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1ST SESSION

H. R. 2200

IN THE SENATE OF THE UNITED STATES

AUGUST 2 (legislative day, JUNE 30), 1993

Received; read twice and referred to the Committee on Commerce, Science,
and Transportation

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, research and program management, and Inspector General, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “National Aeronautics
5 and Space Administration Authorization Act, Fiscal Years
6 1994 and 1995”.

1 **SEC. 2. FINDINGS.**

2 The Congress finds and declares that—

3 (1) the civil space program has the potential to
4 contribute to the advancement of technologies criti-
5 cal to the competitiveness and productivity of United
6 States industry;

7 (2) the core mission of the National Aero-
8 nautics and Space Administration is, and depends
9 upon, the extension of human presence beyond Plan-
10 et Earth, specifically by the construction and oper-
11 ation of the International Space Station Freedom in
12 the near term, and by the acquisition and develop-
13 ment of knowledge necessary for expanding human
14 presence beyond low Earth orbit to other celestial
15 bodies over the middle and long term;

16 (3) the Administrator should explore ways of
17 encouraging voluntary retirements by National Aero-
18 nautics and Space Administration personnel in order
19 to facilitate any restructuring associated with the re-
20 design of the space station;

21 (4) the reduction in international tensions and
22 the end of the Cold War provide an opportunity for
23 the National Aeronautics and Space Administration
24 to achieve a closer coordination with defense-related
25 agencies and, consistent with the National Aero-
26 nautics and Space Act of 1958, to reduce overlap

1 and duplication among Federal space programs and
2 to take greater advantage of other Federal space ca-
3 pabilities;

4 (5) the National Aeronautics and Space Admin-
5 istration should play an active role in preserving a
6 robust space industrial base and should seek to
7 strengthen incentives for industry to conduct re-
8 search and development for both Federal mission
9 needs and the diversification of space-related appli-
10 cations;

11 (6) in the conduct of its space activities, the
12 United States should employ the existing space as-
13 sets and capabilities of the former Soviet Union on
14 a selective basis when unique programmatic benefits
15 are offered, and should encourage a collaboration be-
16 tween United States industry and the privatizing
17 space organizations of the former Soviet Union in
18 developing future space capabilities;

19 (7) in the conduct of space missions, the United
20 States should give preference to integrating the
21 broad range of “off-the-shelf” existing space assets
22 and capabilities available from commercial sources;
23 and

24 (8) consistent with paragraphs (1) through (6),
25 because the aluminum lithium external tank replaces

1 the lift capability enhancement of the Advanced
2 Solid Rocket Motor, and because of severe budgetary
3 constraints and the need to reduce the Federal defi-
4 cit, the cancellation of the Advanced Solid Rocket
5 Motor program is necessary, and such cancellation
6 will result in a reduction of expenditures by the Na-
7 tional Aeronautics and Space Administration over 5
8 years of \$750,000,000, which is equal to 50 percent
9 of the project cost of such program over the 5-year
10 period following the date of enactment of this Act.

11 **TITLE I—AUTHORIZATION OF**
12 **APPROPRIATIONS**

13 **Subtitle A—Authorizations**

14 **SEC. 100. TOTAL AUTHORIZATION.**

15 Notwithstanding any other provision of this subtitle,
16 the total amount authorized to be appropriated under sec-
17 tions 101(b), 102, 103, 104, and 105 for fiscal year 1994
18 shall not exceed \$12,889,000,000. Each amount stated in
19 such sections shall be reduced proportionately as necessary
20 to meet the requirement of this section.

21 **SEC. 101. RESEARCH AND DEVELOPMENT.**

22 (a) SPACE STATION FREEDOM.—

23 (1) AUTHORIZATION.—There are authorized to
24 be appropriated to the National Aeronautics and
25 Space Administration for “Research and Develop-

1 ment'' for the Space Station Freedom,
2 \$1,900,000,000 for fiscal year 1994,
3 \$1,900,000,000 for fiscal year 1995,
4 \$1,900,000,000 for fiscal year 1996,
5 \$1,900,000,000 for fiscal year 1997,
6 \$1,900,000,000 for fiscal year 1998,
7 \$1,900,000,000 for fiscal year 1999, and
8 \$1,300,000,000 for fiscal year 2000.

9 (2) SCOPE OF PROGRAM.—The Space Station
10 Freedom shall be designed to provide the capability
11 for productive scientific and engineering research in
12 low Earth orbit, shall be capable of incorporating
13 advanced technologies over the operational life of the
14 Space Station for the purposes of increasing the pro-
15 ductivity of research and reducing the costs of oper-
16 ation, shall include a habitation module as part of
17 its permanently manned configuration, and shall be
18 developed in accordance with the international agree-
19 ments in place as of the date of enactment of this
20 Act.

21 (3) ADDITIONAL FOREIGN PARTICIPATION.—
22 The Space Station Freedom program shall, where
23 feasible, employ the existing space assets and capa-
24 bilities of the former Soviet Union on a selective
25 basis when such use will reduce the cost of develop-

1 ing and operating the Space Station Freedom to the
2 United States and its international partners. Any
3 proposed use of such assets and capabilities shall be
4 in accordance with the international agreements in
5 place as of the date of enactment of this Act.

6 (4) PROGRAM MANAGEMENT OFFICE.—The Na-
7 tional Aeronautics and Space Administration shall
8 maintain a strong, independent Space Station Pro-
9 gram Management Office with financial control of
10 the program budget at least through the date of the
11 First Element Launch, unless the Administrator of
12 the National Aeronautics and Space Administration
13 (in this Act referred to as the “Administrator”) cer-
14 tifies to the Congress that an alternative manage-
15 ment approach will save money, will not result in in-
16 creased annual funding requirements or schedule
17 delays, and will minimize job loss. Any such certifi-
18 cation shall include a plan for the proposed transi-
19 tion which—

20 (A) details the number and types of jobs
21 that will be lost;

22 (B) provides for maximum retention in the
23 program of employees with technical expertise;

24 (C) if such retention is not possible, pro-
25 vides retraining for other comparable employ-

1 ment with the National Aeronautics and Space
2 Administration; and

3 (D) minimizes disruption in the lives of
4 employees who lose their jobs, are required to
5 move to a new location, or are otherwise af-
6 fected by the transition.

7 (b) OTHER RESEARCH AND DEVELOPMENT.—There
8 are authorized to be appropriated to the National Aero-
9 nautics and Space Administration for “Research and De-
10 velopment” for—

11 (1) Technology Investment Program, estab-
12 lished under title II of this Act, \$22,000,000 for fis-
13 cal year 1994, and \$40,000,000 for fiscal year 1995,
14 none of which shall be available for administrative
15 expenses of the National Aeronautics and Space Ad-
16 ministration, except that no funds appropriated pur-
17 suant to this Act may be obligated for the establish-
18 ment of any Technology Research Institutes unless
19 otherwise specifically provided for by law;

20 (2) Space Transportation Capability Develop-
21 ment, \$751,600,000 for fiscal year 1994, and
22 \$819,300,000 for fiscal year 1995, of which
23 \$21,000,000 for fiscal year 1994 and \$40,000,000
24 for fiscal year 1995 are authorized to develop im-
25 provements in existing expendable launch vehicles

1 (including the development of a single-engine version
2 of the Centaur upper stage rocket), and of which
3 \$21,400,000 for fiscal year 1994 and \$46,000,000
4 for fiscal year 1995 are authorized to support the
5 development of advanced launch technologies, includ-
6 ing single-stage-to-orbit technologies, and compo-
7 nents;

8 (3) Physics and Astronomy, \$1,094,700,000 for
9 fiscal year 1994, and \$1,162,300,000 for fiscal year
10 1995, of which \$20,000,000 for fiscal year 1994 and
11 \$15,000,000 for fiscal year 1995 are for augmenting
12 the funding for Mission Operations and Data Analy-
13 sis activities by that amount;

14 (4) Planetary Exploration, \$622,200,000 for
15 fiscal year 1994, and \$646,800,000 for fiscal year
16 1995, of which \$65,000,000 for fiscal year 1994 and
17 \$85,000,000 for fiscal year 1995 are for augmenting
18 funding for Mission Operations and Data Analysis
19 activities and to initiate development of a Mars En-
20 vironmental Survey mission;

21 (5) Life and Microgravity Sciences and Applica-
22 tions, \$426,000,000 for fiscal year 1994, and
23 \$485,700,000 for fiscal year 1995, of which at least
24 \$2,000,000 for each such fiscal year is reserved for

