar year 1979, and contractor effort is expected to start in fiscal year 1980 or later.

VENUS ORBITAL IMAGING RADAR (VOIR)

NASA seeks to extend scientific knowledge and understanding by obtaining a radar map of Venus' surface. This work could further NASA's objective of understanding the Earth through comparative studies with other planets. Many instruments similar to those required by VOIR have flown on previous missions.

The VOIR mission will aim for a favorable launch opportunity in May 1983. A mission need statement was signed on September 27, 1978. The RFP for alternative concepts is being prepared, and contractor effort is expected to start in fiscal year 1980 or later.

25-KILOWATT POWER MODULE

Many payloads for the orbiter space shuttle will require more electrical energy than the orbiter itself can provide. NASA has been conducting preliminary studies to find a solution to the problem and has decided that a power module of about 25 kilowatts is needed. A draft mission need statement and RFP are being prepared and contractor effort is expected to start in fiscal year 1981 or later.



Department of Energy
Washington, D.C. 20585

March 2, 1979

Mr. J. Dexter Peach, III
Director, Energy and
Minerals Division
General Accounting Office
Washington, D.C. 20548

Dear Mr. Peach:

We appreciate the opportunity to review and comment on the GAO draft report entitled "Much Remains To Be Done Before OMB Circular A-109 On Major System Acquisitions Is Implemented Into Civil Agencies' Operations." [See GAO note 1, p. 53.]

We believe that the draft report should address the essential difference between government acquisitions for federal use and the support of commercialization activity. As a result, therefore, the comments on DOE's major systems acquisition process do not adequately describe the problems that DOE faces or provide a useful independent review of DOE's progress and success.

The report should clarify what differences exist between DOE and the Office of Federal Procurement Policy (OFPP) in sufficient detail, explain their history, and assess their implications for the type of projects DOE has designated.

Similarly, it is unclear what additional steps DOE could take to encourage industry innovation and creativity early in the R&D process. We suggest that the report site examples in order to support its comments.

[See GAO note 2, p. 53.]

In general, we believe that the report does not assess DOE actions regarding A-109 in terms of tailored requirements. It is suggested that the report reflect some of the DOE efforts we feel are consistent with the objectives of A-109 such as:

1. The pioneering of the Program Opportunity Notice ("PON") as a means of soliciting innovative industry approaches to legislatively authorized projects;
2. The utilization of parallel design efforts in the High Btu, Fuel Gas, and other projects; and

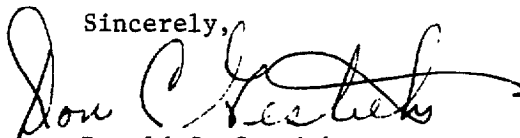
J. Dexter Peach

3. The convening by the Under Secretary of the Energy Systems Acquisition Advisory Board as a means of focusing top level management attention on the High Btu project as it relates to the Department's mission needs and goals, and of obtaining top level management consideration of proceeding with development on a competitive or noncompetitive basis.
[See GAO note 3, this page.]

Comments of an editorial nature and suggested revisions with justifications have been provided to members of your staff.

[See GAO note 4, p. 54.]

Sincerely,



Donald C. Gestiehr
Director
GAO Liaison

GAO notes:

1. The report title was revised during GAO's internal review process.
2. Our concern was that early evaluation of alternatives before approval of a mission need could lead industry to believe that DOE has a preferred solution, thereby limiting the likelihood that industry would respond with an innovative and creative proposal. Our concern was not that DOE should do something in addition to A-109 to encourage innovation and creativity.
3. Although these examples seem to be consistent with A-109, they do not address the concerns which led to our recommendations. Accordingly, they have not been added to our report. However, regarding the last two examples, our report already states, in part (see p. 8), that DOE's acquisition process calls for (1) top-level decisions in the major system acquisition process and (2) competitive exploration of alternative system design concepts.

GAO notes (cont'd):

4. Our draft report contained a recommendation that DOE update its A-109 implementation plan to show when and how A-109 policy will be implemented. DOE's comments stated that its basic policy directive, supplemented by its project management system policy guidance, describes basically how implementation will be carried out. After considering DOE's comments, we deleted the recommendation.



