

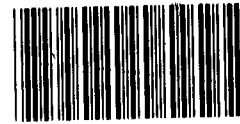
GAO

Report to the Chairman, Subcommittee on  
Investigations and Oversight, Committee  
on Science, Space, and Technology, House  
of Representatives

March 1992

# NASA PROCUREMENT

## Agencywide Action Needed to Improve Management of Contract Modifications



146540

**RESTRICTED--Not to be released outside the  
General Accounting Office unless specifically  
approved by the Office of Congressional  
Relations.**

RELEASED

---

---



United States  
General Accounting Office  
Washington, D.C. 20548

---

National Security and  
International Affairs Division

B-244523

March 2, 1992

The Honorable Howard Wolpe  
Chairman, Subcommittee on  
Investigations and Oversight  
Committee on Science, Space,  
and Technology  
House of Representatives

Dear Mr. Chairman:

As requested, this report discusses the causes and management of cost and schedule modifications of contracts at the National Aeronautics and Space Administration's four largest procurement centers.

As arranged with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days after its issue date. At that time, we will send copies to other congressional committees, the NASA Administrator, and other interested parties. We will also make copies available to others on request.

Please contact me on (202) 275-5140 if you or your staff have any questions concerning this report. Major contributors to this report are listed in appendix II.

Sincerely yours,

Mark E. Gebicke  
Director, NASA Issues

---

# Executive Summary

---

## Purpose

The Chairman, Subcommittee on Investigations and Oversight, House Committee on Science, Space, and Technology, is concerned about the procurement management activities of the National Aeronautics and Space Administration (NASA). The Chairman asked GAO to report the results of its assessment of the causes and management of cost and schedule modifications of contracts at NASA's four largest procurement centers.

---

## Background

More than 90 percent of NASA's spending for goods and services is done by its field centers, with over 70 percent spent at just four of them—Marshall Space Flight Center (25 percent), Johnson Space Center (22 percent), Goddard Space Flight Center (14 percent), and Kennedy Space Center (10 percent).

Contract administration helps ensure that NASA receives the goods and services for which it contracted on time, at a reasonable cost, and in accordance with the applicable specifications, work statement, or purchase description. Many situations may arise that require written changes or formal modifications of a contract. Contract administration includes the management of such modifications, specifically evaluating the change request and negotiating its terms.

NASA has had problems with contract administration for some time and has initiated or planned a number of improvement efforts. These efforts include increases in procurement staffing, a special focus on selected contract management issues, more contract administration planning, and emphasis on timely negotiations of contract changes. NASA will use its procurement management surveys to evaluate its progress in improving contract administration. These surveys, which are done about every 2 years primarily by procurement personnel from NASA headquarters, examine contracting practices at NASA centers. The surveys are intended to (1) provide insight into the management of procurement functions; (2) help assess vulnerability to fraud, waste, and abuse; and (3) assist center procurement officials in implementing corrective actions to reduce such vulnerability.

---

## Results in Brief

Most of the 65 cost and schedule modifications GAO reviewed were caused by NASA center actions, including changing contract terms, specifications, or scope. Contractor performance and unforeseen circumstances beyond the control of the center or the contractor caused the remaining modifications.

GAO's work showed that NASA had significant problems in administering some of these contract modifications. There were 29 contract administration problems in the 65 modifications. Problems identified at one or more of the centers included (1) new work noncompetitively added to contracts without justifying sole-source procurement, (2) negotiations of contract changes not completed in a timely fashion, (3) unauthorized personnel directed contractors to perform additional work, and (4) proposed contract changes not adequately evaluated.

Over the last several years, NASA's procurement management survey reports have identified some of these same contract administration problems, and the centers have made changes based on survey results, including improving and expanding training. In addition, although NASA procurement officials have recently begun efforts to enhance procurement management surveys, these surveys could be further improved by adjusting their focus, scope, and frequency.

---

## Principal Findings

---

### Reasons for Contract Modifications

GAO reviewed 65 modifications that increased contracts' costs by approximately \$51 million and extended delivery schedules by about 21 years. NASA's actions caused more than 50 percent of the modifications. These 34 modifications occurred mainly because procurement personnel added work within the scope and nature of the original contracts, added new work because of a change in requirements, changed specifications or other contract terms, or changed contract delivery or performance dates. Defective or incomplete plans, specifications, or statements of work also contributed to the need for some of these modifications. Contractors caused 12, or about 19 percent, of the modifications, and unforeseen circumstances beyond the control of either NASA or the contractor caused 19 modifications, or about 29 percent.

---

### Contract Administration Problems

NASA center personnel improperly extended one contract and noncompetitively added new work to another without justifying them as sole-source procurements. The changes increased the existing contracts' value by a total of about \$2.9 million. When contracts are not awarded competitively, the government may have less assurance that it is paying fair and reasonable prices for goods and services, and it may lose the

opportunity to obtain lower prices and increase the efficiency of its programs.