1 research on the causes of breast and ovarian cancers
2 and other women's health issues;

3 (6) Mission to Planet Earth—

4 (A) \$1,109,900,000 for fiscal year 1994, of
5 which \$5,000,000 are authorized for the devel-
6 opment of instrumentation for and flight of re-
7 motely piloted aircraft, \$25,000,000 are author-
8 ized for the High Resolution Multispectral
9 Stereo Imager for Landsat 7, if the Adminis-
10 trator determines and reports to Congress in
11 writing that equivalent data will not be made
12 available by private remote-sensing space sys-
13 tems at the time Landsat 7 will be launched, or
14 for the purchase of equivalent data to be pro-
15 vided in the future by private remote-sensing
16 space systems, and of which \$18,000,000 may
17 be provided for the Consortium for Inter-
18 national Earth Science Information Network,
19 except that no funds may be obligated for the
20 Consortium for International Earth Science In-
21 formation Network in excess of \$18,000,000 in
22 fiscal year 1994 unless an equal amount of
23 matching funding is provided from non-Federal
24 sources; and

25 (B) \$1,448,100,000 for fiscal year 1995;

1 (7) Space Research and Technology,
2 \$298,200,000 for fiscal year 1994, and
3 \$333,100,000 for fiscal year 1995;

4 (8) Commercial Programs, \$172,000,000 for
5 fiscal year 1994, and \$141,400,000 for fiscal year
6 1995;

7 (9) Aeronautics Research and Technology Pro-
8 grams—

9 (A) for Research Operations Support,
10 \$143,500,000 for fiscal year 1994, and
11 \$148,300,000 for fiscal year 1995;

12 (B) for Research and Technology Base ac-
13 tivities, \$448,300,000 for fiscal year 1994, and
14 \$433,900,000 for fiscal year 1995;

15 (C) for High-Speed Research,
16 \$187,200,000 for fiscal year 1994, and
17 \$236,300,000 for fiscal year 1995;

18 (D) for Advanced Subsonic Technology,
19 \$101,300,000 for fiscal year 1994, and
20 \$128,500,000 for fiscal year 1995, of which
21 \$5,000,000 for fiscal year 1994 and
22 \$13,000,000 for fiscal year 1995 shall be for
23 Short-Haul Aircraft, \$30,200,000 for fiscal
24 year 1994 and \$30,500,000 for fiscal year 1995
25 shall be for Noise Reduction, and \$11,500,000

1 for fiscal year 1994 and \$12,000,000 for fiscal
2 year 1995 shall be for Technology Integration
3 for Reducing Environmental Pollution;

4 (E) for Other Systems Technology Pro-
5 grams, \$140,400,000 for fiscal year 1994, and
6 \$168,000,000 for fiscal year 1995; and

7 (F) for the National Aero-Space Plane
8 Program, \$80,000,000 for fiscal year 1994, and
9 \$80,000,000 for fiscal year 1995;

10 (10) Safety, Reliability, and Quality Assurance,
11 \$35,300,000 for fiscal year 1994, and \$38,500,000
12 for fiscal year 1995;

13 (11) Academic Programs, \$74,500,000 for fis-
14 cal year 1994, and \$81,500,000 for fiscal year 1995;
15 and

16 (12) Tracking and Data Advanced Systems,
17 \$24,600,000 for fiscal year 1994, and \$25,100,000
18 for fiscal year 1995.

19 The Administrator shall make available for the National
20 Aero-Space Plane the full amounts authorized under para-
21 graph (9)(F) from the amounts made available pursuant
22 to paragraph (9) for each fiscal year.

1 **SEC. 102. SPACE FLIGHT, CONTROL, AND DATA COMMU-**
2 **NICATIONS.**

3 There are authorized to be appropriated to the Na-
4 tional Aeronautics and Space Administration for “Space
5 Flight, Control, and Data Communications” for—

6 (1) Space Shuttle Production and Operational
7 Capability, \$1,069,200,000 for fiscal year 1994 and
8 \$978,500,000 for fiscal year 1995, of which no
9 funds are authorized for the continuation of the Ad-
10 vanced Solid Rocket Motor program, and of which
11 \$150,000,000 for fiscal year 1994 are authorized to
12 cover the cost of terminating the Advanced Solid
13 Rocket Motor program;

14 (2) Space Shuttle Operations, \$3,006,500,000
15 for fiscal year 1994, and \$2,810,400,000 for fiscal
16 year 1995;

17 (3) Space and Ground Networks, Communica-
18 tions, and Data Systems, \$795,500,000 for fiscal
19 year 1994, and \$964,600,000 for fiscal year 1995,
20 including procurement of Tracking and Data Relay
21 Satellites on a fixed-price basis using functional per-
22 formance specifications, and, to the extent prac-
23 ticable, seeking to incorporate potential improve-
24 ments to such Satellites that result in cost savings
25 or a greater probability of returning data; and

1 (4) Launch Services, \$300,300,000 for fiscal
2 year 1994, and \$313,700,000 for fiscal year 1995.
3 None of the funds appropriated pursuant to this section
4 shall be used to launch the Advanced X-ray Astrophysics
5 Facility on the Space Shuttle. No Federal funds may be
6 obligated for the continuation of the Advanced Solid Rock-
7 et Motor program, except as necessary to terminate such
8 program. By fiscal year 2003, the combined annual cost
9 for the production and operation of the Space Shuttle pro-
10 gram and the Space Station Freedom program shall not
11 exceed, after adjustments for inflation, \$4,325,000,000 in
12 fiscal year 1992 dollars.

13 **SEC. 103. CONSTRUCTION OF FACILITIES.**

14 (a) FISCAL YEAR 1994.—There are authorized to be
15 appropriated to the National Aeronautics and Space Ad-
16 ministration for fiscal year 1994 for “Construction of Fa-
17 cilities”, including land acquisition, for—

18 (1) Construction of Space Station Freedom Fa-
19 cilities, \$25,000,000;

20 (2) Replacement of Mission Control Center Air
21 Handlers, Johnson Space Center, \$8,000,000;

22 (3) Replacement of Thermal Vacuum Helium
23 Refrigeration System, Johnson Space Center,
24 \$7,400,000;

1 (4) Rehabilitation of Electrical Distribution
2 System, Project Management Building, Johnson
3 Space Center, \$2,200,000;

4 (5) Modification of Launch Complex 39 Exte-
5 rior Utility Piping, Kennedy Space Center,
6 \$1,200,000;

7 (6) Refurbishment of Launch Complex 39 Cool-
8 ing System, Kennedy Space Center, \$4,000,000;

9 (7) Refurbishment of Launch Complex 39 Sec-
10 ondary Circuit Breakers, Kennedy Space Center,
11 \$3,300,000;

12 (8) Refurbishment of Vehicle Assembly Build-
13 ing/Pad Water Storage Tanks, Kennedy Space Cen-
14 ter, \$3,000,000;

15 (9) Rehabilitation of Industrial Area Fire
16 Alarm Reporting System, Kennedy Space Center,
17 \$4,900,000;

18 (10) Restoration of C-5 Substation, Launch
19 Complex 39 Area, Kennedy Space Center,
20 \$5,000,000;

21 (11) Restoration of Class III Landfill, Kennedy
22 Space Center, \$1,900,000;

23 (12) Restoration of High Pressure Air Com-
24 pressor System, Marshall Space Flight Center,
25 \$8,500,000;

1 (13) Restoration of Electrical Power System,
2 Marshall Space Flight Center, \$2,600,000;

3 (14) Repair of Decking and Roof, X-Ray and
4 Staging Facility, Michoud Assembly Facility,
5 \$1,500,000;

6 (15) Replacement of Cooling Tower and Boiler,
7 Michoud Assembly Facility, \$4,000,000;

8 (16) Restoration of Space Shuttle Main Engine
9 Text Complex High Pressure Industrial Water Sys-
10 tem, Stennis Space Center, \$2,300,000;

11 (17) Restoration of High Pressure Gas Storage
12 Capacity, Stennis Space Center, \$2,300,000;

13 (18) Restoration of Underground Communica-
14 tion Distribution System, Stennis Space Center,
15 \$3,800,000;

16 (19) Construction of Earth Systems Science
17 Building, Goddard Space Flight Center,
18 \$12,000,000;

19 (20) Replacement of Central Plant Steam and
20 Electrical Generation Equipment, Goddard Space
21 Flight Center, \$8,600,000;

22 (21) Restoration and Modernization of Chilled
23 Water System, Goddard Space Flight Center,
24 \$5,000,000;