ASSISTANT SECRETARY
FOR ADMINISTRATION

OFFICE OF THE SECRETARY OF TRANSPORTATION

WASHINGTON, D.C. 20590

March 26, 1979

Mr. Henry Eschwege
Director
Community and Economic
Development Division
U.S. General Accounting Office
Washington, D.C. 20548


Dear Mr. Eschwege:

We have enclosed two copies of the Department of Transportation's reply to the General Accounting Office (GAO) draft report "Much Remains to Be Done Before OMB Circular A-109 on Major System Acquisitions Is Implemented Into Civil Agencies' Operations."

The General Accounting Offices' rigid interpretation of Office of Management and Budget Circular A-109 implies an attempt on the part of the Department to evade the requirements of the Circular. In our opinion the Office of Federal Procurement Policy recognized the widely different requirements of the various agencies when it issued the broad guidelines set forth in A-109. The Department of Transportation in turn applied the same approach to its diverse acquisition needs. Our position is discussed in detail in the enclosed statement.

If we can further assist you, please let us know.

Sincerely,


Edward W. Scott, Jr..

Enclosures



DEPARTMENT OF TRANSPORTATION REPLY

TO

GAO DRAFT REPORT DATED FEBRUARY 1979

MUCH REMAINS TO BE DONE BEFORE OMB
CIRCULAR A-109 ON MAJOR SYSTEM
ACQUISITIONS IS IMPLEMENTED
INTO CIVIL AGENCIES' OPERATIONS

SUMMARY OF GAO FINDINGS AND RECOMMENDATIONS

The General Accounting Office (GAO) reviewed the implementation of Office of Management and Budget (OMB) Circular A-109 by four civil agencies. The four agencies reviewed were: the Department of Transportation (DOT), the Department of Energy (DOE), the General Services Administration (GSA), and the National Aeronautics and Space Administration (NASA). Within DOT, GAO reviewed the Office of the Secretary (OST), the Federal Aviation Administration (FAA), the U.S. Coast Guard (CG), the Urban Mass Transportation Administration (UMTA), the Federal Railroad Administration (FRA), and the Federal Highway Administration (FHWA).

In general, GAO concluded that the civil agencies' implementation of A-109 has been slow and not consistent with the concepts enunciated by the Commission on Government Procurement. GAO further concluded:

- agency management officials do not appear to be fully supportive of A-109 concepts and have not given a high priority to making changes in their acquisition policies;
- agencies have issued implementing directives, but as yet there have been few new programs and little program action which can be evaluated for adherence to the policy prescribed in A-109; and
- some directives and planned acquisition procedures permit actions which conflict with A-109 objectives.

GAO concluded that within DOT:

- the A-109 acquisition process has not yet been implemented into day-to-day operations;
- implementing directives of DOT and/or agency components do not call for some key concepts in the circular; and

- dollar criteria for major systems and DOT's system for identifying major systems meeting other criteria could result in the exclusion of some important acquisitions.

[See GAO note, p. 61.]

GAO recommends that the Administrator, Office of Federal Procurement Policy (OFPP), review DOT, CG, and FAA implementing directives for compliance with A-109 and aggressively work with DOT components in making necessary revisions.

The GAO report recommends that the Secretary of Transportation:

- direct revision of A-109 implementing directives to reflect the intended acquisition approach. These revisions should be closely coordinated with the OFPP; and
- review the criteria and planned methodology for designating major systems to determine: (1) if a more active OS^m role should be pursued, and (2) if the apparent emphasis on the major system dollar criteria will serve to ignore other A-109 criteria intended to include programs critical to fulfilling an agency mission or warranting special management attention. [See GAO note, p. 61.]

DOT POSITION STATEMENT

GAO Comment: "DOT has not yet implemented the A-109 acquisition process into its day-to-day operations".