Ten unpriced contract changes, valued at approximately \$32 million, were not negotiated within the 180-day period NASA officials generally use as a guideline for timely negotiations. Unpriced contract changes that are not negotiated in a timely manner provide limited incentive for the contractor to control costs. Five of these ten changes remained unpriced for approximately 1 year or more; one remained unpriced for 552 days. NASA has recently made progress in reducing the backlog of unpriced contract changes. However, NASA's efforts will continue because its four largest procurement centers reported that, as of July 31, 1991, 234 unpriced contract changes, valued at \$2.2 billion, were over 6 months old. Over half of this dollar amount was related to 91 changes that were still unpriced after 1 year.

In four instances at one center, unauthorized individuals directed contractors to work beyond existing contract requirements. Only the contracting officer is authorized to make such changes. These unauthorized actions by program office personnel resulted in additional costs of approximately \$340,000 and extended one contract's schedule by about 7 months. In all four instances, contracting officers said they would have authorized the changes if they had been requested to do so in advance. However, such unauthorized actions violate internal controls that are intended to prevent interference with a contracting officer's responsibilities as the government's representative on contracts. The center attempted to address this problem by issuing guidelines and offering training. However, the training was voluntary and has been offered only a few times, and most of the program office personnel GAO interviewed did not have the guidelines.

Thirteen required evaluations either were not done or did not meet the government, agency, or center criteria. Two evaluations—a cost analysis and a technical evaluation—were not performed for one modification. In addition, 11 other technical evaluations were incomplete or poorly documented. These evaluations were performed by the contracting officers' technical representatives, who are engineers or scientists from the program being supported by the contract. These technical representatives frequently did not evaluate all the necessary technical elements of the contractors' change proposals or explain the rationale they used to reach their conclusions. Although the technical evaluations did not properly support contracting officers' assessments of contractors' change proposals, the contracting

---

officers accepted them and did not require the technical representatives to revise them.

A training course was developed at one NASA center with persistent problems with the quality of its technical evaluations, but center management was slow to implement it. None of the nine technical representatives interviewed had attended the training. At another center, technical evaluation training did not begin until 1990. Since then, a number of technical representatives have received training, but center procurement officials acknowledged that they do not know which technical representatives still require training.

---

## Enhancing Procurement Management Surveys

NASA's procurement management survey reports have routinely identified some of the same contract administration problems that GAO found. This suggests that the actions taken so far have not yet corrected the underlying causes of these problems. Surveys are currently limited because they generally do not assess the causes of the problems identified or recognize the differences in the extent and significance of these problems among the centers. The surveys address a broad range of subjects with limited time and resources and may be conducted too infrequently at some centers.

Procurement officials at NASA headquarters acknowledged surveys could be a better management tool and have recently initiated efforts to improve them. For example, surveys have begun to focus on contract administration functions, and one survey determined some of the causes of delayed negotiations of unpriced contract changes.

---

## Recommendations

GAO recommends that the NASA Administrator

- establish and enforce minimum training requirements for technical representatives that emphasize their role and responsibilities, scope of authority, and relationship to other members of the procurement management team and
- direct contracting officers to enforce requirements that technical representatives perform and document adequate technical evaluations.

Additional recommendations appear in chapters 2 and 3 of this report.

---

## Agency Comments

GAO did not obtain official agency comments on this report. However, GAO discussed the information in a draft of this report with NASA officials and incorporated their comments where appropriate.

# Contents

<hr/>	
<b>Executive Summary</b>	2
<hr/>	
<b>Chapter 1</b>	8
<b>Introduction</b>	
Contract Administration Process and Responsibility	8
NASA's Awareness of Contract Administration Problems	9
Objectives, Scope, and Methodology	11
<hr/>	
<b>Chapter 2</b>	13
<b>Causes of and Problems in Administering Modifications</b>	
Reasons for Contract Modifications	13
Weaknesses in Administering Contract Changes	14
Conclusions	18
Recommendations	18
<hr/>	
<b>Chapter 3</b>	19
<b>Opportunities to Improve Procurement Management Surveys</b>	
Survey Limitations Can Be Overcome	19
Conclusions	20
Recommendation	21
<hr/>	
<b>Appendixes</b>	
Appendix I: Number of Contracts and Modifications Reviewed and Problems Found at Each Center	22
Appendix II: Major Contributors to This Report	23
<hr/>	
<b>Tables</b>	
Table 2.1: Reasons for Contract Modifications and Associated Cost and Schedule Changes	13
<hr/>	
<b>Figures</b>	
Figure 1.1: Percentage Increases in NASA Procurement Personnel and Procurement Obligations in Fiscal Year 1990 Constant Dollars	10

---

## Abbreviations

FAR	Federal Acquisition Regulation
GAO	General Accounting Office
NASA	National Aeronautics and Space Administration





# Introduction

---

The National Aeronautics and Space Administration (NASA) spends almost 90 percent of its funds each year to procure goods and services. Although this percentage has remained virtually the same over the last several years, the actual amount NASA spent on procurement has increased each year. In fiscal year 1991, NASA's procurement obligations totaled approximately \$13.2 billion, an increase of about 4.7 percent over fiscal year 1990 and almost 21 percent over fiscal year 1989.

