Public Law 100-685
100th Congress

An Act

To authorize appropriations to the National Aeronautics and Space Administration for research and development, space flight, control and data communications, construction of facilities, and research and program management, and for other purposes.

Nov. 17, 1988
[S. 2209]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "National Aeronautics and Space Administration Authorization Act, Fiscal Year 1989".

National Aeronautics and Space Administration Authorization Act, Fiscal Year 1989.

TITLE I—NATIONAL AERONAUTICS AND SPACE CAPITAL DEVELOPMENT PROGRAM

FINDINGS

SEC. 101. Congress finds that—

42 USC 2451 note.

(1) in accordance with section 106 of the National Aeronautics and Space Administration Authorization Act of 1988 (Public Law 100-147), a space station, hereafter referred to as the United States International Space Station, shall be constructed in order to establish a permanent presence for man in space for the following purposes—

(A) the conduct of scientific experiments, applications experiments, and engineering experiments;

(B) the servicing, rehabilitation, and construction of satellites and space vehicles;

(C) the development and demonstration of commercial products and processes; and

(D) the establishment of a space base for other civilian and commercial space activities including an outpost for further exploration of the solar system;

(2) expendable launch vehicles should be used to launch those payloads that do not require the presence of man;

(3) the space shuttle launches should be used to fulfill the Nation's needs for manned access to space;

(4) preeminence in space and aeronautics is key to the national security and economic well being of the United States;

(5) United States space policy needs long-range goals and direction in order to provide understanding for near-term space projects and programs;

(6) over the next five years the National Aeronautics and Space Administration, hereafter referred to as the "Administration", should pursue leadership in science through an aggressive set of major and moderate missions while maintaining a robust series of cost effective missions that can provide frequent flight opportunities to the scientific community;

(7) over the next five years the Administration should prepare for the transition to the United States International Space

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INFORMATION
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Station of those science and technology programs that can be most efficiently and effectively conducted on that facility;

(8) the Administration should encourage the United States private sector investment in space and, to the maximum extent practicable provide frequent flight opportunities for the development of technologies, processes and products that benefit from the space environment;

(9) the Administration should enhance the existing space transportation capability through a robust mixed fleet of manned and unmanned vehicles in order to increase the reliability, productivity, and efficiency and reduce the cost of the Nation's access to space;

(10) the United States faces an increasingly successful foreign challenge to its traditional preeminent position in aeronautics which is rapidly reducing its lead in both civil and military aircraft;

(11) NASA's personnel are an integral component and resource for the Nation's space program, and an innovative personnel system should be developed;

(12) the establishment of a permanent presence in space leading ultimately to space settlements is fully consistent with the goals of the National Aeronautics and Space Act of 1958;

(13) the United States civil space activities should contribute significantly to enhancing the Nation's scientific and technological leadership, economy, pride, and sense of well-being, as well as United States world prestige and leadership;

(14) civil sector activities should be comprised of a balanced strategy of research, development, operations, and technology for science, exploration, and appropriate applications;

(15) assured access to space, sufficient to achieve all United States space goals, is an essential element of United States space policy, and the United States space transportation systems must provide a balanced, robust, and flexible capability with sufficient resiliency to allow continued operation despite failures in any single system;

(16) the goals of the United States space transportation system are—

(A) to achieve and maintain safe and reliable access to, transportation in, and return from, space;

(B) to exploit the unique attributes of manned and unmanned launch and recovery systems;

(C) to encourage, to the maximum extent feasible, the development and use of United States private sector space transportation capabilities; and

(D) to reduce the costs of space transportation and related services;

(17) recognizing that communications advancements are critical to all United States space activities, the Administration should continue research and development efforts for future advances in space communications technologies;

(18) the goal of aeronautical research and technology development and validation activities should be to contribute to a national technology base that will enhance United States preeminence in civil and military aviation and improve the safety and efficiency of the United States air transportation system; and

(19) aeronautical research and technology development and validation activities should—

(A) emphasize emerging technologies with potential for breakthrough advances;

(B) consist of—

(i) fundamental research in all aeronautical disciplines, aimed at greater understanding of aeronautical phenomena and development of new aeronautical concepts; and

(ii) technology development and validation activities aimed at laboratory-scale development and proof-of-concept demonstration of selected concepts with high payoff potential;

(C) assure maintenance of robust aeronautical laboratories, including a first-rate technical staff and modern national facilities for the conduct of research and testing activities;

(D) be conducted with the close, active participation of the United States aircraft industry so as to accelerate the transfer of research results to aviation products;

(E) include providing technical assistance and facility support to other government agencies and United States industry;

(F) include conducting joint projects with other government agencies where such projects contribute materially to the goals set forth in this section;

(G) assure strong participation of United States universities both in carrying out aeronautical research and training future aeronautical research personnel; and

(H) be conducted, where practical, so that United States industry receives research results before foreign competitors.

REPORT ON LONG-RANGE SPACE CAPITAL DEVELOPMENT PROGRAM PLAN

SEC. 102. In consideration of Senate Report No. 100-429 and House of Representatives Report No. 100-650, the Administrator shall, by March 15, 1989, submit to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a 5-year Capital Development Plan including, but not limited to, the following:

(1) Economic assumptions and budgetary requirements for fulfilling the objectives of such plan.

(2) Estimates of total expenditures needed to maintain the operation of the national launch systems, related tracking and data services, civil service requirements, and all other current services.

(3) A detailed operating plan for fiscal year 1989 and program plans for fiscal years 1990 through 1993 setting forth specific program priorities, objectives, schedules, and milestones.

(4) Estimates of total projected investments in space hardware, facilities, and other capital improvements needed to fulfill the objectives of such plan.