DOT Response: Although the GAO report is dated February 1979, the data in the report applicable to DOT actually represents the period between May and August 1978. The GAO report does not reflect the issuance of DOT Order 4200.9A, Acquisition Review and Approval, on August 29, 1978, or DOT's letter to OFPP dated August 18, 1978 (copies attached). The Department of Transportation believes that a significant step in the implementation of A-109 was taken when the Deputy Secretary issued a list (copy attached) of major system acquisitions in November 1978. It is recommended that the above information be included in the DOT section of the GAO report.

GAO Comment: "Implementing directives of DOT and/or agency components do not call for some key concepts in the circular".

DOT Response: The GAO report implies that the DOT Order and the FAA and Coast Guard implementing directives are deficient because they do not parrot the wording of A-109. It is the DOT position that these directives provide the additional guidance necessary to implement A-109 and should be read in conjunction with it. The DOT does not consider it necessary to repeat all aspects of A-109 in its implementing directives, but we do consider all aspects of A-109 applicable to DOT.

GAO Comment: "DOT's dollar criteria for major systems and its system for identifying major systems meeting other criteria could result in the exclusion of some important acquisitions".

DOT Response: As stated in the GAO report, DOT's definition of major system acquisitions includes programs "directed at and critical to fulfilling a Departmental mission; entailing the allocation of relatively large resources; or warranting special management attention." Although thresholds have been established at \$150 million or more for total acquisition cost and \$25 million or more for research and development costs, this is in no way intended to diminish the importance of the other criteria. We do believe, however, that the dollar thresholds provide a reasonable starting point that enables us to effectively manage the A-109 process. It should be noted that the Deputy Secretary's initial list of Major System Acquisitions included 11 programs--five new starts and six ongoing programs.[See GAO note, p. 61.]

GAO Comment: "DOT, FAA, and Coast Guard implementing directives contain conflicting approaches and are not consistent with A-109. OFPP officials also evaluated the DOT directive and reached similar conclusions about its limitations. Further, GAO recommends that the Secretary of Transportation direct revision of A-109 implementing directives to reflect the intended acquisition approach".

DOT Response: The DOT does not feel any revisions to DOT Order 4200.14A are required at this time. My letter dated August 18, 1978, to the Administrator, OFPP, clearly stated that "the purpose of DOT 4200.14A is to establish procedures and guidelines for carrying out A-109. The Departmental elements are expected to apply the principles and meet the requirements of A-109 while following the procedures set forth in the DOT Order. While DOT 4200.14A does not provide detailed guidance in all areas, it clearly calls for the development of a program acquisition plan (see Attachment 3, paragraph 4). It also prescribes the use of competitive system design concepts (see paragraphs 6(b), 10(b)(4) and Attachment 3, paragraph 2(c)). In short, we intend for all Departmental elements to apply, wherever appropriate, the approaches specified in A-109 regarding the development of program acquisition strategies and the selection of alternative design concepts".

My letter stated that further, "because of the diversity of our programs, our instructions, just as the instructions in A-109, are broad in scope. As experience is gained in the application of A-109, we may find that more explicit guidelines are needed in the areas you have identified and we will, of course, modify DOT Order 4200.14A if that seems appropriate. Meanwhile, through meetings, reviews, and other communications we will assure that the operating elements manage designated major systems in a way that is consistent with both the letter and the spirit of A-109." The GAO report itself supports this position by stating: "... the OFPP views A-109 as calling for a flexible process that should be tailored to fit individual acquisition programs, rather than a "cookbook" which must be rigidly applied". We agree completely, and believe no further coordination is required with OFPP at this time.

No specific inconsistencies in the Coast Guard's implementing instruction are set forth in the GAO report and the above discussion is considered applicable.

Although FAA Order 1810.1A states that it "describes the management framework and procedures that will be used in the acquisition of major systems", this order was issued on March 14, 1978, prior to the implementation of DOT Order 4200.14A in May 1978. Some of the inconsistencies noted in the GAO report have been recognized and FAA is in the process of issuing a new directive applicable to major system acquisitions that will be consistent with A-109 and DOT 4200.14A.