---

## Contract Administration Process and Responsibility

Contract administration helps ensure that NASA will receive the goods and services for which it contracted, at a reasonable cost, in a timely manner, and according to the specifications, work statements, or purchase descriptions. Contract administration covers a broad range of activities necessary to protect the government's rights and interests. Depending on the contract's complexity, these administrative functions may vary from limited to almost constant monitoring of the contract.

A contract may require changes or formal modifications that will increase its estimated cost or extend its schedule. For example, a contract had to be changed when a power surge damaged equipment and the system's design was also found to be too sensitive to electronic disturbance. Another contract was modified to extend the delivery date when an item failed a qualification test and had to be redesigned. Contract administration includes the management of such cost and schedule changes. Key NASA employees managing these changes include contracting officers, technical representatives, and contract specialists.

Contracting officers work on various activities throughout the entire procurement process, such as planning, negotiating and awarding contracts, and monitoring performance. Contracting officers, who may work on several contracts at one time, are responsible for enforcing contract provisions and ensuring that the contracting process functions efficiently. They are the only individuals authorized to direct or accept changes to the contract work, completion date, or cost. Their activities during contract performance include (1) reviewing proposed changes to the contract specifications and work scope, (2) modifying the contract to incorporate changes, and (3) negotiating cost changes.

Technical representatives serve as technical liaisons between a contractor and a contracting officer. They are usually from the program office that requested the procurement and may work on one or more contracts. Their duties generally include (1) monitoring the contractor's technical

performance, (2) determining when and how the contract specifications and work scope need to be changed, (3) evaluating the technical content of contractor change proposals, and (4) notifying the contracting officer about performance problems so that contract provisions can be enforced. Technical representatives may provide technical direction to contractors during contractor performance. They may not authorize changes to the contract affecting the required work, cost, or completion date.

Contract specialists assist contracting officers with contract administration duties such as preparing documents, attending meetings, communicating with technical representatives, maintaining contract files, processing change orders, and negotiating with contractors.

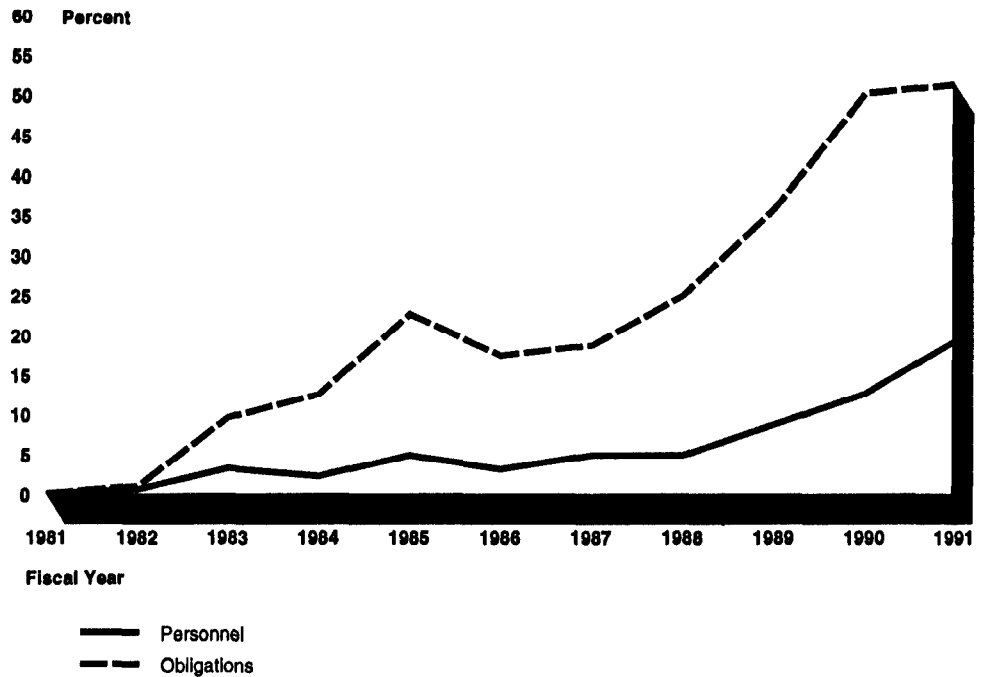
---

## NASA's Awareness of Contract Administration Problems

NASA's Office of Procurement conducts surveys of each procurement center on a cyclical basis approximately every 2 years. These procurement management surveys evaluate contract administration functions for compliance with the Federal Acquisition Regulation (FAR), NASA's FAR Supplement, and individual center procurement instructions.

