

98TH CONGRESS }  
1st Session }

HOUSE OF REPRESENTATIVES

REPORT  
No. 98-65

**AUTHORIZING APPROPRIATIONS TO THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION FOR FISCAL YEAR 1984**

APRIL 15, 1983.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. FUQUA, from the Committee on Science and Technology, submitted the following

**REPORT**

together with

**ADDITIONAL VIEWS**

[To accompany H.R. 2065]

The Committee on Science and Technology, to whom was referred the bill (H.R. 2065) to authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes, having considered the same, report favorably thereon with amendments (shown in italic in the bill accompanied by this report) and recommends that the bill, as amended, do pass.

The amendments are as follows:

Page 2, line 4 strike out "\$1,979,400,000" and insert "\$1,999,400,000" in lieu thereof.

Page 2, line 7 strike out "\$521,600,000" and insert "\$566,600,000" in lieu thereof.

Page 2, line 8 strike out "\$215,400,000" and insert "\$220,400,000" in lieu thereof.

Page 2, line 10 strike out "\$311,000,000" and insert "\$306,00,000" in lieu thereof.

Page 2, line 13 strike out "\$300,300,000" and insert "\$311,600,000, of which \$20,000,000 is authorized only for activities in the Ad-

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NASA's new initiative in the composite large expansion of this program to include advanced metals.

#### RESEARCH AND TECHNOLOGY

Request for fiscal year 1984 included research and technology activities. This program is based to support the conception and development of systems and to explore technology which will improve operations. The Committee recommended \$2,500,000 for university research instrumentation and an increase of \$2,500,000 to support high-speed propulsion technology to support high-speed systems for orbital transfer vehicles. The Committee recommended authorization of \$4,000,000.

#### CONSTRUCTION OF FACILITIES

\$10,000,000 for construction of facilities activities. Within this amount NASA requested \$5,000,000 to the General Services Administration for the transfer of real properties at Ellington Air Force Base and Johnson Space Center. The Committee recommended that the property which includes facilities that support astronaut training such as aircraft hangers, shops, and utilities required to support air operations. The Committee deleted the \$8,400,000 for the transfer can be implemented. The Committee further recommended a \$1,820,000 increase to pre-empt a tower resulting in a recommendation of \$10,000,000 for construction of facilities in fiscal year 1984.

#### PROGRAM MANAGEMENT

\$10,000,000 for the Research and Program Management for fiscal year 1984. The Committee believes that the program can be reduced by \$5,000,000 without undue impact on the agency's programs. Therefore, the Committee recommended authorization of \$1,242,500,000.

#### LEGISLATIVE AMENDMENTS

##### Section 106

The Committee proposed a new Section 106 which was proposed by the Committee's intent that NASA maintain a fifth orbiter vehicle. The Committee recommended the following "as well as provision for readiness for a fifth orbiter vehicle".

##### Section 107

The Committee adopted a new Section 107 as amended which was proposed by NASA to amend Title III of the National Aeronautics and Space Act of 1958, as amended, by adding at the end thereof a section regarding "Misuse of Agency Name and Initials".

##### Section 108

The Committee adopted a new Section 108 which would amend Section 103(1) of the National Aeronautics and Space Act of 1958, as amended, to include "operation of the space transportation system" within the definition of the term "aeronautical and space activities".

##### Title II

The Committee adopted and amended a new Title II which would authorize funds to NOAA for operating the land remote sensing satellite system and would prohibit the transfer of weather and land satellites to the private sector until certain actions are taken by the Secretary of Commerce and the Congress. The Secretary is to submit to the Congress a comprehensive statement of recommended policies, procedures, conditions, and limitations to which any transfer should be subject. The transfer cannot take place until the Congress thereafter enacts into law such policies, procedures, conditions, and limitations as it deems appropriate for any such transfer. The intent of the amendment is to ensure early, formal Congressional involvement in setting the course for a possible transfer of the remote sensing satellite systems to the private sector while reserving final Congressional approval for any proposed transfer.

## COMMITTEE VIEWS

### U.S. CIVILIAN SPACE POLICY

There has been a great deal of public discussion in the past year regarding the activities of the United States in space. Much of this discussion has centered around three main issues: the interface between the civilian and military uses of space, the commercialization of space, and the lack of focused long-range goals.

