CBO TESTIMONY

Statement of
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on
Restructuring NASA

before the
Subcommittee on Space and Aeronautics
Committee on Science
U.S. House of Representatives

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NOTICE

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Mr. Chairman and Members of the Subcommittee, I appreciate this opportunity to discuss restructuring the National Aeronautics and Space Administration (NASA) and the agency's continuing effort to adapt to lower budgets. The Congressional Budget Office (CBO) presented testimony to this Subcommittee in October 1993 and released a related study, *Reinventing NASA,* in March 1994, both of which respond to the questions before the Subcommittee today. CBO's last look at NASA reached two conclusions:

- Changing the way that NASA does business may offer improved program management and technical performance and some cost reductions, but the associated budgetary savings are uncertain and unlikely to be realized in the near term.

- Canceling, scaling back, or stretching out programs and reducing NASA's federal workforce are necessary to lower the cost of NASA's program to the level included in the President's 1994 budget plan. Cost reductions created by more efficient management, procurement, and acquisition practices are unlikely to be large enough to allow NASA's budget to be cut further without additional reductions in its program. Ultimately, a smaller budget will mean a smaller program and fewer accomplishments for the civilian space program.

The five-year plan consistent with the President's budget for 1996 requires the agency to make unspecified reductions of slightly more than $4 billion for 1997

through 2000. The agency is faced with the unenviable choice of reducing its current program, trimming its institutional capability (including the civilian workforce), dramatically narrowing its focus, or some mix of the three. The conclusion CBO reached 18 months ago seems more pertinent than ever: ultimately, a smaller budget will mean a smaller program and fewer accomplishments for the civilian space program.

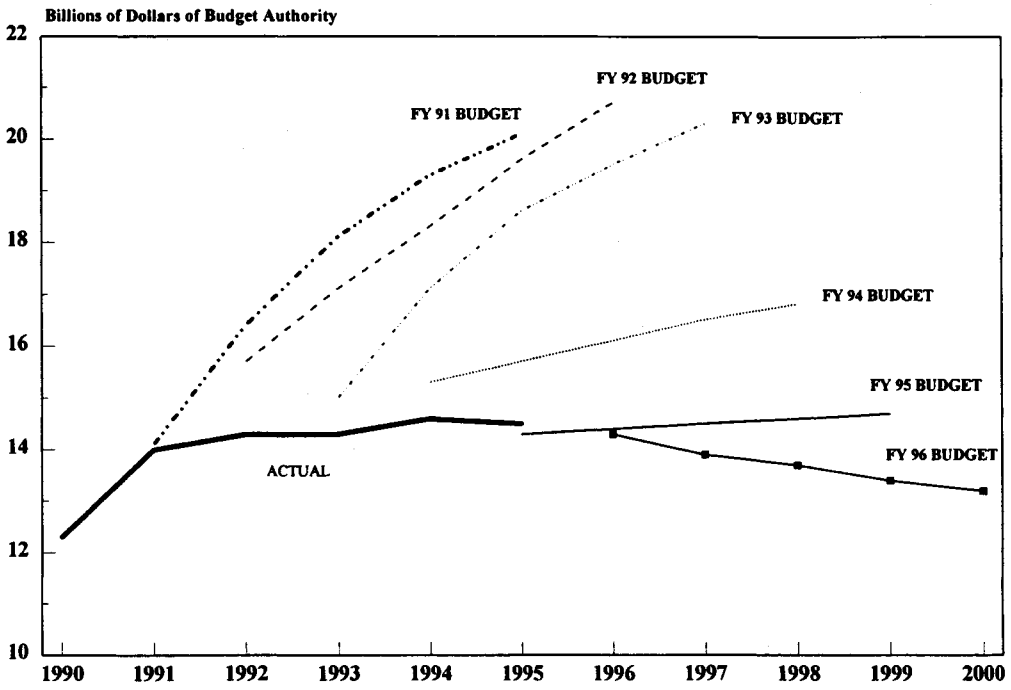
Absorbing a large part of the $4 billion reduction may be possible by decreasing NASA's civilian workforce and other costs carried in the agency's institutional accounts (largely captured in the accounts known as research and program management). One might question, however, whether maintaining the current program's scope with reduced overhead delivers the most benefit to the taxpayer. An alternative approach would be to adopt a strategy that narrows the agency's mission, or product line (to use the language of the private sector), based on a clear understanding of which activities produce the greatest benefit for their cost. That approach may capture even greater saving than those required by the President's request for 1996. NASA might be called on to make such larger reductions should the Congress devise an overall budget plan that reduces the deficit more than the President's budget proposal does.