The results of procurement management surveys, as well as audits by NASA's Inspector General, led NASA to identify contract administration as an area vulnerable to waste and mismanagement since the late 1980s. NASA officials believe that the agency's contract administration capability has eroded significantly primarily due to a shortage of contract administration personnel. In the last decade, the value of NASA procurement obligations increased about 51 percent from \$8.4 billion to \$12.7 billion in fiscal year 1990 constant dollars. However, the number of procurement personnel who worked to award and administer these contracts, including contracting officers and specialists, administrative professionals, and clerical staff, grew only about 19 percent, increasing from 907 to 1,082. The relative growth in procurement personnel and procurement obligations is shown in figure 1.1.

**Figure 1.1: Percentage Increases in NASA Procurement Personnel and Procurement Obligations in Fiscal Year 1990 Constant Dollars**



Although the number of contracts NASA awarded decreased from fiscal year 1981 to fiscal year 1991, NASA officials believe that the complexity of awarding and administering these contracts has actually increased. While the number of smaller, simpler contracts valued at below \$100,000 decreased from 2,404 to 888, the number of larger, more complex contracts valued at over \$1 million more than doubled from 111 to 236. In addition, the percentage of contracts NASA awarded competitively had steadily grown from 45 percent in fiscal year 1981 to 82 percent in fiscal year 1991. Generally, the award process for competitive contracts is more complex and requires more effort than for noncompetitive awards. NASA officials believe that contract administration will gradually improve due to various improvement efforts. These efforts, scheduled for completion by the mid-1990s, include increases in the number of procurement personnel and reallocation of about 100 additional positions to procurement offices at headquarters and field centers by the end of fiscal year 1993.

Other corrective actions are also underway or planned. In August 1990, NASA's Office of Procurement, which provides policy guidance and monitors the field centers' contract administration practices, established a

new branch to focus on contract management issues, such as the delegation of contract administration to the Department of Defense, subcontract pricing and competition, subcontract approval, and contractor purchasing system reviews. NASA also now requires more contract administration planning, and NASA's field centers have been working to negotiate unpriced contract changes in a more timely manner. To further address contract management weaknesses, NASA is considering establishing a contract management division in the Office of Procurement and plans to improve and expand procurement training. NASA's procurement management surveys have also begun to focus increasingly on contract administration issues and will be used to evaluate the effects of the changes made.

---

## Objectives, Scope, and Methodology

The Chairman of the Subcommittee on Investigations and Oversight, House Committee on Science, Space, and Technology, requested that we assess selected NASA contract administration practices. Specifically, the Chairman asked that we (1) determine the causes for cost and schedule modifications to NASA contracts and (2) identify problems with the administration of these modifications.

We performed our review at NASA headquarters, Washington, D.C.; Goddard Space Flight Center, Greenbelt, Maryland; Kennedy Space Center, Florida; Marshall Space Flight Center, Huntsville, Alabama; and Johnson Space Center, Houston, Texas.

During a prior review, we scientifically selected a sample of 317 contracts at NASA's four largest procurement centers and estimated the number of contracts experiencing cost increases and schedule delays.<sup>1</sup> For this review, we selected 28 of the 317 contracts for more detailed examination. These contracts, with a combined estimated award value of about \$305 million, had experienced significant cost increases or schedule extensions. We reviewed 65 modifications and 23 related change orders involving cost or schedule changes on the 28 contracts. We selected the modifications based on their high-dollar value or the significant amount of time they added to the contracts' schedules. In total, they increased costs by approximately \$51 million and added about 21 years to delivery schedules. Of the 65 modifications, 31 were on fixed-price contracts, 33 on cost-reimbursable contracts, and 1 on a combined fixed-price/cost reimbursable contract. We also selected modifications on contracts in each

---

<sup>1</sup>NASA Procurement: Management Oversight of Contract Cost and Time Changes Could Be Enhanced (GAO/NSIAD-91-259, Sept. 30, 1991).

NASA product category—33 were in research and development, 24 in service, and 8 in supplies and equipment.

We used a standard data collection form to record information on each modification and related change orders. We pretested this form at Goddard Space Flight Center, in consultation with center and headquarters officials. The information was used to determine the causes of cost increases and schedule changes and compliance with the FAR, NASA FAR Supplement, and centers' procurement directives. To complete each form, we reviewed contract files and discussed the modifications with NASA procurement personnel and technical representatives.

We also reviewed other relevant documents, such as vulnerability assessments prepared by the centers as part of their internal control assurances under the Federal Managers' Financial Integrity Act, NASA Inspector General reports, and NASA's procurement management surveys.

We conducted our work from February 1991 to January 1992 in accordance with generally accepted government auditing standards. As requested, we did not obtain official agency comments on this report. However, we discussed the issues presented in this report with NASA officials and included their comments where appropriate.

# Causes of and Problems in Administering Modifications

Most of the 65 cost and schedule modifications were caused by NASA center actions, including changing contract terms, specifications, or scope. Contractor performance and unforeseen circumstances beyond the control of the center or the contractors caused the remaining modifications.