GAO Comment: "The Secretary of Transportation should review the criteria and planned methodology for designating major systems to determine if a more active OST role should be pursued". [See GAO note, p. 61.]

DOT Response: The Department does not concur in the GAO recommendation that the Secretary determine whether a more active OST role should be pursued. The implementation of A-109 puts OST very directly and actively in the management of major systems acquisition and pending further experience with the system no changes appear desirable.

[See GAO note, p. 61.]

GAO Comment: "Only FAA and Coast Guard are expected to routinely have major system acquisition programs".

DOT Response: Contrary to GAO's observation, the Deputy Secretary's initial list of major system acquisitions, issued November 1978, does not reflect a disproportionate distribution of programs subject to A-109.

Programs Currently Subject To A-109 and DOT 4200.14A

USCG	-	1
FAA	-	6
FRA	-	2
NHTSA	-	1
UMTA	-	1

In addition to the above, the following editorial comments are provided:

1. Page 18: Under "Background", the National Highway Traffic Safety Administration (NHTSA) should be included in the list of eight operating components.
2. Page 20, line 3: Change "Deputy Secretary's office" to "Office of the Secretary."
3. Page 21, line 3: Change "the Secretary" to "the Deputy Secretary".
4. Page 21, second paragraph: Should reflect that DOT Order 4200.9A was issued on August 29, 1978.
5. Page 22, line 16: Change to "submits to the Deputy Secretary for approval".
6. Page 36: This discussion is now made obsolete by the Deputy Secretary's initial list of major system acquisitions issued on November 17, 1978.
7. Page 37, third paragraph, third line: This sentence is not correct. FAA has six major systems designated as of November 17, 1978.

GAO's rigid interpretation of A-109 implies an attempt on the part of DOT to evade the requirements of the circular. In our opinion OFPP recognized the widely different requirements of the various agencies when it issued the broad guidelines set forth in A-109. The Department of Transportation in turn applied the same approach to its diverse acquisition needs. DOT 4200.14A should not be viewed as an evasion of the requirements of A-109, but the framework for the necessary exercise of judgment by an agency.

GAO note: Our conclusion and recommendation, regarding DOT's criteria and methodology for designating major system acquisitions, were deleted from our report. They had been based on discussions with agency officials. No actual experience was available for evaluation. The formal DOT position, however, as stated in its response to our draft report, recognizes the importance of other A-109 criteria and is consistent with A-109.



General
Services
Administration Washington, DC 20405

MAR 27 1979

Honorable Elmer B. Staats
Comptroller General of the United States
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Staats:

Thank you for the opportunity to review and comment on your draft report entitled "Much Remains To Be Done Before OMB Circular A-109 On Major System Acquisitions Is Implemented Into Civil Agencies' Operations." We concur in its recommendations. Before outlining how we plan to act on the recommendations, we would like to make some general comments and update the General Services Administration's (GSA) implementation of A-109.

Implementation Efforts Since September 1978. The draft report appears to cover the period up to September 1978. There have been significant changes in personnel, organization, and direction since that time. A number of directives and regulations have also been developed to implement A-109. Copies of them are attached for your information.

1. The overall GSA efforts include:

a. In September, the Office of Acquisition Policy was created and given agency-wide responsibility for the implementation of A-109. The Assistant Administrator for Acquisition Policy was designated to be the GSA Acquisition Executive and is responsible for designating major systems acquisitions in GSA. On March 6, 1979, the Administrator issued an order which delegated the Commissioner of the Automated Data and Telecommunications Service (ADTS) exclusive authority within GSA for the implementation and administration of Public Law 89-306. This authority includes ADP management and policy responsibilities as well as procurement authority. The impact of this order on the implementation of A-109 is currently being assessed by representatives of the Office of Acquisition Policy and ADTS.

b. With respect to training, 16 people have been trained in the systems acquisition process and another 55 are scheduled for training during FY 1979.

c. The Office of Acquisition Policy has drafted and issued for comment a policy on the use of project/program management in GSA. Directives on life cycle costing, design-to-cost, and functional specifications are also to be issued during the coming year.