BUDGET INCREASE

SEC. 103. It is the sense of the House of Representatives that the budget for the National Aeronautics and Space Administration should increase substantially over the five years following the date of enactment of this Act with a goal of at least 15 percent growth per annum in order to—

(1) rededicate the United States space program to the goal of leadership in critical areas of space science, space technology, space exploration, aeronautics, space applications, and space commercialization;

(2) reverse the dramatic decline in real spending for such program since the achievements of the Apollo program;

(3) forge a robust national space program that maintains a healthy balance between manned and unmanned space activities and recognizes the mutually reinforcing benefits of both;

(4) continue with the development and deployment of a permanently manned space station; and

(5) enhance United States preeminence in civil and military aviation and improve the safety and efficiency of the United States air transportation system.

BUDGET REQUEST

31 USC 1105 note.

SEC. 104. Commencing in fiscal year 1990 and every year thereafter, the President shall submit to Congress a budget request for the National Aeronautics and Space Administration for the immediate fiscal year and the following fiscal year, and include budget estimates for the third fiscal year.

TITLE II—FISCAL YEAR 1989 NASA AND MULTIYEAR SPACE STATION AUTHORIZATION

AUTHORIZATION

SEC. 201. (a) There is hereby authorized to be appropriated to the National Aeronautics and Space Administration for fiscal year 1989, except as otherwise stated:

(1) For "Research and development" for the following programs:

(A) United States International Space Station, $900,000,000 for fiscal year 1989, $2,130,200,000 for fiscal year 1990, and $2,912,500,000 for fiscal year 1991.

(B)(i) Space transportation capability development, $606,600,000.

(ii) In addition to the funds authorized pursuant to this section, there are authorized to be appropriated for space transportation capability development any additional funds transferred to the Administration from any other agency pursuant to a fiscal year 1989 appropriations Act.

(C) Physics and astronomy, $761,600,000.

(D) Life sciences, $91,700,000.

(E) Planetary exploration, $410,300,000.

(F) Space applications, $628,300,000.

(G) Technology utilization, $19,100,000; provided, however, that the Administrator shall contract for implementation of the Industrial Applications Center located in

Oklahoma through the National Aeronautics and Space Administration's Rural Technology Applications Team.

(H) Commercial use of space, $38,800,000.

(I) Aeronautical research and technology, $404,200,000.

(J) Transatmospheric research and technology, $69,400,000.

(K) Space research and technology, $350,900,000.

(L) Safety, reliability, and quality assurance, $22,400,000.

(M) Tracking and data advanced systems, $18,800,000.

(2) For "Space flight, control and data communications" for the following programs:

(A) Space shuttle production and operational capability, $1,335,500,000, of which $51,000,000 is provided for the advanced solid rocket motor program.

(B)(i) Space transportation operations, $2,365,400,000, including such funds as may be necessary to ensure the availability of ammonium perchlorate for the production of solid rocket motors.

(ii) In addition to the funds authorized pursuant to this section, there are authorized to be appropriated for space transportation operations any additional funds transferred to the National Aeronautics and Space Administration from any other agency pursuant to a fiscal year 1989 appropriations Act.

(C) Space and ground network communications and data systems, $985,300,000.

(3) For "Construction of facilities", including land acquisition as follows:

(A) Modifications to processing Technology Facility for Space Station, Marshall Space Flight Center, $3,700,000.

(B) Construction of Addition for Space Systems Automated Integration and Assembly Facility, Johnson Space Center, $9,200,000.

(C) Replacement of High Pressure Gas Storage Vessels, National Space Technology Laboratory, $3,500,000.

(D) Increase Chiller Capacity, LC-39 Utility Annex, Kennedy Space Center, $2,300,000.

(E) Rehabilitation of PAD A, L-C 39, Kennedy Space Center, $4,600,000.

(F) Refurbish Atmospheric Reentry Materials and Structures Evaluation Facility, Johnson Space Center, $4,900,000.

(G) Modification for Advanced Engine Development, Test Stand 116, Marshall Space Flight Center, $13,500,000.

(H) Modifications to Orbiter Modification and Refurbishment Facility (OMRF) for Safing and Deservicing, Kennedy Space Center, $2,800,000.

(I) Modification to the X-Ray Calibration Facility (XRCF), Marshall Space Flight Center, $11,400,000.

(J) Construction of Auxiliary Chiller Facility, Johnson Space Center, $7,800,000.

(K) Modernization of Space Environment Simulator, Goddard Space Flight Center, $2,800,000.

(L) Modifications for Utility Reliability, Goddard Space Flight Center, $3,100,000.

(M) Refurbishment of 25-Foot Space Simulator, Jet Propulsion Laboratory, $12,000,000.

(N) Repair and Modifications of 12-Foot Pressure Wind Tunnel, Ames Research Center, $36,500,000.

(O) Rehabilitation and Modifications to 10x10 Supersonic Wind Tunnel, Lewis Research Center, $14,500,000.

(P) Refurbishment to Hypersonic Facilities Complex, Langley Research Center, $12,800,000.

(Q) Refurbishment of Electric Power Laboratory, Lewis Research Center, $6,100,000.

(R) Construction of National Resource Protection at various locations, $2,600,000.

(S) Repair of facilities at various locations, not in excess of $750,000 per project, $27,000,000.

(T) Rehabilitation and modification of facilities at various locations, not in excess of $750,000 per project, $34,000,000.

(U) Minor construction of new facilities and additions to existing facilities at various locations, not in excess of $500,000 per project, $9,000,000.

(V) Environmental compliance and restoration, $26,000,000.

(W) Facility planning and design not otherwise provided for, $20,000,000.

(X) Construction of an advanced solid rocket motor facility, $27,000,000.

Of the amounts authorized pursuant to subparagraphs (S) through (W), the Administrator may obligate up to $5,600,000 in order to expand the Launch Complex-39 Operation Support Building at the Kennedy Space Center. Notwithstanding subparagraphs (A) through (X), the total amount authorized by this paragraph shall not exceed $290,100,000.

(4) For "Research and program management", $1,915,000,000.

Contracts.
Grants.