In regard to the first issue, the National Aeronautics and Space Act of 1958 provides for the establishment of a civilian agency, separate from the military, to conduct the aeronautical and space activities of the United States Government. However, the Act also provides for independent civil and defense programs to share information and technology; share launch vehicles; and where appropriate, operate cooperative programs. At issue, is not the basic concept of sharing, but the degree of participation by NASA in activities beneficial to DOD.

NASA's involvement in "dual-role" technologies is most apparent at the opposite ends of its spectrum of activities namely; space research and technology and launch operations. The fundamental character of NASA's space research and technology program, in most cases, leads to advances in technology that are applicable to both civil and military applications. For example, NASA estimates that 85 percent of its fiscal year 1984 space research and technology budget request would contribute to potential military as well as civilian applications. At the other end of the scale, DOD is a major user of the NASA-developed Space Transportation System.

It can be seen from these illustrations that NASA plays an important, if subsidiary, role in national defense. However, any expansion of that role would run the risk of compromising the open nature of our civil space program and should be vigorously resisted. Although NASA cannot be divorced completely from national security activities, adherence to the policies of the Space Act requires that NASA's participation in these activities be limited.

On the second major issue, space commercialization, there are two general areas of concern. The first is, how to transfer existing space systems? The second is, what institutional mechanisms are needed to allow for smoother transitions from Government to industry in the future? Although the stated Administration policy is to encourage the private sector to become more involved in space activities, no comprehensive principles, guidelines, or institutional frameworks have been provided. Appropriate roles and cooperative approaches for the public and private sectors must be defined more clearly.

The third main issue is the lack of long-range civil space goals. Since the Apollo program, there has been no clear objective that the Nation could focus on and identify with. Long-range planning or goal setting is required to balance the numerous space program possibilities and opportunities against each other and against other existing national needs. Out of this balancing a program direction could be chosen which would be in the best interest of the Nation. Establishment of long-range goals would provide a better sense of direction and commitment to guide programmatic decisions through year to year budget decisions. The absence of long-range goals results in short-term policies which change too often to allow for a cohesive, rational view of our future direction and purpose in space.

COMMERCIALIZATION OF SPACE

The Space Shuttle has ushered in a new era in the United States' space program by providing a unique and powerful space transportation capability. This capability has been made possible through the expenditure of public funds and the public trust must be protected as we move ahead with the commercialization and industrialization of space.

As the commercial opportunities offered by space exploration evolve, a new policy must be forged that provides opportunities for the American free enterprise system to use space for a variety of applications and technologies. We must assure that the strengths of free enterprise are extended to space activities, i.e. freedom of private business to organize and operate for profit in a competitive system. We should establish a policy which would encourage commercialization of space technology to the maximum extent feasible.

The Committee intends to meet this challenge and in a responsible manner address the total issue of commercialization of space by initiating intensive hearings on the subject. Sufficient time for all interested parties to participate and make a contribution will be allowed, with the intention of providing a forum for meaningful dialogue on all facets of the issue. Aerospace industry executives and entrepreneurs will be invited to air their ideas on the direction that this Nation should take in formulating a space commercialization policy.

The first and foremost goal of the Committee will be to act in the best interest of the United States, and we look forward to these hearings in the belief that they will provide guidance and scope to this most important issue.

SPACE TRANSPORTATION SYSTEM

The development of the Space Transportation System with the space shuttle as the centerpiece has established a new national resource which should be fully exploited to serve the needs for civil government, national security, commercial, and foreign users. However several uncertainties and unresolved issues strengthen the position of competitive foreign launch systems. These include the shuttle flight rate capability including adequacy of the orbiter fleet, the possible unavailability of expendable launch vehicles, and OMB's assertion that the government should not provide a launch

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ports the view that flight research is an essential R&T, and recognizing the high cost of cooperative experimental flight programs. These programs should allow adequate and involve aircraft sufficiently innovative to provide NASA with basic data for evaluating concepts, and ensure maximum technology

#### PLANS FOR AERONAUTICAL RESEARCH

stresses the importance of university participation in research programs of NASA. Such participative means of obtaining high quality results of fundamental discipline areas. In addition, programs are needed to produce the next generation of scientists.