2. Public Buildings Service (PBS)

a. Since September, PBS has undertaken a concerted effort to accelerate the implementation of A-109. After testifying with the Office of Federal Procurement Policy (OFPP) before the House Public Works Subcommittee, it developed in consultation with the Office of Acquisition Policy and OFPP a revised A-109 process, order and pamphlet for acquiring building space. We believe that these directives are fully consistent with the intent of A-109. They have been submitted to OFPP, but have received no comments as yet. These directives will be applied to the extent possible to the day-to-day operations as soon as they are approved by the Office of Management and Budget (OMB), the appropriations committees, and the public works committees. In that connection, however, they will also be constrained by a directive from the Administrator communicating the verbal instructions of the President to use historic space first where it is feasible and prudent and then leased space, in accordance with the Economy Act of 1932 and Executive Order 12072, "Federal Space Management," before Federal construction is considered as an alternative.

b. PBS also has a new Acting Commissioner who has been fully supportive of the concept of A-109.

3. Automated Data and Telecommunications Service (ADTS)

a. ADTS has issued a temporary Federal Procurement Regulation on the use of A-109 in the acquisition of ADP and telecommunications systems and an internal order on the implementation of A-109 within ADTS.

b. To date, the Environmental Protection Agency is the only agency that decided to use A-109 for a major ADP systems acquisition. GSA has written to OMB asking for clarification on whether or not A-109 should be used for its own major ADP acquisition. The FY 1980 budget provides for the acquisition of in-house equipment and it would be impossible to obligate the monies in the manner they were budgeted by September 30, 1980, and still use A-109.

General Comments. On page 33, the draft report discusses GSA's budget structure and concludes that it is not compatible with a mission budget required by A-109 because "the specific solution was selected before the funding or budgeting request was proposed." This is misleading in that, though the construction or leasing alternative is selected before funding, the specific solution, i.e., a specific site, contractor, or leasor has not. It would be more accurate to state that the present prospectus and funding structures are not conducive to competition between alternative concepts, i.e., Federal construction, leasing, purchase and turnkey alternatives. [See GAO notes 1 and 2, p. 64.]

Comments on Recommendations

1. Recommendation 1, Continue to place a high priority on A-109 implementation, to include issuing implementing directives and assuring that they are applied in day-to-day operations. GSA is placing a high priority on the implementation of A-109. The responsibility for the Circular's implementation has been given to the Assistant Administrator for Acquisition Policy. In addition to applying A-109 to major building space, ADP and telecommunications acquisitions, as mentioned earlier, GSA is considering using A-109 for a motor vehicle replacement acquisition estimated to cost approximately \$81 million. If the analysis of the need indicates that the application of A-109 would be beneficial, it will be used.

2. Recommendation 2, Prepare a new implementation plan which will include milestones and target dates for issuing directives, identifying and providing needed training, and incorporating the A-109 policy into day-to-day operations. GSA will update its implementation plan and submit it to the Office of Federal Procurement Policy by the end of April 1979.

3. Recommendation 3, Develop and include in the agency's budget a presentation based on agency missions which segregates funding requests for identifying and exploring alternative solutions to satisfy minimum needs. GSA has as one of its FY 1979 objectives an examination of the Federal Buildings Fund. This study will be expanded to include this recommendation.

Finally, we would like to suggest that a briefing be arranged at a mutually convenient time to explain in further detail GSA's progress over the last several months. If this is satisfactory, or if we can answer any questions, please contact Mr. Dale R. Babione, Assistant Administrator for Acquisition Policy at 566-1043.

Sincerely,



Jay Solomon
Administrator

Enclosures

GAO notes:

1. Page reference has been changed to correspond to page number in the final report.
2. We agreed with the GSA concern and modified the above quote so that our statement would not be misleading.



National Aeronautics and
Space Administration

Washington D C
20546

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MAR 20 1979

Mr. J. H. Stolarow
Director
Procurement and Systems Acquisition
Division
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Stolarow:

Enclosed are NASA's comments to GAO's draft report entitled "Much Remains To Be Done Before OMB Circular A-109 On Major System Acquisitions Is Implemented Into Civil Agencies' Operations", Code 951332, which was forwarded to us with your letter, dated February 5, 1979.