1 (22) Restoration of Airfield, Wallops Flight Fa-
2 cility, \$5,200,000;

3 (23) Replacement of Chillers and Modification
4 of Related Systems, Various Buildings, Jet Propul-
5 sion Laboratory, \$2,900,000;

6 (24) Phase I Facility Studies, Requirements
7 Definition, Design, and Modification and Construc-
8 tion of National Aeronautics Facilities, Various Lo-
9 cations, \$74,000,000;

10 (25) Modifications for Composite Technology
11 Center, Lewis Research Center, \$27,000,000;

12 (26) National Transonic Facility Productivity
13 Enhancement, Langley Research Center,
14 \$60,000,000;

15 (27) Performance Improvements in 11-Foot
16 Wind Tunnel, Ames Research Center, \$20,000,000;

17 (28) Rehabilitation of Control Systems, Na-
18 tional Full-Scale Aerodynamics Complex, Ames Re-
19 search Center, \$2,100,000;

20 (29) Upgrade of Outdoor Aerodynamic Re-
21 search Facility, Ames Research Center, \$3,900,000;

22 (30) Modernization of the Unitary Plan Wind
23 Tunnel Complex, Ames Research Center,
24 \$25,000,000;

1 (31) Construction of EOSDIS Distributed Ac-
2 tive Archive Center, Langley Research Center,
3 \$8,000,000;

4 (32) Rehabilitation of Rocket Engine Test Fa-
5 cility, Lewis Research Center, \$12,500,000;

6 (33) Construction of 34-Meter Multifrequency
7 Antenna, Goldstone Facility, Jet Propulsion Labora-
8 tory, \$17,600,000;

9 (34) Repair of facilities at various locations, not
10 in excess of \$1,000,000 per project, \$36,000,000;

11 (35) Rehabilitation and modification of facilities
12 at various locations, not in excess of \$1,000,000 per
13 project, \$36,000,000;

14 (36) Minor construction of new facilities and
15 additions to existing facilities at various locations,
16 not in excess of \$750,000 per project, \$14,000,000;

17 (37) Facility Planning and Design,
18 \$27,000,000; and

19 (38) Environmental Compliance and Restora-
20 tion, \$50,000,000.

21 Notwithstanding paragraphs (1) through (38), the total
22 amount authorized to be appropriated under this sub-
23 section shall not exceed \$570,300,000.

24 (b) FISCAL YEAR 1995.—There are authorized to be
25 appropriated to the National Aeronautics and Space Ad-

1 ministration for fiscal year 1995 for “Construction of Fa-
2 cilities”, including land acquisition, \$422,200,000.

3 (c) ADDITIONAL USES.—The Administrator may use
4 up to a total of \$5,000,000 of the funds authorized under
5 paragraphs (25) and (32) of subsection (a) for the estab-
6 lishment of a Visitor Center for the Lewis Research Cen-
7 ter if—

8 (1) at least—

9 (A) an equal amount of funding;

10 (B) in-kind resources of equivalent value;

11 or

12 (C) a combination thereof,

13 are provided for such purpose from non-Federal
14 sources; and

15 (2) the use of such funds for such purpose does
16 not adversely affect the construction of the facilities
17 described in such paragraphs (25) and (32).

18 **SEC. 104. RESEARCH AND PROGRAM MANAGEMENT.**

19 There are authorized to be appropriated to the Na-
20 tional Aeronautics and Space Administration for “Re-
21 search and Program Management”, \$1,650,000,000 for
22 fiscal year 1994, and \$1,675,000,000 for fiscal year 1995.

23 **SEC. 105. INSPECTOR GENERAL.**

24 There are authorized to be appropriated to the Na-
25 tional Aeronautics and Space Administration for “Inspec-

1 tor General”, \$15,500,000 for fiscal year 1994, and
2 \$16,000,000 for fiscal year 1995.

3 **Subtitle B—Limitations and**
4 **Special Authority**

5 **SEC. 111. USE OF FUNDS FOR CERTAIN ITEMS AND GRANTS.**

6 (a) AUTHORIZED USES.—Appropriations authorized
7 under sections 101 and 102 may be used for—

8 (1) any items of a capital nature (other than
9 acquisition of land) which may be required at loca-
10 tions other than installations of the National Aero-
11 nautics and Space Administration for the perform-
12 ance of research and development contracts; and

13 (2) grants to institutions of higher education,
14 or to nonprofit organizations whose primary purpose
15 is the conduct of scientific research, for purchase or
16 construction of additional research facilities.

17 (b) VESTING OF TITLE; GRANT CONDITIONS.—Title
18 to facilities described in subsection (a)(2) shall be vested
19 in the United States unless the Administrator determines
20 that the national program of aeronautical and space activi-
21 ties will best be served by vesting title in the grantee insti-
22 tution or organization or the Federal contribution to such
23 purchase or construction is not substantial enough to war-
24 rant vesting title in the United States. Each grant under
25 subsection (a)(2) shall be made under such conditions as

1 the Administrator shall determine to be required to ensure
2 that the United States will receive therefrom benefits ade-
3 quate to justify the making of that grant.

4 (c) LIMITATION.—None of the funds appropriated
5 under sections 101 and 102 may be used in accordance
6 with this section for the construction of any facility, the
7 estimated cost of which, including collateral equipment,
8 exceeds \$750,000, unless 30 days have passed after the
9 Administrator has notified the Committee on Commerce,
10 Science, and Transportation of the Senate and the Com-
11 mittee on Science, Space, and Technology of the House
12 of Representatives of the nature, location, and estimated
13 cost of such facility.

14 **SEC. 112. AVAILABILITY OF APPROPRIATED AMOUNTS.**

15 Appropriations authorized under sections 101, 102,
16 and 103 may remain available until expended. Contracts
17 may be entered into with funds appropriated under section
18 104 or 105 for training, investigations, and costs associ-
19 ated with personnel relocation and for other services pro-
20 vided during the fiscal year following the fiscal year for
21 which funds are appropriated.

22 **SEC. 113. LIMITED USE OF FUNDS.**

23 (a) USE FOR SCIENTIFIC CONSULTATIONS OR EX-
24 TRAORDINARY EXPENSES.—Appropriations authorized
25 under section 101 may be used, but not to exceed \$35,000

1 per fiscal year, for scientific consultations or extraordinary
2 expenses upon the authority of the Administrator, and the
3 Administrator's determination shall be final and conclu-
4 sive upon the accounting officers of the Government.

5 (b) USE FOR FACILITIES.—(1) Except as provided in
6 paragraph (3), appropriations authorized under sections
7 101 and 102 may be used for the construction of new fa-
8 cilities and additions to, repair of, rehabilitation of, or
9 modification of existing facilities, except that the cost of
10 each such project, including collateral equipment, shall not
11 exceed \$200,000 per fiscal year.

12 (2) Appropriations authorized under sections 101 and
13 102 may be used for unforeseen programmatic facility
14 project needs, other than those described in paragraph (1),
15 except that the cost of each such project, including collat-
16 eral equipment, shall not exceed \$750,000 per fiscal year.

17 (3) Appropriations authorized under section 101 may
18 be used for repair, rehabilitation, or modification of facili-
19 ties controlled by the General Services Administration, ex-
20 cept that the cost of each such project, including collateral
21 equipment, shall not exceed \$500,000 per fiscal year.

22 **SEC. 114. REPROGRAMMING FOR CONSTRUCTION OF FA-**
23 **CILITIES.**

24 Appropriations authorized under any paragraph of
25 section 103—

1 (1) in the discretion of the Administrator may
2 be varied upward by 10 percent; or

3 (2) after the expiration of 30 days following a
4 report by the Administrator to the Committee on
5 Commerce, Science, and Transportation of the Sen-
6 ate and the Committee on Science, Space, and Tech-
7 nology of the House of Representatives on the cir-
8 cumstances of such action, may be varied upward by
9 25 percent, to meet unusual cost variations.

10 The total amount authorized to be appropriated under sec-
11 tion 103 shall not be increased as a result of actions au-
12 thorized under paragraphs (1) and (2) of this section.