The Committee urges NASA to include in its program designed to assure the future vitality and growth of university-based aeronautical research and training

#### WIND TUNNEL ACCIDENT INVESTIGATION

appreciates the work NASA has done in investment in the 40 x 80 foot wind tunnel at the Ames Research Center in California. However, the Committee is concerned that the 80 x 120 foot addition to this tunnel was not permitted design errors to remain undetected and to be made without adequate "change

The Committee regrets the setback in vital research activities and the financial loss of \$12 million.

The Committee is concerned about the division of responsibility and construction in NASA. Such a division of responsibility and management of large expensive projects with little or no experience in construction. Accordingly, the Committee urges NASA to review and improve its management approach and procedures for the control of the design and construction of wind tunnels. The Committee requests the Administrator to report by December 31, 1983, which describes the steps to be taken to avoid future structural facility failures and to describe the organization, management, and tools to be used.

#### SPACE NUCLEAR REACTOR TECHNOLOGY

The Committee is concerned that space nuclear reactor technology is being developed for defense applications. It is also concerned that the results resulting from the presently existing programs of DOE and DARPA will provide the technology for power subsystems suitable for space missions. It is the intent of the Committee that definition analyses proceed

in a deliberate and timely manner. NASA is therefore instructed to establish a mission planning and definition activity as part of the SP-100 program management plan, and to present substantive evidence to the Committee on or before October 1, 1983, that the organizational arrangements for implementing such activity are in place. The Committee anticipates that such mission studies will serve to delineate the power ranges most suited to nonmilitary uses of space nuclear reactors, and substantiate the appropriate level of authorized NASA funding for this work.

The Committee further requests that NASA provide a summary report to the Committee concurrently with the submission of the President's annual budget to the Congress for each year that details plans, accomplishments, schedules, and long range budgetary projections related to its activities in the SP-100 program.

#### UNIVERSITY RESEARCH INSTRUMENTATION

NASA's support to universities has declined by approximately one-third over the last decade due to other major NASA program commitments. In an environment of reduced budgets, the portion of funds dedicated to research instrumentation and equipment had declined at an even faster rate. These factors, coupled with the increasing cost of scientific equipment and the desire to maintain strong student involvement in research, have created serious problems in upgrading and replacing obsolete equipment and, therefore, have undermined the research capability and productivity of the universities that support NASA's goals and the Nation's research and development needs. The university community is a critical element of the NASA and United States long-range research capability. The augmentation recommended by the Committee will complement the recent efforts of other government agencies in attempting to reverse this deteriorating trend by providing additional funds to universities for the acquisition of modern laboratory equipment in direct support of NASA's research goals.

#### COMMERCIALIZATION OF REMOTE SENSING: ADOPTION OF TITLE II OF THE BILL

The Committee has consistently supported the commercial application of NASA-developed space technologies, as evidenced by its continuing struggle to maintain vigorous Technology Utilization and Technology Transfer programs. This is in part because the Committee believes that technology developed for government purposes should, where appropriate, be more widely used, and also because in many cases only the private sector with its marketing creativity can take full advantage of a new technology.

Both these reasons are operative with respect to space remote sensing. In particular the present market for Landsat data seems to be lacking some of the creativity and vigor that would be expected in a freely competitive business situation.

Thus the Committee does not question the value of private sector involvement where the strengths of this sector can be given free play by the removal of government restriction and the easy entry of competition. The question is whether or not a rapid transfer of all remote sensing systems to the private sector at this time would

result in such free competition and freedom from government restraint.

Any private operation of space remote sensing systems will necessarily be somewhat restricted by government in order to ensure that the international obligations of the U.S. are observed; that the national security is not comprised; and that the public safety aspects of the weather system are maintained.

Further, if a transfer to the private sector involves a guaranteed data purchase contract with the U.S. Government, such a contract would surely inhibit other firms from entering the field, and there would be little or no competition.

It must be noted that even under the restrictive conditions described above it might still be in the best interest of the government to transfer the systems to a private sector operator, but such a decision would have to be made on the basis of careful consideration rather than on a facile assumption that any private sector operator would be more effective and efficient merely because of being in the private sector.

The Committee recognizes that the commercial market for remote sensing data is still developing, and that any private operator might need some financial assistance from the government for a period of time. This possibility is another reason why the whole issue must be looked at very carefully, and why alternatives must be considered.