(b) Notwithstanding the provisions of subsection (e), appropriations authorized in this title for "Research and development" and "Space flight, control and data communications" may be used for (1) any items of a capital nature (other than acquisition of land) which may be required at locations other than installations of the Administration for the performance of research and development contracts, and (2) for grants to nonprofit institutions of higher education, or to nonprofit organizations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities; and title to such facilities shall be vested in the United States unless the Administrator of the National Aeronautics and Space Administration (hereafter in this title referred to as the 'Administrator') determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Each such grant shall be made under such conditions as the Administrator shall determine to be required to ensure that the United States will receive therefrom benefit adequate to justify the making of that grant. None of the funds appropriated for "Research and development" and "Space flight, control and data communications" pursuant to this title may be used in accordance with this subsection for the construction of any major facility, the estimated cost of which, including collateral equipment, exceeds $500,000, unless the Administrator or the Administrator's designee has notified the President of the Senate and the Speaker of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technol-

ogy of the House of Representatives of the nature, location, and estimated cost of such facility.

(c) When so specified and to the extent provided in an appropriation Act, (1) any amount appropriated for "Research and development", for "Space flight, control and data communications", or for "Construction of facilities" may remain available without fiscal year limitation, and (2) maintenance and operation of facilities, and support services contracts may be entered into under the "Research and program management" appropriation for periods not in excess of twelve months beginning at any time during the fiscal year.

Contracts.
42 USC 2459a.

(d) Appropriations made pursuant to subsection (a)(4) may be used, but not to exceed $35,000, for scientific consultation or extraordinary expenses upon the approval or authority of the Administrator, and the Administrator's determination shall be final and conclusive upon the accounting officers of the Government.

(e)(1) Funds appropriated pursuant to subsection (a)(1), (2), and (4) may be used for the construction of new facilities and additions to, repair, rehabilitation, or modification of existing facilities, provided the cost of each such project, including collateral equipment, does not exceed $100,000.

(2) Funds appropriated pursuant to subsection (a) (1) and (2) may be used for unforeseen programmatic facility project needs, provided the cost of each such project, including collateral equipment, does not exceed $500,000.

(3) Funds appropriated pursuant to subsection (a)(4) may be used for such work on facilities controlled by the General Services Administration, provided the cost of each such project, including collateral equipment, does not exceed $500,000.

(f) Of the amounts authorized pursuant to subsection (a) (1) through (4), up to $8,000,000 may be made available for the National Space Grant College and Fellowship program established under the National Aeronautics and Space Administration Authorization Act of 1988 (Public Law 100-147).

CONSTRUCTION OF FACILITIES REPROGRAMMING

SEC. 202. Authorization is hereby granted whereby any of the amounts prescribed in section 201(a)(3) (A) through (X)—

(1) may be varied upward 10 percent, in the discretion of the Administrator or the Administrator's designee, or

(2) following a report by the Administrator or the Administrator's designee to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on the circumstances of such, may be varied upward 25 percent to meet unusual cost variations.

Reports.

The total cost of all work authorized under paragraphs (1) and (2) shall not exceed the total of the amounts specified in section 201(a)(3) (A) through (X).

SPECIAL REPROGRAMMING AUTHORITY FOR CONSTRUCTION OF FACILITIES

SEC. 203. Where the Administrator determines that new developments or scientific or engineering changes in the national program of aeronautical and space activities have occurred; and that such changes require the use of additional funds for the purposes of

construction, expansion, or modification of facilities at any location; and that deferral of such action until the enactment of the next authorization Act would be inconsistent with the interest of the Nation in aeronautical and space activities; the Administrator may transfer not to exceed ½ of 1 percent of the funds appropriated pursuant to section 201(a) (1) or (2) to the "Construction of facilities" appropriation for such purposes. The Administrator may also use up to $10,000,000 of the amounts authorized under section 201(a)(3) for such purposes. The funds so made available pursuant to this section may be expended to acquire, construct, convert, rehabilitate, or install permanent or temporary public works, including land acquisition, site preparation, appurtenances, utilities, and equipment.

Reports.

No such funds may be obligated until a period of 30 days has passed after the Administrator or the Administrator's designee has transmitted to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a written report describing the nature of the construction, its cost, and the reasons therefor.

LIMITATIONS ON AUTHORITY

SEC. 204. Notwithstanding any other provision of this Act—

(1) no amount appropriated pursuant to this Act may be used for any program deleted by the Congress from requests as originally made to either the House Committee on Science, Space, and Technology or the Senate Committee on Commerce, Science, and Transportation;

(2) no amount appropriated pursuant to this Act may be used for any program in excess of the amount actually authorized for that particular program by section 201(a) (1), (2), and (4); and

(3) no amount appropriated pursuant to this Act may be used for any program which has not been presented to either such committee,

unless a period of thirty days has passed after the receipt by the Speaker of the House of Representatives and the President of the Senate and each such committee, of notice given by the Administrator or his designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action.

GEOGRAPHICAL DISTRIBUTION OF RESEARCH FUNDS

42 USC 2459 note.

SEC. 205. It is the sense of the Congress that it is in the national interest that consideration be given to the widest geographical distribution of Federal research funds whenever feasible, and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible.

ARREST AUTHORITY

42 USC 2456a.

Regulations.

SEC. 206. Section 304 of the National Aeronautics and Space Act of 1958 is amended by adding at the end the following new subsection:

"(f) Under regulations to be prescribed by the Administrator and approved by the Attorney General of the United States, those employees of the Administration and of its contractors and subcontractors authorized to carry firearms under subsection (e) may arrest without warrant for any offense against the United States

committed in their presence, or for any felony cognizable under the laws of the United States if they have reasonable grounds to believe that the person to be arrested has committed or is committing such felony. Persons granted authority to make arrests by this subsection may exercise that authority only while guarding and protecting property owned or leased by, or under the control of, the United States under the administration and control of the Administration or one of its contractors or subcontractors, at facilities owned by or contracted to the Administration.".