There were 29 significant problems in administering some of these modifications. Specifically, (1) new work was added noncompetitively to contracts without justifying sole-source procurement, (2) negotiations of contract changes were not completed in a timely fashion, (3) unauthorized personnel directed contractors to perform additional work, and (4) proposed contract changes were not adequately evaluated.

## Reasons for Contract Modifications

The 65 modifications collectively increased contracts' costs by approximately \$51 million and extended delivery schedules by about 21 years. NASA's actions caused more than 50 percent of the modifications. Contractors caused about 19 percent and unforeseen circumstances beyond the control of either NASA or the contractor caused about 29 percent. Table 2.1 shows the reasons for the modifications and their impact on the contracts' costs and schedules.

**Table 2.1: Reasons for Contract Modifications and Associated Cost and Schedule Changes**

Dollars in millions

Reasons for change	Modifications		Cost changes		Schedule changes	
	Number	Percent	Amount	Percent	Time (In years)	Percent
NASA action	34	52.3	\$25.0	48.6	11.1	52.1
Contractor performance	12	18.5	3.7	7.2	5.7	26.8
Unforeseen circumstances	19	29.2	22.7	44.2	4.5	21.1
<b>Total</b>	<b>65</b>	<b>100.0</b>	<b>\$51.4</b>	<b>100.0</b>	<b>21.3</b>	<b>100.0</b>

The 34 modifications caused by NASA occurred primarily because center procurement personnel added work within the scope and nature of the original contracts, added new work because of a change in requirements, changed specifications or other contract terms, or changed contract delivery or performance dates. Defective or incomplete plans, specifications, or statements of work contributed to the need for five of the modifications caused by NASA. In one case, a contract was modified 9 months after award because the original statement of work was incomplete. The current technical representative, who began working on the contract after

the original statement of work was being developed, stated that the need for additional work was known before the contract was awarded. He also said that his suggested work additions were not incorporated before contract award because procurement and program officials were anxious to make the award and decided to add the work by modifying the contract at a later date.

In addition, three other NASA modifications added costs totaling approximately \$400,000 that could have been avoided. For example, one contract had to be modified because the center needed to pay the contractor to locate technical records that the center was supposed to provide but was not able to locate.

Contractor performance problems and factors beyond the control of either NASA or the contractors caused the rest of the modifications. Contractors caused 12 of the modifications mainly because they performed poorly or needed additional time or money to do the original work. In one case, a contract was modified because the contractor failed to adequately monitor subcontractors that were manufacturing parts for a prototype space suit. Additional work was required when the parts did not fit together properly. The remaining 19 contract modifications were caused by unforeseen circumstances beyond the control of NASA or the contractors. Such changes occur frequently in research and development contracts because of the nature of the work. For example, one research and development contract was modified due to unanticipated technical problems in designing advanced hardware. Also, some contracts were changed because of the effects of the Challenger accident on NASA's programs. In fact, one such modification increased a contract's cost by about \$21 million, more than 90 percent of the total cost change caused by unforeseen circumstances.

---

## **Weaknesses in Administering Contract Changes**

There were 29 contract administration problems identified at one or more of NASA's four largest procurement centers. These problems included (1) new work noncompetitively added to contracts without justifying sole-source procurement, (2) negotiations of contract changes not completed in a timely fashion, (3) unauthorized personnel directed contractors to perform additional work, and (4) proposed contract changes not adequately evaluated. Some of the modifications we reviewed had more than one of these problems. The number of contracts and modifications reviewed and the problems found at each center are shown in appendix I.



---

**Unjustified, Noncompetitive  
Addition of New Work**

NASA modified two contracts by adding new work, valued at about \$2.9 million, which should have been competed or properly justified as sole-source procurements.

The Competition in Contracting Act of 1984 established full and open competition, allowing all responsible sources to compete, as the standard for awarding government contracts. To implement the act, government contracting officers must promote and provide for full and open competition when soliciting offers and awarding contracts. Contracting officers may proceed with procurements without full and open competition only after proper justification and approval.

If a contract modification requires services or supplies outside the scope of the contract, the new work is subject to the act. However, determining whether a proposed change is within or outside a contract's scope is not simple. This determination generally depends on whether the nature or purpose of the original contract would be so substantially changed that the modified contract would be essentially different than the original contract and that the field of competition for it would be materially changed. Several factors must be considered in making these judgments, including the extent of any changes in the type of work, the performance period, and the cost of the modification and the original contract.

Center procurement personnel improperly modified one of the two contracts by noncompetitively extending it for more than 2 years, even though the contract had no remaining options. NASA headquarters procurement officials agreed that this contract should not have been modified and said that the practice of adding unjustified, noncompetitive follow-on requirements to existing contracts has been stopped. In the second case, center procurement personnel acknowledged that work added to an existing contract should have been competed, but said it was more expedient to modify the contract.