13 **SEC. 115. SPECIAL REPROGRAMMING AUTHORITY FOR**
14 **CONSTRUCTION OF FACILITIES.**

15 Where the Administrator determines that new devel-
16 opments or scientific or engineering changes in the na-
17 tional program of aeronautical and space activities have
18 occurred; and that such changes require the use of addi-
19 tional funds for the purposes of construction, expansion,
20 or modification of facilities at any location; and that defer-
21 ral of such action until the enactment of the next National
22 Aeronautics and Space Administration Authorization Act
23 would be inconsistent with the interest of the Nation in
24 aeronautical and space activities; the Administrator may
25 transfer not to exceed one-half of one percent of the funds

1 appropriated pursuant to sections 101 and 102 to the ap-
2 propriation under section 103 for such purposes. The Ad-
3 ministrator may also use up to \$10,000,000 of the
4 amounts authorized under section 103 for such purposes.
5 The funds so made available pursuant to this section may
6 be expended to acquire, construct, convert, rehabilitate, or
7 install permanent or temporary public works, including
8 land acquisition, site preparation, appurtenances, utilities,
9 and equipment. No such funds may be obligated until a
10 period of 30 days has passed after the Administrator has
11 transmitted to the Committee on Commerce, Science, and
12 Transportation of the Senate and the Committee on
13 Science, Space, and Technology of the House of Rep-
14 resentatives a written report describing the nature of the
15 construction, its costs, and the reasons therefor.

16 **SEC. 116. CONSIDERATION BY COMMITTEES.**

17 Notwithstanding any other provision of this Act—

18 (1) no amount appropriated pursuant to this
19 Act may be used for any program deleted by the
20 Congress from requests as originally made by the
21 President for the National Aeronautics and Space
22 Administration to either the Committee on Com-
23 merce, Science, and Transportation of the Senate or
24 the Committee on Science, Space, and Technology of
25 the House of Representatives;

1 (2) no amount appropriated pursuant to this
2 Act may be used for any program in excess of the
3 amount actually authorized for the particular pro-
4 gram by section 101, 102, or 104; and

5 (3) no amount appropriated pursuant to this
6 Act may be used for any program which has not
7 been presented to either such committee,
8 unless a period of 30 days has passed after the receipt,
9 by each such committee, of notice given by the Adminis-
10 trator containing a full and complete statement of the ac-
11 tion proposed to be taken and the facts and circumstances
12 relied upon in support of such proposed action. The Na-
13 tional Aeronautics and Space Administration shall keep
14 the Committee on Commerce, Science, and Transportation
15 of the Senate and the Committee on Science, Space, and
16 Technology of the House of Representatives fully and cur-
17 rently informed with respect to all activities and respon-
18 sibilities within the jurisdiction of those committees. Any
19 Federal department, agency, or independent establishment
20 shall furnish any information requested by either commit-
21 tee relating to any such activity or responsibility.

22 **SEC. 117. LIMITATION ON OBLIGATION OF UNAUTHORIZED**
23 **APPROPRIATIONS.**

24 (a) REPORT TO CONGRESS.—Not later than 30 days
25 after the later of the date of enactment of an Act making

1 appropriations to the National Aeronautics and Space Ad-
2 ministration for fiscal year 1994 or 1995 and the date
3 of enactment of this Act, the Administrator shall submit
4 a report to Congress and to the Comptroller General which
5 specifies—

6 (1) the portion of such appropriations which are
7 for programs, projects, or activities not specifically
8 authorized under subtitle A of this title, or which
9 are in excess of amounts authorized for the relevant
10 program, project, or activity under this Act; and

11 (2) the portion of such appropriations which are
12 specifically authorized under this Act.

13 (b) FEDERAL REGISTER NOTICE.—The Adminis-
14 trator shall, coincident with the submission of the report
15 required by subsection (a), publish in the Federal Register
16 a notice of all programs, projects, or activities not specifi-
17 cally authorized under Act, and solicit public comment
18 thereon regarding the impact of any such obligations on
19 the conduct and effectiveness of the national aeronautics
20 and space program.

21 (c) LIMITATION.—Notwithstanding any other provi-
22 sion of this Act, no funds may be obligated for any pro-
23 grams, projects, or activities of the National Aeronautics
24 and Space Administration for fiscal years 1994 and 1995
25 not specifically authorized under this Act until 30 days

1 have passed after the close of the public comment period
2 contained in the notice required in subsection (b).

3 **SEC. 118. LIMITATION ON APPROPRIATIONS.**

4 Notwithstanding any other provision of this Act, no
5 funds are authorized to be appropriated for carrying out
6 the programs for which funds are authorized by this Act
7 for any fiscal year other than as provided by this Act.

8 **SEC. 119. ADDITIONAL LIMITATION.**

9 No funds authorized under this Act may be obligated
10 or expended to transfer the management of the External
11 Tank Program from the Marshall Space Flight Center un-
12 less 30 days have passed after the Administrator has made
13 a report of the technical justification for such a move to
14 the Committee on Science, Space, and Technology of the
15 House of Representatives and the Committee on Com-
16 merce, Science, and Transportation of the Senate, and
17 such Committees have raised no objection.

18 **SEC. 120. PRIORITY EXPENDITURE.**

19 Of the amounts authorized under—

20 (1) section 102(1), only \$258,200,000 for fiscal
21 year 1994 and only \$252,200,000 for fiscal year
22 1995;

23 (2) section 103(a)(24), no funds for fiscal year
24 1994 and no funds for fiscal year 1995;

1 (3) section 102(2), only \$1,887,800,000 for fis-
2 cal year 1994 and only \$1,870,000,000 for fiscal
3 year 1995; and

4 (4) section 104, only \$1,400,000,000 for each
5 of fiscal years 1994 and 1995 to effect the closure
6 of at least one National Aeronautics and Space Ad-
7 ministration Center and the corresponding reduction
8 in full-time equivalent employees,

9 may be expended unless \$1,900,000,000 are made avail-
10 able for such fiscal year for the Space Station Freedom.

11 **SEC. 121. AUTHORIZATIONS AVAILABLE FOR DISASTER RE-**
12 **LIEF.**

13 Notwithstanding any other provision of this title, 1
14 percent of the amounts authorized to be appropriated
15 under sections 100 and 101(a) shall also be authorized
16 to be appropriated for purposes of carrying out disaster
17 relief activities in response to major disasters declared by
18 the President, if the President requests the use of such
19 percentage for such purposes.

20 **SEC. 122. FACILITY PLAN AND ANALYSIS.**

21 Within 60 days after the date of the enactment of
22 this Act, the Administrator shall submit to the Congress
23 a plan for utilizing the facilities acquired by the National
24 Aeronautics and Space Administration in Yellow Creek,
25 Mississippi, that includes an analysis of—

1 (1) the increased costs or savings that would re-
2 sult from using these new facilities to support activi-
3 ties that are consistent with the programs author-
4 ized by this Act; and

5 (2) the costs and benefits of disposing of those
6 facilities as surplus Government assets.

7 **TITLE II—ADVANCED SPACE**
8 **TECHNOLOGY PROGRAM**

9 **SEC. 201. POLICY.**

10 It is the policy of the United States that—

11 (1) the Administrator, in planning for national
12 programs in space science and application, aero-
13 nautical research, space flight, advanced concepts
14 and technology, and exploration, shall consider ways
15 in which the competitiveness of the United States in
16 advanced space technologies can be enhanced;

17 (2) the Administrator shall work closely with
18 other Federal agencies, States, local governments,
19 and industry to coordinate and execute the advanced
20 space technology investment activities of the Na-
21 tional Aeronautics and Space Administration;

22 (3) opportunities for investment in advanced
23 space technologies that advance the competitiveness
24 of the United States shall be identified in concert
25 with United States industry; and

1 (4) the Administrator shall encourage the es-
2 tablishment of industry-led consortia to maximize
3 the opportunities described in paragraph (3).

4 **SEC. 202. ADVANCED SPACE TECHNOLOGY INVESTMENT**
5 **PROGRAM.**

6 (a) **COMPETITIVE PROGRAM.**—The Administrator
7 shall establish a competitive program under this section—

8 (1) to advance the capabilities of United States
9 space technology;

10 (2) to encourage industry-led consortia to de-
11 velop advanced space technologies that advance the
12 competitiveness of the United States; and

13 (3) to encourage participation by industrial par-
14 ticipants not part of the traditional Federal con-
15 tracting base.

16 (b) **ELIGIBLE PARTICIPANTS.**—

17 (1) **GENERAL RULE.**—Single firms, consortia or
18 cooperative arrangements among 2 or more eligible
19 firms, or a nonprofit research organization estab-
20 lished by 2 or more eligible firms, are eligible par-
21 ticipants under this section. Such eligible partici-
22 pants may include participation by Federal labora-
23 tories, institutions of higher education, State agen-
24 cies, and other entities.