In the draft report, GAO recommends the reevaluation of certain aspects of NASA's planned implementation of A-109. Such reevaluation has been conducted, and the NASA positions and rationale regarding the respective factors mentioned in the GAO recommendation are set forth in the enclosure. We believe that NASA's controls are proper and adequate to ensure that the objectives of A-109 are considered in our acquisition decisions and implementation procedures.

We appreciate the opportunity to review the draft report. We believe that your observations and emphasis will help us function even more effectively in implementing OMB Circular A-109.

Sincerely,

A handwritten signature in black ink, appearing to read "Arnold W. Frutkin".

Arnold W. Frutkin
Associate Administrator
for External Relations

Enclosure

cc: Mr. Joe Johnson, GAO/PSAD

NASA COMMENTS ON THE GAO DRAFT REPORT
ENTITLED "MUCH REMAINS TO BE DONE BEFORE
OMB CIRCULAR A-109 ON MAJOR SYSTEMS
ACQUISITIONS IS IMPLEMENTED INTO CIVIL
AGENCIES' OPERATIONS." DATED FEBRUARY
1979 (Code 951332)

As noted in the GAO draft report, NASA has issued an acceptable implementing directive to the OMB Circular A-109, and has conducted extensive A-109 training. At the time of the audit, four Mission Need Statements had been approved.

pages 36 and 37

As noted on of the draft report, NASA initially denied the staff on this review access to NASA Council minutes. Subsequently, NASA allowed access and the GAO has reviewed the NASA Council minutes. [See GAO note 1, p. 70.]

Beginning on page 46 of the draft report, the GAO recommended that the Administrator reevaluate the following aspects of NASA's planned implementation of A-109. Such reevaluation has been conducted, with the following results: [See GAO note 1, p. 70.]

Continuity of Program Manager

It is the position of the Agency that adequate controls are in effect to ensure that the objectives of A-109 are adequately considered in decisions relative to program manager reassignments.

NMI 7100.14A provides that NASA will designate a program manager upon the approval of the mission need and the decision to proceed with consideration of alternative system design concepts.

To the extent feasible, program managers will serve through full-scale development. However, different expertise may be required as the program progresses through the various phases. Earlier phases may require a different expertise than later phases. An individual program manager may not have all the expertise. Therefore, each successive phase may require a program manager with different skills and interests. For example, the preliminary feasibility phase requires an imaginative and innovative person to guide the program through the critical planning and definition phase. Especially keen engineering expertise is required during the alternative system design concept effort. Full-scale development requires the talents of a program manager highly skilled in the art of technical and administrative management to guide the program through full-scale development, including fabrication, integration, test and launch, while keeping control of costs.

Where a program manager possesses all of the above capabilities and talents, he could be assigned continuous program manager responsibilities as envisioned by A-109. However, the situation may be that reassignments of program managers may be necessary to ensure that these specialized skills and expertise are brought to bear at the particular phase in the program where they can be most effectively used.

Study Efforts Prior to Approval
of a Mission Need Statement

The GAO report concludes that NASA's policy of communicating feasibility study data developed prior to the mission-oriented RFP for conceptual designs to contractors may lead them to respond with similar concepts and that this could limit contractor innovativeness and design competition--primary objectives of A-109.

Suggestions for future missions are received from several sources, including other Government agencies, industry, the scientific community, universities and the Congress. Such mission suggestions/ideas are studied to determine if they are feasible. Many of these missions are of such an advanced nature that we do not even know if they can be done until we have conducted extensive studies. Further, we must be convinced that these proposed missions, if theoretically feasible (i.e., supported by sufficient technology), are also reasonably compatible with the nation's capability to process and understand the data. These studies and background research are made available to prospective offerors in order that they may be aware of all the knowledge available regarding the mission and reduce the risk of attempting a research path that has already been proven ineffective and to stimulate innovation above and beyond these parameters. A case in point is the International Solar Polar Mission RFP which states very clearly that the studies are furnished for information only and should not influence the offerors' own innovative concepts. In those situations where feasibility studies conclude that the development of a single concept system is the preferred approach, approval by the Administrator is required as an exception to the A-109 process prior to any system design concept solicitation.