ADVANCED SOLID ROCKET MOTOR AUTHORITY

SEC. 207. If, after evaluation of proposals received in response to the request for proposals for an advanced solid rocket motor required by section 121(b) of the National Aeronautics and Space Administration Authorization Act of 1988 (Public Law 100-147; 101 Stat. 868), the Administrator determines that it is in the best interests of the United States to select a proposal offering a privately financed and non-Government-owned production facility to be constructed on a Government or non-Government site, funds otherwise authorized in section 201(a)(3)(X) of this Act for the construction of a Government-owned production facility on a Government-owned site shall be available, without fiscal year limitation, for that purpose.

STUDIES ON MICROGRAVITY RESEARCH CAPABILITY

SEC. 208. (a) The Administrator shall contract with the National Academy of Sciences to undertake a review of the Nation's microgravity research capability and issue a report addressing— Contracts. Reports.

(1) the scientific and commercial value to the Nation of achieving a man-tended capability through a Commercially Developed Space Facility (CDSF) prior to man-tended operations of the space station;

(2) the technical characteristics of a CDSF that would enable its optimum use;

(3) the anticipated microgravity research and manufacturing requirements of commercial users and the Government;

(4) the extent to which existing and proposed facilities could support these requirements;

(5) the likelihood that a CDSF would become commercially self-sustaining and an estimate of when that could occur;

(6) the state of space automation technology and its relevance to the capabilities required for a CDSF;

(7) how a decision by the Government to lease facilities on a CDSF might affect the viability of other proposed commercial microgravity research facilities; and

(8) the effect a commitment to the CDSF would have on the current space transportation system launch schedule.

(b) The Administrator shall contract with the National Academy of Public Administration to— Contracts.

(1) estimate the developmental, operational, and other costs to the Government associated with a CDSF;

(2) consider the practicability of various financial options by which the Government could participate in a CDSF, including leasing, lease-purchase, and purchase;

(3) consider, as regards the lease option, instead of providing for a flat level of lease obligations, the practicability of reducing

on a yearly basis the level of Government lease operations during the years of operation of a CDSF; and

(4) consider, as regards the lease option, the practicability of making the minimum levels of Government lease obligations in the years of operation of a CDSF contingent on the attachment, by the CDSF operator, of certain minimum levels of irrevocable contract commitments with entities other than the United States Government.

Reports.

(c) Based on the above reports, the Administrator shall provide a report to the House Committee on Science, Space, and Technology and the Senate Committee on Commerce, Science, and Transportation with policy options related to a CDSF and microgravity facilities, to be delivered no later than May 15, 1989.

BUY AMERICAN

Contracts.

SEC. 209. (a) The Administrator shall award to a domestic firm a contract that, under the use of competitive procedures, would be awarded to a foreign firm, if—

(1) the final product of the domestic firm will be completely assembled in the United States;

(2) when completely assembled, not less than 50 percent of the final product of the domestic firm will be domestically produced; and

(3) the difference between the bids submitted by the foreign and domestic firms is not more than 6 percent.

(b) This section shall not apply to the extent to which—

(1) such applicability would not be in the public interest;

(2) compelling national security considerations require otherwise; or

(3) the United States Trade Representative determines that such an award would be in violation of the General Agreement on Tariffs and Trade or an international agreement to which the United States is a party.

(c) For purposes of this section—

(1) the term "domestic firm" means a business entity that is organized under the laws of the United States and that conducts business operations in the United States; and

(2) the term "foreign firm" means a business entity not described in paragraph (1).

(d) This section shall apply only to contracts for which—

(1) amounts are made available pursuant to this Act; and

(2) solicitations for bids are issued after the date of the enactment of this Act.

Science and technology.

Union of Soviet Socialist Republics.

INTERNATIONAL SPACE DOCKING CAPABILITY

SEC. 210. (a) It is the sense of Congress that the Administrator should establish a multilateral working group of representatives from the space agencies of appropriate spacefaring nations, including the Union of Soviet Socialist Republics, and from appropriate international entities, to explore the technological and procedural principles that would be necessary to achieve an international space docking capability, and the establishment of international docking interface standards for addressing requirements for compatible interfaces for docking, communications, and life support systems,

and also space rescue missions which could particularly benefit from the use of such a capability.

(b) Within 6 months after the date of the enactment of this Act, the Administrator shall advise the Congress on the status of establishing an International Space Docking Working Group as recommended in subsection (a).

JOHN C. STENNIS SPACE CENTER

Mississippi.

SEC. 211. The National Space Technology Laboratories of the National Aeronautics and Space Administration located in Bay St. Louis, Mississippi, is named and designated as the "John C. Stennis Space Center". Any reference in a law, map, regulation, document, record, or other paper of the United States to such center shall be held to be a reference to the "John C. Stennis Space Center".

OUTER SOLAR SYSTEM EXPLORATION

SEC. 212. The Administrator, in coordination with the Secretary of Energy, for the purpose of outer solar system exploration, may request and receive such quantities of nuclear fuel as are necessary only for the specific mission, on terms and at costs as may be agreed upon. Nothing in this section authorizes the providing of such nuclear fuel on those terms for any other purpose or its diversion for any other use.

COMMERCIAL SPACE LAUNCH ACT AUTHORIZATION

SEC. 213. Section 24 of the Commercial Space Launch Act (49 App. U.S.C. 2623) is amended by adding at the end thereof the following: "There is authorized to be appropriated to the Secretary to carry out this Act $3,827,000 for fiscal year 1989.".

NATIONAL AERONAUTICS AND SPACE ACT OF 1958 AMENDMENT

SEC. 214. Section 102(c) of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2451(c)) is amended—

(1) by striking "and" at the end of paragraph (7);

(2) by striking the period at the end of paragraph (8) and inserting in lieu thereof "; and"; and

(3) by adding at the end the following new paragraph:

"(9) The preservation of the United States preeminent position in aeronautics and space through research and technology development related to associated manufacturing processes.".

Science and technology.