1 (c) CRITERIA.—In selecting from among applicants
2 for financial assistance under this section, the Adminis-
3 trator shall consider—

4 (1) the potential of the proposed project to de-
5 velop advanced space technologies that enhance the
6 long-term ability of the United States to make ad-
7 vances in space transportation, exploration, experi-
8 mentation, and commerce;

9 (2) the application’s scientific and technical
10 merit;

11 (3) the extent of funding provided by industry;

12 (4) the potential for long-term commercial ap-
13 plication of the technologies in nongovernmental
14 markets;

15 (5) the likelihood that the goals and objectives
16 of the proposed application will not be achieved with-
17 out financial assistance under this section; and

18 (6) such other criteria as the Administrator
19 considers appropriate.

20 (d) NON-FEDERAL CONTRIBUTION.—The Adminis-
21 trator shall ensure that the amount of the funds provided
22 by the Federal Government under this section does not
23 exceed the total amount provided by non-Federal partici-
24 pants for any one application. The Administrator shall en-
25 sure that not less than 30 percent of total funding for

1 any project for which financial assistance is made avail-
2 able under this section is provided by industry.

3 (e) FINANCING MECHANISMS.—The Administrator
4 shall make full use of the various authorities available
5 under section 203(c)(5) of the National Aeronautics and
6 Space Act of 1958 to carry out this section, especially
7 when applied to eligible firms which are not part of the
8 traditional Federal contracting base.

9 **SEC. 203. COORDINATION WITH EXISTING PROGRAMS.**

10 The Administrator shall coordinate existing activities
11 within the National Aeronautics and Space Administra-
12 tion, including the Small Business Innovation Research
13 Program and Independent Research and Development ac-
14 tivities conducted by industry, with the advanced space
15 technology investment activities established under this
16 title. The Administrator shall coordinate such advanced
17 space technology investment activities with existing pro-
18 grams of the Department of Commerce, the Department
19 of Defense, the Department of Energy, and other Federal
20 agencies to maximize the United States investment in ad-
21 vanced space technology.

22 **SEC. 204. REPORT TO CONGRESS.**

23 The Administrator shall assess the advanced space
24 technology investment activities established under this
25 title, and shall submit a report to Congress on the results

1 of such activities to accompany the President’s budget re-
2 quest for fiscal year 1996.

3 **SEC. 205. DEFINITIONS.**

4 For the purposes of this title—

5 (1) the term “advanced space technology”
6 means technologies which are fundamentally new ca-
7 pabilities requiring basic research, as opposed to
8 evolutions of current technologies and systems;

9 (2) the term “eligible firm” means a business
10 entity—

11 (A) that conducts a significant level of its
12 research, development, engineering, and manu-
13 facturing activities in the United States;

14 (B) the majority ownership or control of
15 which is held by United States citizens; or

16 (C) with a parent company that is incor-
17 porated in a country, the government of
18 which—

19 (i) permits the participation of firms
20 incorporated in the United States in re-
21 search and development consortia to which
22 the government of that country provides
23 funding directly or indirectly through
24 international organizations; and

1 (ii) affords adequate and effective pro-
2 tection for the intellectual property rights
3 of firms incorporated in the United States,
4 and that maintains substantial employment in the
5 United States and agrees to promote the manufac-
6 turing within the United States of products resulting
7 from technologies developed under this title;

8 (3) the term “Federal laboratory” has the
9 meaning given such term in section 4(6) of the Ste-
10 venson-Wydler Technology Innovation Act of 1980;
11 and

12 (4) the term “United States” means the several
13 States, the District of Columbia, the Commonwealth
14 of Puerto Rico, the Virgin Islands, Guam, American
15 Samoa, the Commonwealth of the Northern Mariana
16 Islands, and any other territory or possession of the
17 United States.

18 **SEC. 206. TECHNOLOGY PROCUREMENT INITIATIVE.**

19 (a) IN GENERAL.—The Administrator shall coordi-
20 nate National Aeronautics and Space Administration re-
21 sources in the areas of procurement, commercial pro-
22 grams, and advanced technology in order to—

23 (1) fairly assess and procure commercially
24 available technology from the marketplace in the
25 most efficient manner practicable;

1 (2) achieve a continuous pattern of integrating
2 advanced technology from the commercial sector into
3 the missions and programs of the National Aero-
4 nautics and Space Administration;

5 (3) incorporate private sector buying and bid-
6 ding procedures, including fixed price contracts, into
7 procurements; and

8 (4) provide incentives for cost-plus contractors
9 of the National Aeronautics and Space Administra-
10 tion to integrate commercially available technology
11 in subsystem contracts on a fixed-price basis.

12 (b) CERTIFICATION.—Upon solicitation of any pro-
13 curement for space hardware, technology, or services that
14 are not commercially available, the Administrator shall
15 certify, by publication of a notice and opportunity to com-
16 ment in the Commerce Business Daily, for each such pro-
17 curement action, that no functional equivalent, commer-
18 cially available space hardware, technology, or service ex-
19 ists and that no commercial method of procurement is
20 available.

1 **TITLE III—MISCELLANEOUS**
2 **PROVISIONS RELATING TO**
3 **SPACE ACTIVITIES**

4 **SEC. 301. TRANSMISSION OF BUDGET ESTIMATES.**

5 The Administrator shall, at the time of submission
6 of the President's annual budget request for every fiscal
7 year, transmit to the Congress—

8 (1) a five-year budget detailing the estimated
9 development costs for each individual program under
10 the jurisdiction of the National Aeronautics and
11 Space Administration for which development costs
12 are expected to exceed \$200,000,000; and

13 (2) an estimate of the life-cycle costs associated
14 with each such program.

15 **SEC. 302. COMMERCIAL SPACE LAUNCH ACT AMENDMENTS.**

16 (a) AMENDMENTS.—The Commercial Space Launch
17 Act (49 U.S.C. App. 2601 et seq.) is amended—

18 (1) in section 4—

19 (A) by inserting “from Earth” after “if
20 any,” in paragraph (2);

21 (B) by redesignating paragraphs (9)
22 through (12) as paragraphs (11) through (14),
23 respectively; and

24 (C) by inserting after paragraph (8) the
25 following new paragraphs:

1 “(9) ‘reenter’ and ‘reentry’ mean to return pur-
2 posefully, or attempt to return, a reentry vehicle and
3 payload, if any, from Earth orbit or outer space to
4 Earth;

5 “(10) ‘reentry vehicle’ means any vehicle de-
6 signed to return from Earth orbit or outer space to
7 Earth substantially intact;”;

8 (2) in section 6(a), by inserting “, or reenter a
9 reentry vehicle,” after “operate a launch site” each
10 place it appears;

11 (3) in section 6(a)(2) and (3), by striking “sec-
12 tion 4(11)” each place it appears and inserting in
13 lieu thereof “section 4(14)”;

14 (4) in section 6(a)(3)(A), by inserting “or re-
15 entry” after “such launch or operation”;

16 (5) in section 6(a)(3), by inserting “, or reentry
17 of a reentry vehicle,” after “operation of a launch
18 site” each place it appears;

19 (6) in section 6(b)(1)—

20 (A) by striking “launch license” and in-
21 serting in lieu thereof “license”;

22 (B) by inserting “or reenter” after “shall
23 not launch”;

24 (C) by inserting “or reentry” after “relate
25 to the launch”; and

1 (D) by inserting “or reentered” after “to
2 be launched”;

3 (7) in section 6(b)(2)—

4 (A) by inserting “or reentry” after “pre-
5 vent the launch”;

6 (B) by striking “holder of a launch li-
7 cense” and inserting in lieu thereof “licensee”;
8 and

9 (C) by inserting “or reentry” after “deter-
10 mines that the launch”;

11 (8) in section 6(c)(1), by inserting “or reentry
12 of a reentry vehicle” after “operation of a launch
13 site”;

14 (9) in section 7, by striking “both” and insert-
15 ing in lieu thereof “for reentering one or more re-
16 entry vehicles”;

17 (10) in sections 8(a), 9(b), 11(a), 11(b),
18 12(a)(2)(B), and 12(b), by inserting “, or reentry of
19 a reentry vehicle,” after “operation of a launch site”
20 each place it appears;

21 (11) in section 8(b), by inserting “and the re-
22 entry of reentry vehicles,” after “operation of launch
23 sites,”;

24 (12) in section 11(a), by inserting “or reentry”
25 after “launch or operation”;

1 (13) in section 12(a)(1), by inserting “or re-
2 entry” after “prevent the launch”;

3 (14) in section 12(b), by inserting “or reentry”
4 after “prevent the launch”;