It is therefore the view of the Agency that sufficient controls exist to ensure that the objectives of A-109

are adequately considered in providing feasibility study data to potential offerors.

Standardization

GAO concludes that the NASA policy that all Agency projects shall use components, subsystems, and/or systems which have been declared standard may conflict with A-109.

The NASA standardized components program will have little or no effect on implementation on A-109 as long as we are dealing with relatively minor components from the standpoint of driving a major system design concept. It is recognized that if we plan to use something as major as the multi-mission spacecraft or a specific ground system, such use would inhibit the application of A-109. However, this would be an exceptional case and would require approval by the Administrator and is consistent with the provisions of A-109.

It is therefore the position of the Agency that our procedures accurately reflect the intent of A-109 and use of any standard major component as the MMS would be in conformity therewith. [See GAO note 2, p. 70.]

Technology Transfusion

[See GAO note 3, p. 70.]

GAO's position concerns NASA's intention to allow contractors to transfer technology, generally at the full-scale development phase. They conclude that technical transfusion is appropriate when a contractor decides to use Government-furnished information to further optimize his solution, but if the contractor's solution fulfills the mission need, it is inappropriate to make changes aimed solely at technical excellence.

We agree with GAO that technical transfusion at the full-scale development phase is appropriate when a contractor decides to use Government-furnished information to further optimize his solution. We also agree that technical excellence alone is not an appropriate reason for instigating a change when the contractor's solution has been accepted for fulfillment of a mission need.

However, Government-owned and paid for information should be made available to any full-scale development contractor to assist in lowering overall costs,

improving or increasing science return, assuring reliability and lowering risk of failure of any component subsystem or system associated with the mission. Making all Government-owned information available to the contractor, whose concept has been selected for full-scale development, assures maximum success to the mission.

The Agency therefore concludes that the objectives of A-109 are adequately considered in decisions relative to technology transfusion.

Additionally, on page 85 of the draft report, it was recommended that the Agency's budget presentation be revised to comply with Section 14 of A-109, which calls for separate identification of research and development funds for (1) technology base activities, (2) development effort in support of alternative design concepts, and (3) full-scale development. With regard to this recommendation, it should be understood that budget format and structure are determined by the Office of Management and Budget. Nonetheless, in the presentation of budget backup material, NASA has and will continue to identify separately those efforts relating to base technology, exploration of alternatives, and full-scale development. [See GAO note 4, p. 70.]

Apart from the above and as a matter of accuracy, the words "Space Transportation System (\$7,311.0 million)," in the first paragraph on page 36 of the report, should be changed to read, "Space Transportation/Space Shuttle DDT&E only (\$7,311.0 million in FY 1979 dollars)." [See GAO note 1, p. 70.]


S. J. Evans
Director of Procurement

GAO notes:

1. Page references have been changed to correspond to page numbers in the final report.
2. The section on standardization was deleted from our report. NASA's planned approach, as disclosed by its formal comments, is consistent with A-109. In addition, section 11.j. of A-109 permits agency heads to authorize full-scale development of long lead time items that "* * * fulfill a recognized generic need or * * * have a high potential for common use among several existing or future systems."
3. The term "technology transfusion" was deleted from our report because it has a specific legal definition which differs from our intended meaning. Our report discusses situations in which winning contractors make design changes based on designs legally provided by the Government from losing contractors.
4. The recommendation on mission budgeting was deleted from our report because (1) as NASA pointed out, budget format and structure are determined by OMB and (2) our report, "Mission Budgeting: Discussion and Illustration of the Concept in Research and Development Programs," PSAD-77-124, July 27, 1977, had already recommended that the Congress experiment with the mission budgeting concept. Such experimentation is now underway.

(951332)

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