---

**Delayed Negotiations of  
Unpriced Contract Changes**

Of 23 unpriced contract changes we reviewed, 10 were not negotiated within the 180-day period NASA officials generally use as a guideline for completing such negotiations. These 10 changes had a total estimated value of about \$32 million. Five of the changes took about 1 year or more to negotiate; one took 552 days.

Unpriced contract changes allow a contractor to start work and incur costs before NASA and the contractor agree on terms and conditions, including

price. Until firm prices are negotiated, the contractor has limited incentive to control costs. If work is completed before pricing the change, the government will not have the opportunity to review the contractor's proposed costs and point out more efficient production methods or management controls.

NASA headquarters procurement officials began tracking the time required by the centers to negotiate unpriced contract changes and comparing their performances. Since then, centers have shown progress in reducing the number and value of long-standing unpriced contract changes. As of December 31, 1990, NASA's four largest procurement centers had 284 contract changes, valued at approximately \$6.2 billion, outstanding for more than 180 days. This number had decreased 7 months later to 234 changes valued at about \$2.2 billion. However, 91 of these changes, with an estimated value of \$1.2 billion, were over 1 year old.

NASA headquarters will continue to monitor the centers' unpriced changes. In addition, in October 1991, NASA's Assistant Administrator for Procurement requested that the two centers with the most significant backlogs of older, unpriced changes—Marshall and Johnson—identify and implement procedures for the timely pricing of future contract changes.

Headquarters' monitoring of unpriced contract changes, with the attendant center management focus on efficiently accomplishing the procedural data gathering, documentation, and evaluation steps supporting the negotiation of such changes, should lead, over time, to a large, permanent reduction in the number and value of older, unpriced changes throughout NASA.

---

### Unauthorized Personnel Directed Contract Changes

The contracting officer is the only individual who can authorize contract changes. However, in four instances at one center, personnel other than the contracting officer directed contractors to work beyond the contracts' original requirements. These unauthorized actions resulted in additional costs totaling approximately \$340,000. In one instance, during a preliminary design review, a contractor informed the technical representative that additional materials were needed. The technical representative authorized the use of these materials without consulting the contracting officer. This contract's schedule was also extended by about 7 months due to another improperly authorized change.

Contracting officers said they would have authorized the four changes if they had been requested to do so. Nonetheless, unauthorized actions by

technical personnel violate a basic internal management control because they bypass the contracting officer. This control is part of an orderly process under which the contracting officer is the sole government official authorized to change contracts.

In 1989, a management survey noted numerous instances where the actions of the center's technical representatives seemed to be eroding the authority of its contracting officers. In response, center management prepared guidelines for technical representatives and developed a related training course. However, most of the technical representatives we contacted at the center did not have the guidelines, and the training course was voluntary and has only been offered a few times.

---

## **Inadequate Evaluations**

We found that 13 required evaluations either were not done or did not meet government, agency, or center criteria. For one modification, neither the technical evaluation nor the cost analysis was performed. In addition, 11 other technical evaluations were incomplete or poorly documented. These evaluations did not describe the rationale technical representatives used to reach their conclusions. Six of these evaluations failed to meet the criteria that specify elements of a contractor's proposal that must be technically evaluated and documented. Two of them did not address all the required elements.

Technical representatives perform evaluations to assess the reasonableness of a contractor's proposal and provide a basis for negotiation. Without properly performed technical evaluations, procurement personnel lack important information for thoroughly evaluating contractors' proposals and obtaining the best price for the government. Contracting officers are responsible for ensuring that technical representatives properly conduct and document their evaluations. However, the contracting officers who received the incomplete or poorly documented technical evaluations did not require their technical representatives to revise them.

NASA has frequently identified problems with the quality of its technical evaluations. For example, at one center, inadequate technical evaluations have been cited as a problem since the mid-1980s. In response, center management developed a training course addressing the preparation of technical evaluations, but management has been slow to implement it. Eight of the nine technical representatives assigned to the contracts we reviewed made little or no use of center instructions for preparing

technical evaluations, and none of them had attended the training course. At another center where inadequate technical evaluations have been a continuing problem, technical evaluation training did not begin until 1990. Since then a number of technical representatives have received training, but center procurement officials acknowledged that they do not know which technical representatives still require training.

---

## Conclusions

Most of the contract administration problems we found were not new problems at the centers where we did our work. In response to these problems, centers have initiated various remedial actions, including improved and expanded training. However, the continuing existence of these problems suggests that stronger, agencywide action is required.

NASA headquarters officials have recognized the persistent nature of the problems and have begun to place agencywide emphasis on at least one of them. NASA's recent success in significantly reducing the backlog of outstanding unpriced contract changes shows how focused management attention can produce improvements quickly.

---

## Recommendations

We recommend that the NASA Administrator

- establish and enforce minimum training requirements for technical representatives that emphasize their role and responsibilities, scope of authority, and relationship to other members of the procurement management team and
- direct contracting officers to enforce requirements that technical representatives perform and document adequate technical evaluations.