5 (15) in section 14(a)(1)—

6 (A) by inserting “or reentry site” after
7 “observers at any launch site”; and

8 (B) by inserting “or reentry vehicle” after
9 “assembly of a launch vehicle”;

10 (16) in section 15(b)(4)(A)—

11 (A) by inserting “and reentries” after “en-
12 sure that the launches”;

13 (B) by inserting “or reentry date commit-
14 ment” after “launch date commitment”;

15 (C) by inserting “or reentry” after “ob-
16 tained for a launch”;

17 (D) by inserting “, reentry sites,” after
18 “United States launch sites”;

19 (E) by inserting “or reentry site” after
20 “access to a launch site”;

21 (F) by inserting “, or services related to a
22 reentry,” after “amount for launch services”;
23 and

24 (G) by inserting “or reentry” after “the
25 scheduled launch”;

1 (17) in section 15(b)(4)(B), by inserting “or re-
2 entry” after “prompt launching”;

3 (18) in section 15(c), by inserting “or reentry”
4 after “launch site”;

5 (19) in section 16(a)(1)(A) and (B), by insert-
6 ing “or reentry” after “any particular launch” each
7 place it appears;

8 (20) in section 16(a)(1)(C) and (D), by insert-
9 ing “or a reentry” after “launch services” each place
10 it appears;

11 (21) in section 16(a)(2), by inserting “or re-
12 entry” after “launch services”;

13 (22) in section 16(b)(1) and (4) (A) and (B),
14 by inserting “or reentry” after “particular launch”
15 each place it appears;

16 (23) in section 17(b)(2)(A)—

17 (A) by inserting “reentry site,” after
18 “launch site,”; and

19 (B) by inserting “or reentry vehicle” after
20 “site of a launch vehicle”;

21 (24) in section 21(a), by inserting “and re-
22 entry” after “approval of space launch”;

23 (25) in section 21(b)—

24 (A) by inserting “, reentry vehicle,” after
25 “A launch vehicle”; and

1 (B) by inserting “or reentry” after “the
2 launching”;

3 (26) in section 21(c)(1)—

4 (A) by striking “or” in subparagraph (B);

5 (B) by redesignating subparagraph (C) as
6 subparagraph (D); and

7 (C) by inserting after subparagraph (B)
8 the following new subparagraph:

9 “(C) reentry of a reentry vehicle, or”;

10 (27) in section 21(c)(2), by inserting “reentry,”
11 after “launch,”;

12 (28) in section 22(a)—

13 (A) by striking “ending after the date of
14 enactment of this Act and before October 1,
15 1989”; and

16 (B) by inserting “and reentries” after
17 “further commercial launches”; and

18 (29) in section 24, by inserting “There are au-
19 thorized to be appropriated to the Secretary
20 \$4,467,000 to carry out this Act for fiscal year
21 1994.” after “\$4,900,000 to carry out this Act.”.

22 (b) REPORT TO CONGRESS.—The Secretary of
23 Transportation shall submit to Congress an annual report
24 to accompany the President’s budget request which re-
25 views the performance of the regulatory activities and the

1 effectiveness of the Office of Commercial Space Transpor-
2 tation.

3 **SEC. 303. SPACE TRANSPORTATION INFRASTRUCTURE**
4 **MATCHING GRANTS.**

5 In order to ensure the continued resiliency of the Na-
6 tion's space transportation infrastructure, the Secretary
7 of Transportation is authorized to make project grants to
8 public agencies in accordance with section 505 of Public
9 Law 102-588. There are authorized to be appropriated
10 for such grants, \$10,000,000 for fiscal year 1995. Such
11 funds shall remain available until expended.

12 **SEC. 304. OFFICE OF SPACE COMMERCE AUTHORIZATION.**

13 (a) **ROLE OF THE OFFICE OF SPACE COMMERCE.**—
14 The Office of Space Commerce of the Department of Com-
15 merce shall be responsible for the development and coordi-
16 nation of all policy recommendations and activities per-
17 taining to commercial activities in space except those func-
18 tions and activities explicitly authorized in statute to other
19 Federal agencies. In carrying out this responsibility, such
20 Office shall consult with other Federal agencies as appro-
21 priate, including the Department of Transportation, the
22 National Aeronautics and Space Administration, the De-
23 partment of Defense, the Department of State, and the
24 Office of the United States Trade Representative.

1 (b) FUNCTIONS.—The Office of Space Commerce
2 shall be the principal unit for the coordination of space-
3 related issues, programs, and initiatives within the De-
4 partment of Commerce. The Office’s responsibilities shall
5 include—

6 (1) promoting private sector investment in
7 space activities by collecting, analyzing, and dissemi-
8 nating information on space markets, and conduct-
9 ing workshops and seminars to increase awareness
10 of commercial space opportunities;

11 (2) assisting commercial space companies in
12 their efforts to do business with the United States
13 Government, and acting as an industry advocate
14 within the executive branch to ensure that the Fed-
15 eral Government meets its space-related require-
16 ment, to the fullest extent feasible, with commer-
17 cially available space goods and services;

18 (3) ensuring that the United States Govern-
19 ment does not compete with the private sector in the
20 provision of space hardware and services otherwise
21 available from the private sector;

22 (4) promoting the export of space-related goods
23 and services;

24 (5) representing the Department of Commerce
25 in the development of United States policies and in

1 negotiations with foreign countries to ensure free
2 and fair trade internationally in the area of space
3 commerce;

4 (6) seeking the removal of legal, policy, and in-
5 stitutional impediments to space commerce; and

6 (7) supporting the private sector's role in the
7 commercial development of Landsat remote sensing
8 data distribution.

9 (c) REPORT.—The Office of Space Commerce shall,
10 within 6 months after the date of enactment of this Act,
11 submit a report to the President and the Congress con-
12 taining recommendations for procuring space infrastruc-
13 ture, space launch and launch support facilities, and pay-
14 loads using proof of concept methods and unsolicited pro-
15 posals. In preparing such report, the Office of Space Com-
16 merce shall consult with appropriate persons in the private
17 sector.

18 (d) AUTHORIZATION OF APPROPRIATIONS.—In order
19 to carry out this section, there are authorized to be appro-
20 priated to the Secretary of Commerce for the Office of
21 Space Commerce, \$538,000 for fiscal year 1994.

22 **SEC. 305. USE OF DOMESTIC PRODUCTS.**

23 (a) GENERAL RULE.—Except as provided in sub-
24 section (b), the Administrator shall ensure that procure-
25 ments are conducted in compliance with sections 2

1 through 4 of the Act of March 3, 1933 (41 U.S.C. 10a
2 through 10c, popularly known as the “Buy American
3 Act”).

4 (b) LIMITATIONS.—This section shall apply only to
5 procurements made for which—

6 (1) amounts are authorized by this Act to be
7 made available; and

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

10 (c) INAPPLICABILITY IN CASE OF VIOLATION OF
11 INTERNATIONAL AGREEMENT.—This section shall not
12 apply to the extent that the United States Trade Rep-
13 resentative determines that a procurement described in
14 subsection (b) would be in violation of the General Agree-
15 ment on Tariffs and Trade or an international agreement
16 to which the United States is a party.

17 (d) PURCHASE OF AMERICAN MADE EQUIPMENT
18 AND PRODUCTS.—

19 (1) SENSE OF CONGRESS.—It is the sense of
20 Congress that any recipient of a grant under this
21 Act, or under any amendment made by this Act,
22 should purchase, when available and cost-effective,
23 American made equipment and products when ex-
24 pending grant monies.

1 (2) NOTICE TO RECIPIENTS OF ASSISTANCE.—

2 In allocating grants under this Act, or under any
3 amendment made by this Act, the Secretary shall
4 provide to each recipient a notice describing the
5 statement made in paragraph (1) by the Congress.

6 **SEC. 306. REQUIREMENT FOR INDEPENDENT COST**
7 **ANALYSIS.**

8 The Chief Financial Officer for the National Aero-
9 nautics and Space Administration shall be responsible for
10 conducting independent cost analyses of all new projects
11 estimated to cost more than \$5,000,000 and shall report
12 the results annually to Congress at the time of the submis-
13 sion of the President's budget request. In developing cost
14 accounting and reporting standards for carrying out this
15 section, the Chief Financial Officer shall, to the extent
16 practicable and consistent with other laws, solicit the ad-
17 vice of expertise outside of the National Aeronautics and
18 Space Administration.