DRUG-FREE WORKPLACE

42 USC 2459 note.

SEC. 215. (a) No funds authorized to be appropriated under this Act, or under any other Act authorizing appropriations for fiscal year 1989 through 1993 for the Administration, shall be obligated or expended unless the Administration has in place, and will continue to administer in good faith, a written policy designed to ensure that all of its workplaces are free from the illegal use, possession, or distribution of controlled substances (as defined in the Controlled Substances Act) by the officers and employees of the Administration.

(b) No funds authorized to be appropriated to the Administration for fiscal years 1989 through 1993 shall be available for payment in connection with any grant, contract, or other agreement, unless the

recipient of such grant, contractor, or party to such agreement, as the case may be, has in place and will continue to administer in good faith a written policy, adopted by the board of directors or other government authority of such recipient, contractor, or party, satisfactory to the Administrator of the Administration, designed to ensure that all of the workplaces of such recipient, contractor, or party are free from the illegal use, possession, or distribution of controlled substances (as defined in the Controlled Substances Act) by the officers and employees of such recipient, contractor, or party.

(c) The provisions of this section, and the provisions of the Steel and Aluminum Energy Conservation and Technology Competitiveness Act of 1988, the National Institute of Standards and Technology Authorization Act for Fiscal Year 1989, the National Science Foundation Authorization Act for Fiscal Years 1989 and 1990, and the National Nutrition Monitoring and Related Research Act of 1988, relating to a drug-free workplace, shall not be effective until January 16, 1989.

OHIO CENTER FOR AEROSPACE

SEC. 216. (a) The Administrator may, without regard to section 321 of the Act of June 30, 1932 (40 U.S.C. 303b), and on such terms as the Administrator may deem to be appropriate, lease, for a term not to exceed 99 years, real property located at the Lewis Research Center in Cuyahoga County, to the State of Ohio, or a subdivision or agent thereof, or to a corporation or foundation organized exclusively for educational or scientific purposes which is exempt from taxation under section 501(c)(3) of the Internal Revenue Code of 1986 (26 U.S.C. 501(c)(3)), or to any other not-for-profit entity, for the purpose of the construction and operation thereon of an Institute whose purpose is the conduct of aeronautical and space research, the education and training of aeronautical and space engineers, and the transfer of aeronautical and space technology between the United States public and private sectors. This lease shall be renewable for additional periods in the discretion of the Administrator.

(b) Subject to the availability of appropriations therefor, the Administrator may enter into agreements, on such terms as the Administrator may deem to be appropriate, with the State of Ohio, or a subdivision or agent therefor, or with a corporation or foundation organized exclusively for educational or scientific purposes which is exempt from taxation under section 501(c)(3) of the Internal Revenue Code of 1986 (26 U.S.C. 501(c)(3)), or to any other not-for-profit entity, pursuant to which the Administration may provide administrative, maintenance, instructional, and other appropriate support, with or without reimbursement, to an Institute whose purpose is the conduct of aeronautical and space research, the education and training of aeronautical and space engineers, and the transfer of aeronautical and space technology between the United States public and private sectors.

(c) The Administrator may redelegate the authority conferred in subsections (a) and (b), to such subordinate officers and employees as the Administrator may designate.

SPACE SETTLEMENTS

42 USC 2451 note.

SEC. 217. (a) The Congress declares that the extension of human life beyond Earth's atmosphere, leading ultimately to the establishment of space settlements, will fulfill the purposes of advancing

science, exploration, and development and will enhance the general welfare.

(b) In pursuit of the establishment of an International Space Year in 1992 pursuant to Public Law 99-170, the United States shall exercise leadership and mobilize the international community in furtherance of increasing mankind's knowledge and exploration of the solar system.

(c) Once every 2 years after the date of the enactment of this Act, the National Aeronautics and Space Administration shall submit a report to the President and to the Congress which— Reports.

(1) provides a review of all activities undertaken under this section including an analysis of the focused research and development activities on the Space Station, Moon, and other outposts that are necessary to accomplish a manned mission to Mars;

(2) analyzes ways in which current science and technology can be applied in the establishment of space settlements;

(3) identifies scientific and technological capacity for establishing space settlements, including a description of what steps must be taken to develop such capacity;

(4) examines alternative space settlement locations and architectures;

(5) examines the status of technologies necessary for extraterrestrial resource development and use and energy production;

(6) reviews the ways in which the existence of space settlements would enhance science, exploration, and development;

(7) reviews mechanisms and institutional options which could foster a broad-based plan for international cooperation in establishing space settlements;

(8) analyzes the economics of financing space settlements, especially with respect to private sector and international participation;

(9) discusses sociological factors involved in space settlement such as psychology, political science, and legal issues; and

(10) addresses such other topics as the National Aeronautics and Space Administration considers appropriate.

PEACEFUL USE OF SPACE STATION

SEC. 218. No civil space station authorized under section 201(a)(1)(A) of this Act may be used to carry or place in orbit any nuclear weapon or any other weapon of mass destruction, to install any such weapon on any celestial body, or to station any such weapon in space in any other manner. This civil space station may be used only for peaceful purposes.

COMMERCIAL SPACE PROGRAMS

SEC. 219. Section 201 of the National Institute of Standards and Technology Authorization Act for Fiscal Year 1989 is amended by adding at the end the following new subsection: 15 USC 3704 note.

"(f) COMMERCIAL SPACE PROGRAMS.—Nothing in this section authorizes the Department to establish an Office of Commercial Space Programs or to place such an office into the Technology Administration without prior authorization of the Congress.".

Science and technology. 42 USC 2451 note.

TITLE III—TEN YEAR STRATEGIC PLAN

AERONAUTICS AND SPACE STRATEGIC PLAN

SEC. 301. The Administrator should develop an aggressive and balanced plan of science and applications including but not limited to—

(1) the robotic exploration of other solar system bodies;

(2) the study and observation of other celestial bodies and phenomena at spectral wave lengths and resolutions that will enhance our understanding of the universe;

(3) the enhanced study and monitoring of Earth as an interacting system;

(4) the development of a full understanding of the behavior of biological systems in the space environment; and

(5) the development of a full understanding of physics and chemistry of the macroscopic behavior of materials in the microgravity environment.