We also recommend that the NASA Administrator ensure that appropriate NASA personnel at the center where we found instances of unjustified, non-competitive additions of new work to existing contracts understand the factors to consider in deciding on and justifying such additions.

# Opportunities to Improve Procurement Management Surveys

NASA uses procurement management surveys as its primary tool to evaluate the quality and effectiveness of its procurement operations, including contract administration. These surveys have identified numerous instances in which the centers' procurement activities did not comply with procurement regulations and the centers have made changes based on survey results. However, the surveys could be improved by adjusting their focus, scope, and frequency to assess the causes of the problems found and to recognize the differences in the extent and significance of problems among the centers.

## Survey Limitations Can Be Overcome

Procurement management surveys are done on a cyclical basis about every 2 years at each center by a team of approximately 11 members. Most team members are from NASA headquarters; others are from a center other than the one being reviewed. The surveys are intended to (1) provide insight into the management of procurement functions; (2) help assess vulnerability to fraud, waste, and abuse; and (3) assist center procurement officials in implementing corrective actions to reduce such vulnerability.

The surveys have led to many improvements in the centers' contract administration activities, according to NASA officials. However, major contract administration problems have been reported repeatedly, indicating that actions taken so far have not yet corrected the underlying causes of these problems. For example, inadequate technical evaluations were noted at one center as long as 8 years ago. This problem was noted again at the same center 6 years ago and was identified as a recurring finding that jeopardized the integrity of the procurement process. Although the surveys suggested, and the center initiated, remedial actions, inadequate technical evaluations continued to be reported in successive surveys in 1987, 1989, and 1991.

Procurement management surveys may be done too infrequently at some centers and may be too inflexible and too broadly focused given the time constraints. Essentially, during a 2-week period every 2 years, survey teams address a broad range of subjects at each NASA center. Given the survey schedule and the scope of the work involved, teams may not have sufficient time to assess the underlying causes of problems observed. Consequently, surveys are sometimes limited in their potential for helping to significantly reduce or eliminate serious contract administration problems.

Procurement management surveys attempt to assess the management of a center's procurement function; activities throughout the procurement

cycle, including planning a procurement and awarding and administering a contract; and other selected topics. Due to the number of topics and the limited time to address them, only a relatively small group of contracts can be reviewed. For example, at Marshall Space Flight Center, NASA's largest procurement center, 322 contracts valued at \$2.1 billion were awarded in fiscal year 1990. However, only 14 contract files were reviewed for the contract administration portion of the most recent survey.

Furthermore, the current approach that is used to plan surveys requires a fixed period of time to be spent at each center. This approach does not recognize differences in the frequency and significance of contract administration problems at individual centers. An approach with more flexibility would allow survey teams to devote more time and effort at those centers that appear to have major, persistent contract administration problems and less time and effort at those that do not seem to have such problems to the same degree.

NASA procurement officials agree that surveys could be improved and they have begun efforts to rescope and refocus them. For example, recent surveys have started to concentrate more on contract administration activities, and several team members work exclusively on this area. In addition, at least one survey attempted to determine the underlying causes of delayed negotiations of unpriced contract changes. NASA officials plan to revise procurement management survey guidelines annually to incorporate current information on areas to be reviewed. They are also considering conducting surveys more frequently at centers with serious contract administration problems.

---

## Conclusions

Surveys repeatedly reporting serious contract administration problems over several years suggest that the actions taken so far have not effectively addressed some of these problems. Yet, such surveys could be a highly workable mechanism for achieving and sustaining significant agencywide improvement in contract administration. To do this, however, changes need to be made in their focus, scope, and frequency. With such changes, the surveys should be better able to identify the underlying causes of contract administration problems and, therefore, be more useful in helping develop appropriate corrective actions. Over time, then, the surveys could help minimize the extent to which major contract administration problems occur throughout NASA.

---

**Recommendation**

We recommend that the NASA Administrator adjust the frequency of procurement management surveys and alter their scope, at least on a selective basis, to determine the causes of contract administration problems. Surveys should also be planned to recognize differences among centers and focus on those areas of the procurement process that have been previously identified as potential problems.

# Number of Contracts and Modifications Reviewed and Problems Found at Each Center

<b>Number of</b>	<b>Goddard</b>	<b>Johnson</b>	<b>Kennedy</b>	<b>Marshall</b>	<b>Total</b>
Contracts	4	11	5	8	28
Modifications	16	16	18	15	65
Problems					
Unjustified, noncompetitive additions	0	2	0	0	2
Delayed negotiation of unpriced changes	0	3	2	5	10
Unauthorized personnel directing changes	0	0	0	4	4
Inadequate evaluations	0	2	3	8	13
<b>Total</b>	<b>0</b>	<b>7</b>	<b>5</b>	<b>17</b>	<b>29</b>