One alternative approach that should be considered would involve government guarantee of data continuity for a period of years to encourage the development of a vigorous value-added industry and an associated market which eventually might justify commercialization. The value-added industry could be developed with no direct Federal subsidy (beyond the guarantee of data continuity), minimal regulation, and it would be possible for many firms to enter the business and compete.

Another alternative which the Committee does not intend to discourage is the possibility of one or more private sector entrepreneurs independently financing and launching their own land remote sensing systems. This would not limit private sector involvement to just the value-added industry. It is the intent of this Committee to encourage free enterprise and not to deter the private sector from undertaking such activities, provided they are conducted in a manner consistent with governmental policies.

The Committee also wants to be assured that there is opportunity to fully consider this issue during public hearings. Although the Committee is not opposed to commercialization in general, it must assure that the national assets represented by United States remote sensing satellite systems are used in the best national interest.

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certain combinations, variations and a combination with other words or letters in commercially oriented activities, in false or misleading impression with connection with, or support, sponsorship. Such prohibition would apply to both in association with a firm or business with a product or service offered to and practices may be enjoined, or other for a civil proceeding in a district court result of action initiated by the Attorney

ness often catches the imagination of association with this success can be condition, NASA encourages the utilization and development activities; indeed, developments and resulting new products the public can accurately and properly. Occasionally, however, NASA's error that conveys a false or misleading relationship of NASA to a firm or business made available to the public. Name can be misleading to the general public who properly utilize NASA developed and accurately state their relationship the practices of the party engaging in the and the product or services provided facts, the reputation of both NASA and with NASA activities may suffer. When a continuing one since the existence become more acute as the Space Shuttle the opportunities are made available for a reimbursable basis or under a joint should be particularly unfair, for example, used in such activities and through priced commercial success, to have to controlling statements of those who have not

ized use of the NASA seal and certain are subject to the penalties of 18 U.S.C. there is no mechanism for direct ended, false or misleading use of NASA's exist in relation to a business or connection requires investigations founded and/or the trademark laws, usually in Federal Trade Commission and/or similar investigations are difficult, time consuming, cumulative. The opportunity for direct enforcement and sure, to the benefit of both the commercial competitors of those engaged in or misleading activities. Number of authorized or proper activities with NASA under which the NASA accurate, factual manner that does not

create a false or misleading impression. There is no intent by this section to change NASA's policies, practices and procedures in this regard; but only to afford NASA better capabilities for corrective action in those instances where the NASA name is used in a manner reasonably calculated to convey the false or misleading impression of a relationship with NASA which in fact does not exist.

Section 108 expands the definition of the NASA administrator's responsibilities as found in the National Aeronautics and Space Act of 1958 to include the authority to operate the Space Shuttle, and related equipment and facilities.

*Section 109*

Section 109 would provide that the Act may be cited as the "National Aeronautics and Space Administration Authorization Act, 1984."

TITLE II

*Section 201*

Section 201 authorizes \$29,336,000 for fiscal year 1984 to be used by the Secretary of Commerce to operate a civil land remote sensing satellite program including storage of a backup satellite.

*Section 202*

Section 202 stipulates that ownership or management of civil meteorological or ocean remote sensing satellites shall not be transferred unless the provisions of paragraphs 202(1) and 202(2) are fulfilled.

*Paragraph 202(1)* stipulates that the Secretary of Commerce shall not transfer ownership or management unless a statement of recommended policies, procedures, conditions and limitations for the proposed transfer is submitted to Congress.

*Paragraph 202(2)* requires transfer of ownership or management to be approved by law.

**Cost and Budget Data**

The bill will authorize appropriations for fiscal year 1984 in the amount of \$7,205,100,000. In accordance with the requirements of Rule XIII, Clause 7 of the rules of the House of representatives, the Committees estimate for the next five years of NASA budget request is as follows:

Fiscal year:	
1984.....	\$7,268,000,000
1985.....	7,028,000,000
1986.....	6,429,000,000
1987.....	6,393,000,000
1988.....	5,574,000,000

These estimates do not include provisions for any new program or program augmentation that may be recommended nor do they include any provisions for administrative adjustments that may be required.