19 **SEC. 307. GLOBAL CHANGE DATA AND INFORMATION**
20 **SYSTEM.**

21 Title I of the Global Change Research Act of 1990
22 (15 U.S.C. 2931 et seq.) is amended by adding at the end
23 the following new section:

1 **“SEC. 109. GLOBAL CHANGE DATA AND INFORMATION**
2 **SYSTEM.**

3 “(a) The National Aeronautics and Space Adminis-
4 tration, in coordination with other agencies that belong to
5 the Committee on Earth and Environmental Sciences,
6 shall establish the requirements and architecture for, de-
7 sign, and develop a Global Change Data and Information
8 System that shall serve as the system to process, archive,
9 and distribute data generated by the Global Change Re-
10 search Program.

11 “(b) The National Aeronautics and Space Adminis-
12 tration shall design the Global Change Data and Informa-
13 tion System—

14 “(1) so that other Federal agencies may con-
15 nect data centers operated by such agencies to such
16 System; and

17 “(2) so as to minimize, to the extent prac-
18 ticable, the cost of connecting such data centers.

19 “(c) Each agency involved in the Global Change Re-
20 search Program shall retain the responsibility to establish
21 and operate Global Change Data and Information System
22 data centers to process, archive, and distribute data gen-
23 erated by such agency’s programs. Agencies may agree to
24 assume the responsibility for processing, archiving, or dis-
25 tributing data generated by other agencies.”.

1 **SEC. 308. ACCESS TO CLASSIFIED DATA FOR GLOBAL**
2 **CHANGE RESEARCH.**

3 The Committee on Earth and Environmental
4 Sciences shall develop and submit to the Congress within
5 one year after the date of enactment of this Act a plan
6 for providing access to data from classified archives and
7 systems for global change research. The plan shall—

8 (1) to the extent consistent with classification
9 restrictions, identify what data from classified ar-
10 chives and systems may be valuable and available for
11 global change research;

12 (2) determine whether the Global Change Data
13 and Information System or other means should be
14 used to provide access to such data for the scientific
15 community; and

16 (3) identify what agencies should be responsible
17 for particular parts of such classified data and any
18 data centers needed to process, archive, and distrib-
19 ute such data.

20 **SEC. 309. ORBITAL DEBRIS.**

21 The Office of Science and Technology Policy, in co-
22 ordination with the National Aeronautics and Space Ad-
23 ministration, the Department of Defense, the Department
24 of State, and other agencies as appropriate, shall submit
25 a plan to Congress within one year after the date of enact-
26 ment of this Act for the control of orbital debris. The plan

1 shall include proposed launch vehicle and spacecraft de-
2 sign standards and operational procedures to minimize the
3 creation of new debris. The plan shall propose a schedule
4 for the incorporation of the standards into all United
5 States civil, military, and commercial space activities. Fi-
6 nally, the plan shall include a schedule for the development
7 of an international agreement on the control of orbital de-
8bris.

9 **SEC. 310. NATIONAL AERONAUTICS AND SPACE ACT OF 1958**

10 **AMENDMENTS.**

11 (a) **POLICY AND PURPOSE.**—Section 102 of the Na-
12 tional Aeronautics and Space Act of 1958 (42 U.S.C.
13 2451) is amended—

14 (1) by striking subsections (e) and (f) and in-
15 serting in lieu thereof the following:

16 “(e) The Congress declares that the general welfare
17 of the United States requires that the unique competence
18 in scientific and engineering systems of the National Aero-
19 nautics and Space Administration also be directed toward
20 supporting the private sector development of advanced
21 space technologies which enhance economic growth, com-
22 petitiveness, and productivity.”;

23 (2) by redesignating subsections (g) and (h) as
24 subsections (f) and (g), respectively; and

1 (3) in subsection (g), as so redesignated, by
2 striking “(f), and (g)” and inserting in lieu thereof
3 “and (f)”.

4 (b) REPORTS TO CONGRESS.—Section 206(a) of the
5 National Aeronautics and Space Act of 1958 (42 U.S.C.
6 2476(a)) is amended by striking “calendar” and inserting
7 in lieu thereof “fiscal”.

8 **SEC. 311. COMPARATIVE ANALYSIS OF UNITED STATES AND**
9 **FOREIGN EXPENDABLE SPACE LAUNCH**
10 **SYSTEMS.**

11 The National Aeronautics and Space Administration
12 shall conduct a comprehensive study of the differences be-
13 tween existing United States and foreign expendable space
14 launch vehicles. This study shall determine specific dif-
15 ferences in the design, manufacture, processing, and over-
16 all management and infrastructure of current United
17 States and foreign expendable space launch vehicles. The
18 study shall also determine the approximate effect of these
19 differences on the relative cost, reliability, and operational
20 efficiency of such space launch systems. This study shall
21 be conducted in consultation with the Department of De-
22 fense and, as appropriate, other Federal agencies, United
23 States industries, and academic institutions. The results
24 of this study shall be submitted to the Congress no later
25 than October 1, 1994.

1 **SEC. 312. UNIVERSITY INNOVATIVE RESEARCH PROGRAM**

2 **STUDY.**

3 (a) FINDINGS.—The Congress finds that—

4 (1) universities offer a significant resource for
5 the conduct of innovative scientific and technological
6 research to advance the National Aeronautics and
7 Space Administration's mission;

8 (2) the National Aeronautics and Space Admin-
9 istration should act to broaden the foundation of its
10 research base by increasing the direct involvement of
11 university research laboratories in the development
12 of technology for space science;

13 (3) the National Aeronautics and Space Admin-
14 istration should commit to strengthening university
15 research programs in technology beyond contracting
16 with universities for services in support of specific
17 programs; and

18 (4) the National Aeronautics and Space Admin-
19 istration should develop mechanisms to foster inno-
20 vative technological research at universities that do
21 not participate in the University Space Engineering
22 Research Centers.

23 (b) STUDY.—The Administrator shall undertake a
24 study of the feasibility and potential implementation of a
25 University Innovative Research Program which—

1 (1) promotes technological innovation in the
2 United States by using the Nation's universities to
3 help meet the National Aeronautics and Space Ad-
4 ministration's research and development needs, by
5 stimulating technology transfer between universities
6 and industry, and by encouraging participation by
7 minority and disadvantaged persons in technological
8 innovation;

9 (2) is modeled on the Small Business Innova-
10 tion Research Program;

11 (3) avoids duplication of existing National Aero-
12 nautics and Space Administration programs with the
13 universities; and

14 (4) derives funding from the Space Research
15 and Technology program.

16 (c) COMPLETION.—The study required by subsection
17 (b) shall be completed and its results submitted to the
18 Congress within one year after the date of enactment of
19 this Act.

20 (d) ADVICE.—In carrying out the study required by
21 subsection (b), the Administrator shall seek the advice of
22 the National Aeronautics and Space Administration Advi-
23 sory Council, the National Research Council's Aeronautics
24 and Space Engineering Board and Space Studies Board,
25 and other organizations as appropriate.

1 **SEC. 313. GEOGRAPHICAL DISTRIBUTION.**

2 The National Aeronautics and Space Administration
3 shall give consideration to geographical distribution of its
4 research and development funds whenever feasible.

5 **SEC. 314. CONTRACTOR PERFORMANCE.**

6 (a) **GENERAL RULE.**—The Administrator shall re-
7 quire that all cost-type research and development con-
8 tracts entered into by the National Aeronautics and Space
9 Administration for the acquisition of articles or services
10 shall incorporate a provision which holds the contractor
11 liable, in accordance with subsection (c) of this section,
12 for failure to comply with the requirements of the con-
13 tract.

14 (b) **LIABILITIES.**—A provision described in sub-
15 section (a) shall, in the event of such a failure, hold the
16 contractor liable for the lesser of—

17 (1) 50 percent of the cost of rectifying such
18 failure; or

19 (2) 10 percent of the contract value at the time
20 of such failure.

21 (c) **EXCEPTIONS.**—Liability under subsection (b)
22 shall not be imposed if—

23 (1) the failure occurred despite the best efforts
24 of the contractor and could not have been reasonably
25 predicted at the time the contract was awarded; or

1 (2) the failure occurred notwithstanding the
2 fact that the contractor had adopted, and its em-
3 ployees were following, generally accepted industrial
4 practices in carrying out the contract requirements.

5 (d) PROHIBITION.—The cost of insurance to cover
6 potential liabilities described in subsection (b) shall not be
7 an allowable cost under a contract described in subsection
8 (a).