---

# Major Contributors to This Report

---

**National Security and  
International Affairs  
Division, Washington,  
D.C.**

Frank Degnan, Assistant Director  
Pasquale L. Esposito, Evaluator-in-Charge  
Ilene Cranisky, Site Senior  
Sandra Gove, Evaluator

---

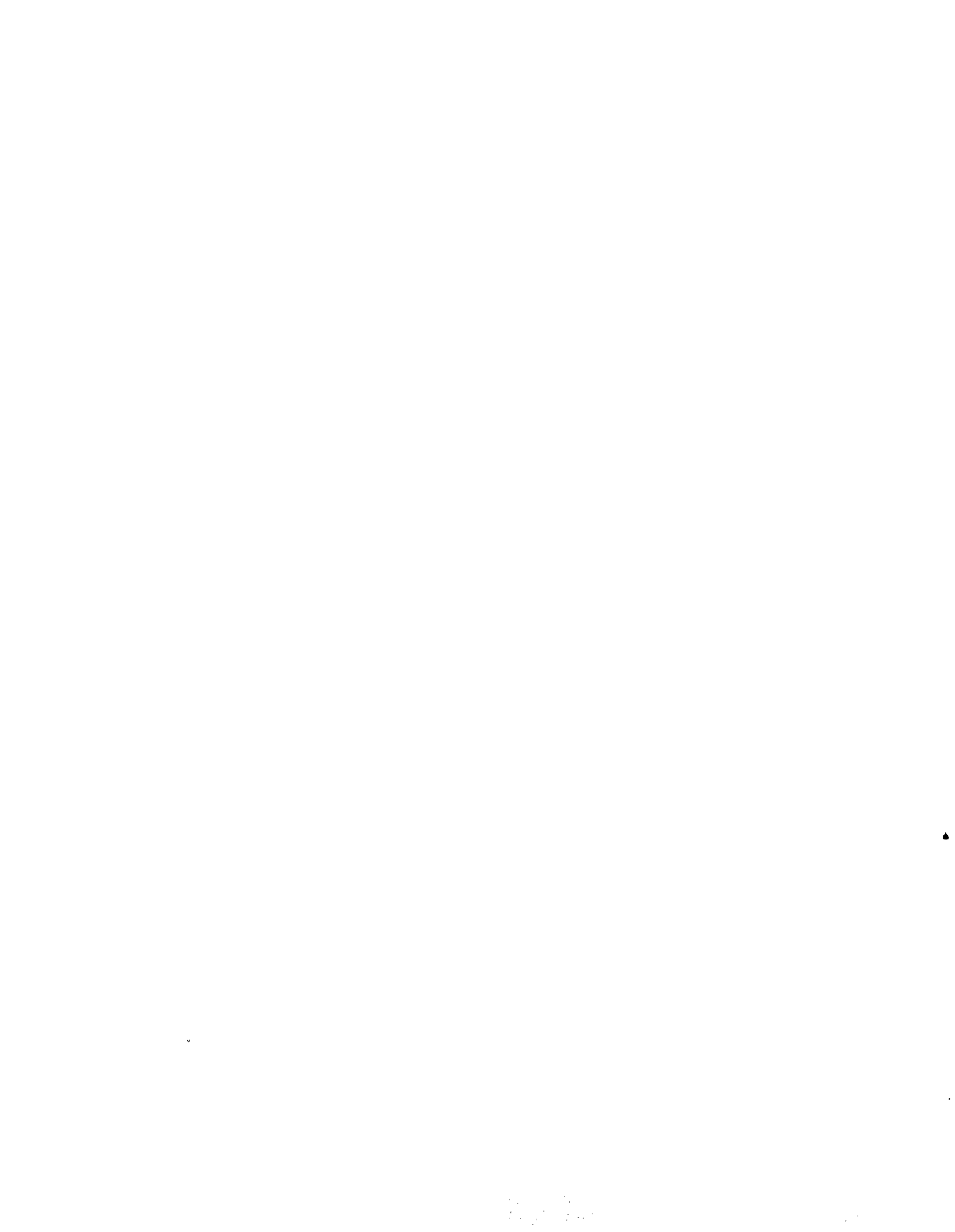
**Atlanta Regional Office**

Bobby D. Hall, Site Senior  
Joanna M. Stamatiades, Site Senior  
Barbara H. Haynes, Evaluator  
Tom L. Gordon, Evaluator

---

**Dallas Regional Office**

Don Watson, Site Senior  
Jim L. Rose, Evaluator



---

### **Ordering Information**

**The first copy of each GAO report is free. Additional copies are \$2 each. Orders should be sent to the following address, accompanied by a check or money order made out to the Superintendent of Documents, when necessary. Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.**

**U.S. General Accounting Office  
P.O. Box 6015  
Gaithersburg, MD 20877**

**Orders may also be placed by calling (202) 275-6241.**

---

**United States  
General Accounting Office  
Washington, D.C. 20548**

**Official Business  
Penalty for Private Use \$300**

**First-Class Mail  
Postage & Fees Paid  
GAO  
Permit No. G100**

---