BACKGROUND

The current demand to reduce NASA's planned spending is only the most recent in a series of reductions that have bedeviled NASA's management since 1993. Since 1991, the space agency's budget has been essentially flat, inching up from $14.0 billion to $14.3 billion (see Figure 1). Before the 1994 budget plan, however, NASA's budget plans for 1991 through 1993 proposed programs that would have driven the agency's budget above $20 billion annually. NASA's five-year plan accompanying the agency's 1994 request began the process of deflating those expectations. That plan called for $16 billion less than what the agency anticipated in the 1993 plan. The five-year plan submitted with the President's request for 1995 required further cuts of about $10 billion.

Compared with the previous two budget exercises, the five-year plan that was to accompany the President's 1996 request for NASA required only minor adjustments--reductions of $405 million from 1996 through 2000. In January, however, NASA and other agencies were directed to make additional reductions. Specifically, the agency was asked to freeze its budget at the level of funding requested for 1996--$14.3 billion--and make increasingly larger reductions from that level for each year from 1997 through 2000. In that final version of the President's 1996 request, NASA would be funded at $13.2 billion in 2000, a decrease of 9 percent from the 1995 level before adjusting for inflation, but almost 25 percent after

FIGURE 1. FIVE-YEAR BUDGET REQUESTS OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, 1990-1996 (By fiscal year)



SOURCE: Congressional Budget Office based on *Budget of the United States Government* (various years) and 1993 projections from the NASA Comptroller's Office.

NOTE: FY = fiscal year.

accounting for inflation. Currently, NASA's management is focused on adjusting its program to accommodate the total of $4 billion in unresolved reductions--the bottom line of the January exercise.

The past provides guidance as to how the agency will eventually resolve its current problem. In adjusting to lower budgets in future years, NASA and the Congress have:

- Canceled programs--for example, the Comet Rendezvous/Asteroid Flyby Mission and the Advanced Solid Rocket Motor for the space shuttle;

- Scaled back and diminished programs--notably, the space station, the Earth Observation System, and the space shuttle annual flight rate; and

- Delayed programs--for example, the advanced tracking and data relay satellite.

The agency also reduced its federal workforce--a continuing theme in the current period--to comply with an across-the-board reduction in federal employment ordered by the President.

Equally important, during 1993, NASA embarked on a number of efforts to

improve its management and financial control with the objective of buying more program for less money. In a 1994 report, CBO reviewed a set of proposals initiated by NASA to improve the way it conducts business. Those proposals included making changes in management, procurement, and planning; placing greater reliance on the private sector and international partnerships; streamlining the agency's organization; and changing its organizational culture by employing the principles of total quality management.

It is still too soon to say whether those and other similar reforms will allow the agency to buy more for less. It is encouraging that improvement is evident in program cost and schedule estimates, implying general improvement in project control. Yet more detailed evaluation of specific NASA initiatives--for example, cost savings associated with applying the principles of total quality management to NASA's operation--have not been undertaken. Success in those enterprises, however, remains imperative in carrying out NASA's program within its current budget and in accommodating that program within even smaller budgets.

THE NEXT ROUND OF REDUCTIONS AND THE FUTURE

NASA has not specified how it will close the remaining gap of $4 billion in its 1996 budget, and CBO cannot be certain how the agency will eventually accomplish that

feat. The changes necessary to get from the 1995 to the 1996 plan are instructive, however. The agency combined a search for gains in efficiency with cuts, deferrals, and limits in program activities in a continuing effort to close the gap between the great expectations of the early 1990s and current budget realities. NASA may do so again in resolving this year's problems. As noted in previous testimony and CBO's 1994 study, gains in efficiency may be difficult to realize and take several years to account for budgetary savings. Moreover, NASA is counting on as yet unrealized gains in efficiency--for example, in operating the space shuttle--to live within its original budget plan for 1996. The tougher choices of downsizing the institution and the program now remain if NASA is to live within the budget proposed by the President.