SPACE RESEARCH AND TECHNOLOGY STRATEGIC PLAN

SEC. 302. The Administrator should develop an aggressive and balanced plan of space research and technology including but not limited to—

(1) fundamental and innovative research as the seedbed for enabling technologies for future civil space missions;

(2) focused technology programs keyed to long range, high priority civil space missions;

(3) technology research and demonstrations, extending laboratory activities from Earth to space-based facilities such as the Space Shuttle, Space Station, orbital platforms, and eventually the Moon and other planetary bodies; and

(4) cooperation with, and service to, other space program sectors with advanced technology and use of ground and space-based facilities.

SPACE EXPLORATION STRATEGIC PLAN

SEC. 303. The Administrator should develop a plan in pursuit of the continued manned exploration of the solar system and low-Earth orbit, including but not limited to—

(1) the establishment of an operational United States International Space Station that shall be permanently manned; and

(2) the development of those technologies and systems required for manned exploration of space beyond earth orbit.

SPACE TRANSPORTATION STRATEGIC PLAN

SEC. 304. The Administrator should develop a plan to improve the manned and unmanned space transportation system including—

(1) the continued enhancement of the space shuttle and its ground system in order to increase safety and efficiency and reduce costs;

(2) the completion of the development of a heavy-lift expendable launch vehicle if consistent with mission requirements of the Administration, the Department of Defense, and other Federal agencies; and

(3) the initiation of preliminary design activities for the next generation of a manned space launch system beyond the space shuttle.

AERONAUTICAL RESEARCH AND TECHNOLOGY DEVELOPMENT AND VALIDATION LONG-RANGE PLAN

SEC. 305. The Administrator should develop a plan in pursuit of—

(1) a vigorous program in aeronautics research and technology development and validation, emphasizing emerging technologies with the potential for breakthrough advances to enhance United States preeminence in civil and military aviation; and

(2) in cooperation with the Department of Defense, a technology development program (with an option for a flight demonstration in 1995) to prove the feasibility of an air-breathing hypersonic aerospaceplane capable of single-stage-to-orbit operation and hypersonic cruise in the atmosphere.

TITLE IV—AUTHORIZATION OF APPROPRIATIONS FOR THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

SEC. 401. There are authorized to be appropriated to the Department of Commerce to enable the National Oceanic and Atmospheric Administration to carry out the operations and research duties of the National Weather Service under law, $279,000,000 for fiscal year 1989. Moneys appropriated pursuant to this authorization shall be used to fund those duties relating to National Weather Service operations and research specified by the Act of 1890, the Act of 1974, and any other law involving such duties. Such duties include meteorological, hydrological, and oceanographic public warnings and forecasts, as well as applied research in support of such warnings and forecasts.

SEC. 402. (a) There are authorized to be appropriated to the Department of Commerce to enable the National Oceanic and Atmospheric Administration to carry out its public warning and forecast systems duties under law, $98,500,000 for fiscal year 1989. Moneys appropriated pursuant to this authorization shall be used to fund those duties relating to public warning and forecast systems specified by the Act of 1890, the Act of 1947, and any other law involving such duties. Such duties include the development, acquisition, and implementation of major public warning and forecast systems.

Contracts.

(b) In procuring information processing and telecommunications services of the National Oceanic and Atmospheric Administration for the Advanced Weather Interactive Processing System, the Secretary of Commerce (hereafter in this title referred to as the "Secretary") may provide, in the contract or contracts for such services, for the payment for contingent liability of the Federal Government which may accrue in the event that the Government decides to terminate the contract before the expiration of the multiyear contract period. Such contract or contracts for such services shall limit the payments which the Federal Government is allowed to make under such contract or contracts to amounts provided in advance in appropriation Acts.

SEC. 403. (a) There are authorized to be appropriated to the Department of Commerce to enable the National Oceanic and At-

mospheric Administration to carry out its climate and air quality research duties under law, $51,000,000 for fiscal year 1989. Moneys appropriated pursuant to this authorization shall be used to fund those duties relating to climate and air quality research specified by the Act of 1890, the Act of 1947, and any other law involving such duties. Such duties include the interannual and seasonal climate research long-term climate and air quality research, and the National Climate Progam.

(b) Of the sums authorized under subsection (a) of this section $3,238,000 for fiscal year 1989 are authorized to be appropriated for the activities under the National Climate Program Act (15 U.S.C. 2901 et seq.).

(c) Of the sums authorized under subsection (a) of this section, $12,000,000 for fiscal year 1989 are authorized to be appropriated to establish a program for the purposes of studying climate and global change. Such program shall augment and integrate existing programs of the National Oceanic and Atmospheric Administration and shall include global observations, monitoring, and data and information management relating to the study of changes in the Earth's climatic system, fundamental research on critical oceanic and atmosphere processes, and climate prediction and diagnostics.

SEC. 404. There are authorized to be appropriated to the Department of Commerce to enable the National Oceanic and Atmospheric Administration to carry out its atmospheric research duties under law, $44,000,000 for fiscal year 1989. Moneys appropriated pursuant to this authorization shall be used to fund those duties relating to atmospheric research specified by the Act of 1890 and by any other law involving such duties. Such duties include research for developing improved production capabilities for atmospheric processes, as well as solar-terrestrial services and research.

SEC. 405. (a) There are authorized to be appropriated to the Department of Commerce to enable the National Oceanic and Atmospheric Administration to carry out its satellite observing systems duties under law, $383,000,000 for fiscal year 1989. Moneys appropriated pursuant to this authorization shall be used to fund those duties relating to data and information services specified by the Act of 1890 and by any other law involving such duties. Such duties include spacecraft procurement, launch, and associated ground station system changes involving polar orbiting and geostationary environmental satellites and land remote-sensing satellites, as well as the operation of such satellites.

(b) The authorization provided for under subsection (a) of this section shall be in addition to moneys authorized under the Land Remote-Sensing Commercialization Act of 1984 (15 U.S.C. 4201 et seq.) for the purpose of carrying out such duties relating to satellite observing systems.

SEC. 406. There are authorized to be appropriated to the Department of Commerce to enable the National Oceanic and Atmospheric Administration to carry out its data and information services duties under law, $25,000,000 for fiscal year 1989. Moneys appropriated pursuant to this authorization shall be used to fund those duties relating to data and information services specified by the Act of 1890 and by any other law involving such duties. Such duties include climate data services, ocean data services, geophysical data services, and environmental assessment and information services.

15 USC 313 note.

SEC. 407. (a) The Secretary shall prepare and submit to the Congress, not later than 90 days after the date of enactment of this

Act, a 10-year strategic plan for the comprehensive modernization of the National Weather Service. The strategic plan shall set forth basic service improvement objectives of the modernization as well as the critical new technological components and the associated operational changes necessary to fulfill the objectives of weather and flood warning service improvements.

(b) The Secretary shall prepare and submit to the Congress, by the beginning of the fiscal year immediately following the fiscal year in which the strategic plan required by subsection (a) of this section is submitted, a National Implementation Plan for modernization of the National Weather Service. The National Implementation Plan shall set forth the schedules for necessary actions to accomplish the objectives described in the strategic plan, and the National Implementation Plan shall include—

(1) detailed requirements for new technologies, facilities, staffing levels, and funding, for each of the two fiscal years immediately following the fiscal year in which such National Implementation Plan is submitted, in accordance with the overall schedule for modernization;

(2) special measures to test, evaluate, and demonstrate key elements of the Modernized National Weather Service operations prior to national implementation, including a multistation operational demonstration which tests the performance of all components of the modernization in an integrated manner for a sustained period; and

(3) detailed plans and funding for meteorological research to be accomplished under this title to assure that new techniques in forecasting will be developed to utilize the new technologies being implemented in the modernization.

(c) The Secretary shall submit a revised National Implementation Plan to the Congress at the beginning of each successive fiscal year after the fiscal year in which the initial National Implementation Plan is submitted.

(d) In reviewing and revising the National Implementation Plan, the Secretary shall consult, as appropriate, with other Federal and public agencies responsible for providing or utilizing weather services.

SEC. 408. (a) The Secretary shall not close, consolidate, automate, or relocate any Weather Service Office or Weather Service Forecast Office pursuant to the implementation of the strategic plan required by section 407, except in accordance with this section. 15 USC 313 note.

(b) The Secretary may not close, consolidate, automate, or relocate any such office unless the Secretary has certified to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives that such action will not result in any degradation of weather services provided to the affected area. Such certification shall include—

(1) a detailed comparison of the services provided to the affected area and the services to be provided after such action;

(2) any recent or expected modernization of National Weather Service operations which will enhance services in the affected area; and

(3) evidence, based upon operational demonstration of modernized National Weather Service operations, which supports the conclusion that no degradation in services will result from such action.

15 USC 1534.

SEC. 409. (a) Except as otherwise provided in this section, the Secretary is authorized to assess fees, based on fair market value, for access to environmental data archived by the National Environmental Satellite, Data, and Information Service of the National Oceanic and Atmospheric Administration.

State and local governments.
Schools and colleges.

(b)(1) The Secretary shall provide data described in subsection (a) to Federal, State, and local government agencies, to universities, and to other nonprofit institutions at the cost of reproduction and transmission, if such data is to be used for research and not for commercial purposes.

International organizations.

(2) The Secretary shall waive the assessment of fees under subsection (a) as necessary to continue to provide data to foreign governments and international organizations on a data exchange basis or as otherwise provided by international agreement.

Federal Register, publication.

(c) The initial schedule of any fees assessed under this section, and any subsequent amendment to such schedule, shall be published by the Secretary in the Federal Register at least 30 days before such fees will take effect. The initial schedule shall remain in effect without amendment for the three-year period beginning on the date that fees under the schedule take effect.

(d) Any assessment of fees under this section shall meet the following requirements:

(1) No fees shall be assessed under this section until after September 30, 1989

(2) With respect to the first one-year period during which the initial fee schedule is in effect, fees shall be assessed at no more than one-third of the fair market value specified in subsection (a).

(3) With respect to the second one-year period during which the initial fee schedule is in effect, fees shall be assessed at not more than two-thirds of such fair market value.

(4) With respect to the third one-year period during which the initial fee schedule is in effect, and with respect to any period thereafter, fees shall be assessed at no more than the full amount of such fair market value.

(e) Fees collected under this section shall be available to the National Environmental Satellite, Data, and Information Service for expenses incurred in the operation of its data archive centers.

Reports.

(f) The Secretary shall, not later than 90 days after the date of enactment of this Act, submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a report which sets forth—

(1) any plan of the Secretary for assessing fees under this section, including the methodology and bases by which the amount of such fees shall be determined, and the estimated revenues therefrom; and

(2) any plan of the Secretary for using revenues generated from such fees, as well as other resources, to improve the capability of the National Environmental Satellite, Data, and Information Service to collect, manage, process, archive, and disseminate the increasing amounts of data generated from satellites, radars, and other technologies.

(g) The authority of the Secretary to assess fees under this section shall be in addition to, and shall not be construed to limit, the authority under any other law to assess fees relating to the environ-

mental data activities of the National Oceanic and Atmospheric Administration.

Pollution. 42 USC 7454 note.

SEC. 410. The Secretary, in consultation with the Secretary of State, the Administrator of the National Aeronautics and Space Administration, and appropriate non-Federal organizations, shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a plan to construct and operate a worldwide system of ground-based remote sensors to monitor the stratospheric levels of chemicals which can affect the level of ozone in the stratosphere and to use these results to improve our understanding of the possible changes in stratospheric ozone that are the consequence of human activities. The plan shall include time lines for construction and operation of the system, a description of the roles of the National Oceanic and Atmospheric Administration and the National Aeronautics and Space Administration, non-Federal organizations, other nations, and international organizations in constructing and operating the system, and estimates of the costs to construct and operate the system. The plan shall be submitted not later than July 1, 1989.