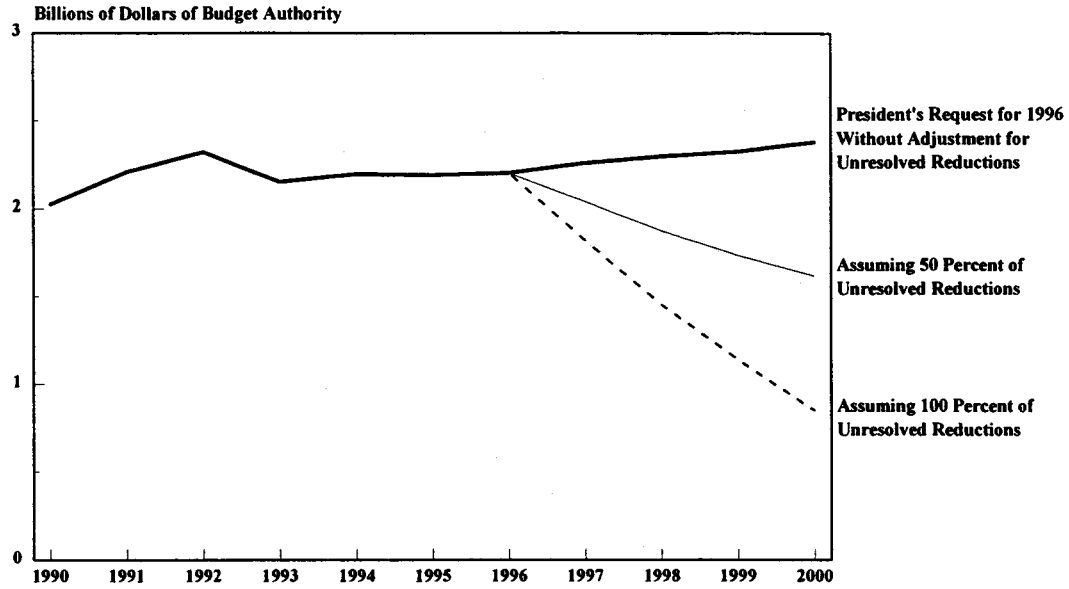
Downsizing the Institution

Some people suggest that NASA approach its problem in the same way that private firms have when forced to "downsize." The agency's current effort to adjust to lower budgets emphasizes reductions in personnel and the institution, so that the program can be saved. That approach is analogous to a private firm's effort to restructure by reducing the resources devoted to middle-management functions and eliminating redundant functions and facilities. Moreover, it is consistent with the type of changes NASA initiated in 1993.

Successfully adopting that approach to downsizing requires NASA to make larger-than-proportional reductions in overhead and management functions so that more valued program dollars can be spared additional cuts. To date, by the imperfect measures available, NASA has not made substantially greater than proportional reductions in its overhead. The research and program management (R&PM) category of NASA's budget, which was $2.2 billion in 1995, includes the funding necessary for salaries, benefits, travel requirements, and other support for the civilian workforce and the necessary funding for all of NASA's administrative functions that support research in NASA field centers. Program accounts certainly include additional overhead costs, but the R&PM category captures a large part of NASA's spending for overhead. For 1990 through 1995, the share of NASA's budget accounted for by R&PM spending moved down only slightly from 16.4 percent to 15.1 percent of the agency's budget authority. During that same period, the share of salaries and expenses--a component of R&PM--grew from 10.3 percent of the agency's budget to 11.4 percent.

Under the 1996 budget plan, before correcting for the unresolved reductions, research and program management spending would enjoy small increases each year from 1996 through 2000 (see Figure 2). The R&PM share of NASA's planned budget authority would increase to 18.1 percent, and the category for salaries and expenses would grow to 13.8 percent of the same total, if projected spending in those accounts was left unchanged in NASA's plan to fit its program into a smaller overall budget.

FIGURE 2. FUNDING FOR NASA'S RESEARCH AND PROGRAM MANAGEMENT UNDER ALTERNATIVE SCENARIOS TO COMPLY WITH THE PRESIDENT'S REQUEST FOR 1996 (By fiscal year)



SOURCE: Congressional Budget Office based on the *Budget of the United States Government* (various years); National Aeronautics and Space Administration, *Budget Estimates, Fiscal Year 1996*, vols. 1 and 2; and unpublished information from NASA's Comptroller's Office.

NOTE: From fiscal year 1991 through fiscal year 1994, research operations support (ROS) funding was budgeted and managed by the NASA program offices with institutional responsibilities. In the fiscal year 1995 budget, ROS funding was consolidated in the appropriation for research and program management account/mission support.

Although NASA has not spelled out how it will close the $4 billion gap in its budget, larger-than-proportional reductions in overhead are consistent with themes sounded by the agency's management. For example, absorbing half of the $4 billion reduction in the R&PM accounts, over the 1997 through 2000 period, would result in a projected funding level of $1.6 billion in 2000, or 12.3 percent of the agency's projected budget. If the entire reduction was taken from overhead, the level of funding for R&PM would be $847 million in 2000--in other terms, about 39 percent of the 1995 level and about 6.4 percent of the agency's projected budget.

Under its current plan, NASA projects that its full-time-equivalent civil service workforce will fall from about 23,100 in 1995 to 20,900 in 2000. Reductions far below that level would be necessary if the overall R&PM budget was reduced. The reason is that the salary and expenses category of R&PM that pays for the civilian workforce accounts for 75 percent of total R&PM and is, after a point, more easily adjusted than other parts of the accounts that cover the fixed costs of keeping NASA's field centers open. In the time permitted to prepare this testimony, CBO has not been able to prepare an estimate of how much NASA's civilian workforce would have to be reduced to fit within lower R&PM budgets. Substantial reductions would probably be necessary, however.

The amount of benefits that would be lost by reducing R&PM to the levels just discussed is unknown. Eliminating redundancies and expertise in the government

that can be purchased from private industry may result in some budgetary savings. One person's redundancies, however, are another person's means to provide fail-safe mechanisms and to ensure that a sufficient level of technical competence is spread throughout the agency to allow a healthy competition among ideas and approaches. Moreover, personnel cuts that reduce the government's ability to be a smart buyer may in the end cost more than they save.

Finally, some people question whether NASA could possibly maintain the scope of its current program with a federal workforce that might be only half of its current size. From this perspective, it might be preferable--and even imperative--to reduce the agency's scope of activities as well as downsizing its overhead.

Narrowing the Product Line

In its previous testimony, CBO examined a more radical approach to living with less. NASA could reduce its budget by narrowing the focus of its program and eliminating, rather than scaling back, parts of the agency's traditional agenda. Specifically, the agency could be directed to mothball its piloted spaceflight program or to shut down most of its unpiloted space science activities. That approach is also analogous to another widely used strategy in the private sector that seeks to restore profitable operation to a struggling concern by narrowing its scope of activities. The approach

achieves cost savings by selling off lines of business and the facilities that go with them. Improved performance is realized by concentrating the remaining assets of the firm on fewer markets and objectives.

CBO's 1994 report developed three alternative programs that each focused on specific parts of NASA's current product line--namely, a program emphasizing human spaceflight with an annual budget of $14.3 billion, a program that emphasized space science and maintained piloted spaceflight for that purpose with an annual budget of $11 billion, and a program that emphasized space science and technology development and eliminated piloted spaceflight for an annual budget of $7 billion.

Since the release of the report, some people have questioned the costs associated with those options. For example, NASA has indicated that the savings from eliminating the space station program but maintaining the shuttle for limited use would only be about $1 billion annually rather than the $3 billion implied by the second option. A recent estimate approximating the third option that would eliminate both the space station and the space shuttle placed annual savings at around $5 billion (after covering smaller savings for one year when termination costs were paid). By that estimate, the agency's annual budget would be around $8 billion rather than the $7 billion included in CBO's third option.

CONCLUSION

Despite the differences in budget and savings estimates, CBO maintains that the options developed in its 1994 report generally remain workable. Narrowing the product line offers an advantage compared with across-the-board downsizing. It forces the Congress and the agency to decide what is NASA's best mission at a time when resources are constrained. Continued decreases in the resources available for the civilian space program will force NASA to face the prospects of closing major centers and making additional large cuts in its federal workforce beyond those that might be proposed to fill the gaps in the 1996 budget plan. A more narrowly defined mission will permit the agency to make better choices about what should be kept and what must be abandoned. Ultimately, such an approach may provide taxpayers with the highest return for their investment in the civilian space program.