SEC. 411. It is the sense of the Congress that the global change program represents a significant opportunity for international cooperation and that it is in the best interest of the United States to maintain a separate civilian polar meteorological satellite program to facilitate data sharing with foreign participants in the global change program.

Missouri.

SEC. 412. None of the funds authorized under this title shall be used to move from Kansas City, Missouri, the National Weather Service Training Center currently located at Kansas City, nor to close such Center, nor to contract out any function or activity performed by Federal employees as of the date of enactment of this Act.

SEC. 413. For the purposes of this title, the term—

(1) "Act of 1890" means the Act entitled "An Act to increase the efficiency and reduce the expenses of the Signal Corps of the Army, and to transfer the Weather Bureau to the Department of Agriculture", approved October 1, 1890 (26 Stat. 653); and

(2) "Act of 1947" means the Act entitled "An Act to define the functions and duties of the Coast and Geodetic Survey, and for other purposes", approved August 6, 1947 (33 U.S.C. 883a et seq.).

Environmental protection. 42 USC 8906.

SEC. 414. (a)(1) The National Weather Service of the National Oceanic and Atmospheric Administration shall maintain an updated data base describing the acid content in precipitation in the United States, using information from Federal acid precipitation monitoring sites.

(2) Such data shall be available to interested parties by Weather Service Forecast Offices in the National Weather Service, or through such other facilities or means as the Assistant Administrator for Weather Services, National Oceanic and Atmospheric Administration, shall direct, for those areas of the United States where and at such time as such information is presently available, within 120 days after the date of the enactment of this Act.

(3) Where other Federal agencies collect such data in the course of carrying out their statutory missions, the heads of those agencies and the Administrator of the National Oceanic and Atmospheric

Administration shall arrange for the transfer of such data to the National Weather Service.

(b) Nothing in this section shall be construed to require any Federal agency to establish any new acid precipitation monitoring site.

TITLE V—NATIONAL SPACE COUNCIL

NATIONAL SPACE COUNCIL

Establishment. 42 USC 2471.

SEC. 501. (a) Effective February 1, 1989, there is established in the Executive Office of the President the National Space Council, which shall be chaired by the Vice President.

President of U.S. Reports.

(b) By March 1, 1989, the President shall submit to the Congress a report that outlines the composition and functions of the National Space Council.

President of U.S.

(c) The Council may employ a staff of not more than seven persons, which is to be headed by a civilian executive secretary, who shall be appointed by the President.

49 USC app. 1353 note.

TITLE VI—AIR TRAFFIC CONTROLLER PERFORMANCE RESEARCH

SEC. 601. FINDINGS.—The Congress finds as follows:

(1) Research is needed to establish a more scientific approach for—

(A) identifying future staffing requirements for the air traffic control system; and

(B) developing tools needed for meeting those requirements.

(2) The Federal Aviation Administration and the National Aeronautics and Space Administration each have unique expertise and facilities for conducting research into the man-machine interface problems associated with a highly automated air traffic control system.

SEC. 602. STUDY ON INCREASED AUTOMATION.—

(1) IN GENERAL.—In order to develop the tools necessary for establishing appropriate selection criteria and training methodologies for the next generation of air traffic controllers, the Administrator of the Federal Aviation Administration shall conduct research to study the effect of automation on the performance of the next generation of air traffic controllers and the air traffic control system.

(2) CONTENT.—Research conducted under paragraph (1) shall include investigation of the following:

(A) Methods for improving and accelerating future air traffic controller training through the application of advanced training techniques, including use of simulation technology.

(B) The role of future automation in the air traffic control system and its physical and psychological effects on air traffic controllers.

(C) The attributes and aptitudes needed to function well in a highly automated air traffic control system, and development of appropriate testing methods for identifying indivduals possessing those attributes and aptitudes.

(D) Innovative methods for training potential air traffic controllers to enhance the benefits of automation and maximize the effectiveness of the air traffic control system.

(E) New technologies and procedures for exploiting automated communication systems, including Mode S Transponders, to improve information transfers between air traffic controllers and aircraft pilots.

(3) REPORT.—Not later than 6 months after the date of the enactment of this Act, the Administrator of the Federal Aviation Administration shall report to the Congress the Administrator's plans for conducting research under this section.

SEC. 603. AGREEMENT WITH ADMINISTRATOR OF NASA.—

(1) IN GENERAL.—The Administrator of the Federal Aviation Administration may enter into an agreement with the Administrator of the National Aeronautics and Space Administration for use of their unique human factor facilities and expertise in conducting research activities to study the human factor aspects of the highly automated environment for the next generation of air traffic controllers.

(2) CONTENT.—Research under this section shall include investigation of the following:

(A) Human perceptual capabilities and the effect of computer-aided decision making on the workload and performance of air traffic controllers.

(B) Information management techniques for advanced air traffic control display systems.

(C) Air traffic controller workload and performance measures, including development of predictive models.

SEC. 604. AUTHORIZATION OF APPROPRIATIONS.—For conducting research under this title there are authorized to be appropriated, from amounts in the Airport and Airway Trust Fund which are available for research and development, such sums as may be necessary.

Approved November 17, 1988.

LEGISLATIVE HISTORY—S. 2209 (H.R. 4561):

HOUSE REPORTS: No. 100-650 accompanying H.R. 4561 (Comm. on Science, Space, and Technology).

SENATE REPORTS: No. 100-429 (Comm. on Commerce, Science, and Transportation).

CONGRESSIONAL RECORD, Vol. 134 (1988):

June 2, H.R. 4561 considered and passed House.
Aug. 9, S. 2209 considered and passed Senate.
Oct. 19, considered and passed House, amended.
Oct. 21, Senate concurred in House amendment.

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