9 **SEC. 315. LAND CONVEYANCE.**

10 The Administrator may accept the conveyance to the
11 United States of certain parcels of land from the cities
12 of Cleveland and Brook Park, Ohio, for the purpose of
13 establishing a Visitor Center for the Lewis Research
14 Center.

15 **SEC. 316. PROCUREMENT.**

16 (a) PROCUREMENT DEMONSTRATION PROGRAM.—

17 (1) IN GENERAL.—The Administrator shall es-
18 tablish within the Office of Advanced Concepts and
19 Technology a program of expedited technology pro-
20 curement for the purpose of demonstrating how in-
21 novative technology concepts can rapidly be brought
22 to bear upon space missions of the National Aero-
23 nautics and Space Administration.

24 (2) PROCEDURES AND EVALUATION.—The Ad-
25 ministrator shall establish procedures for actively

1 seeking from nongovernment persons innovative
2 technology concepts relating to the provision of
3 space hardware, technology, or services to the Na-
4 tional Aeronautics and Space Administration, and
5 for the evaluation of such concepts by the National
6 Aeronautics and Space Administration's Advisory
7 Council against mission requirements.

8 (3) REQUIREMENT.—At least 10 percent of
9 amounts authorized to be appropriated under section
10 101(b)(8) for each fiscal year shall be used for inno-
11 vative technology procurements that are determined
12 under paragraph (2) of this subsection to meet mis-
13 sion requirements.

14 (4) SPECIAL AUTHORITY.—In order to carry
15 out this subsection the Administrator shall recruit
16 and hire for limited term appointments persons from
17 the nongovernmental sector with special expertise
18 and experience related to the innovative technology
19 concepts with respect to which procurements are
20 made under this subsection.

21 (b) SUNSET.—This section shall cease to be effective
22 10 years after the date of its enactment.

23 **SEC. 317. REMOTE SENSING FOR AGRICULTURAL AND RE-**
24 **SOURCE MANAGEMENT.**

25 (a) FINDINGS.—The Congress finds that—

1 (1) the use of remote sensing data is potentially
2 a valuable resource to anticipate potential food, feed,
3 and fiber shortages or excesses, and provide this in-
4 formation to the agricultural community in time to
5 assist farmers with planting decisions;

6 (2) remote sensing data can be useful to predict
7 impending famine problems and forest infestations
8 in time to allow remedial action;

9 (3) remote sensing data can inform the agricul-
10 tural community as to the condition of crops and the
11 land which sustains those crops;

12 (4) remote sensing data can be useful to allow
13 farmers to apply pesticides, nutrients, and water,
14 among other inputs, to farmlands in the exact
15 amounts necessary to maximize crop yield, thereby
16 reducing agricultural costs and minimizing potential
17 harm to the environment;

18 (5) remote sensing data can be valuable, when
19 received on a timely basis, in determining the needs
20 of additional plantings of a particular crop or a sub-
21 stitute crop; and

22 (6) the National Aeronautics and Space Admin-
23 istration, using the expertise of the Earth Observa-
24 tions Commercialization Applications Program, and
25 the Department of Agriculture should work in tan-

1 dem to aid farmers to obtain data conducive to
2 sound agricultural management and greater crop
3 yields.

4 (b) INFORMATION DEVELOPMENT.—The Secretary of
5 Agriculture and the Administrator of the National Aero-
6 nautics and Space Administration, maximizing private
7 funding and involvement, shall provide farmers and other
8 interested persons with timely information, through re-
9 mote sensing, on crop conditions, fertilization and irriga-
10 tion needs, pest infiltration, soil conditions, projected food,
11 feed, and fiber production and any other information
12 available through remote sensing.

13 (c) ENHANCED REMOTE SENSING PROGRAM.—

14 (1) The Secretary of Agriculture and the Ad-
15 ministrator of the National Aeronautics and Space
16 Administration shall jointly evaluate the need for a
17 radar imaging platform that could enhance United
18 States remote sensing capability by providing infor-
19 mation and data relating to agricultural resources,
20 and which may have other commercial and research
21 applications.

22 (2) In the event there is a finding of need for
23 a platform as set forth in paragraph (1), the Sec-
24 retary of Agriculture and the Administrator of the
25 National Aeronautics and Space Administration

1 shall jointly develop a proposal, which maximizes
2 private funding and involvement in the launch and
3 operation of such platform, and in the management
4 and dissemination of the data from such platform.

5 The Secretary and the Administrator shall jointly
6 submit the proposal, within 30 days of its develop-
7 ment, to the House Committee on Agriculture, the
8 Senate Committee on Agriculture, Nutrition, and
9 Forestry, the House Committee on Science, Space,
10 and Technology, and the Senate Committee on Com-
11 merce, Science, and Transportation.

12 (d) TRAINING.—The Secretary of Agriculture and the
13 Administrator of the National Aeronautics and Space Ad-
14 ministration shall jointly develop a proposal to inform
15 farmers and other prospective users concerning the use
16 and availability of remote sensing data.

17 (e) SUNSET.—The provisions of this section shall ex-
18 pire 5 years after the date of enactment of this Act.

19 **SEC. 318. ADDITIONAL NATIONAL AERONAUTICS AND**
20 **SPACE ADMINISTRATION FACILITIES.**

21 (a) SELECTION IN DEPRESSED COMMUNITIES.—
22 When consistent with the goals of the National Aero-
23 nautics and Space Administration and cost-effective, the
24 Administrator shall select sites in depressed communities
25 for new programs or functions of the National Aeronautics

1 and Space Administration, unless those new programs or
2 functions are so closely related to programs or functions
3 carried out at an existing facility as to require being car-
4 ried out at that existing facility.

5 (b) DEFINITIONS.—For purposes of this section, the
6 term “depressed communities” means rural and urban
7 communities that are relatively depressed, in terms of age
8 of housing, extent of poverty, growth of per capita income,
9 extent of unemployment, job lag, or surplus labor.

10 **SEC. 319. RECIPROCITY.**

11 (a) GENERAL RULE.—Except as provided in sub-
12 section (b), no contract or subcontract may be made with
13 funds authorized under this Act to a company organized
14 under the laws of a foreign country unless the Adminis-
15 trator finds that such country affords comparable oppor-
16 tunities to companies organized under the laws of the
17 United States.

18 (b) EXCEPTION.—(1) The Administrator may waive
19 the rule stated under subsection (a) if the products or
20 services required are not reasonably available from compa-
21 nies organized under the laws of the United States. Any
22 such waiver shall be reported to the Congress.

23 (2) Subsection (a) shall not apply to the extent that
24 to do so would violate the General Agreement on Tariffs

1 and Trade or any other international agreement to which
2 the United States is a party.

3 **SEC. 320. HELIUM PURCHASES.**

4 The National Aeronautics and Space Administration
5 may purchase helium from private sector sources.

6 **SEC. 321. DIVERSITY FACTORS IN PROCUREMENT.**

7 (a) IN GENERAL.—The Administrator shall ensure,
8 to the fullest extent possible, that at least 8 percent of
9 the funding made available to the National Aeronautics
10 and Space Administration for each fiscal year is made
11 available for contracts with—

12 (1) socially and economically disadvantaged
13 small business concerns;

14 (2) business concerns or other organizations
15 that are at least 51 percent owned or controlled by
16 women;

17 (3) historically Black colleges and universities;
18 and

19 (4) colleges and universities having a student
20 body in which more than 20 percent of the students
21 are Hispanic Americans, and other Minority Institu-
22 tions.

23 (b) WAIVER OF COMPETITIVE PROCEDURES.—To the
24 extent necessary to carry out subsection (a), the Adminis-
25 trator may enter into contracts using less than full and

1 open competitive procedures, but shall pay a price not ex-
2 ceeding fair market cost by more than 10 percent in pay-
3 ment per contract to contractors or subcontractors de-
4 scribed in subsection (a).

5 (c) REGULATIONS.—The Administrator shall issue
6 such regulations as are necessary to carry out this section,
7 including—

8 (1) guidelines for contracting officers of the
9 National Aeronautics and Space Administration for
10 carrying out subsection (b);

11 (2) to the extent practicable, provision for no-
12 tice, before solicitation for procurements, that spe-
13 cific procurements have been designated for satisfy-
14 ing the requirement of subsection (a); and

15 (3) procedures for implementing this section
16 that do not alter the procurement process under sec-
17 tion 8(a) of the Small Business Act.

18 (d) DEFINITIONS.—For purposes of this section—

19 (1) the term “historically Black colleges and
20 universities” has the meaning given the term “part
21 B institution” in section 322(2) of the Higher Edu-
22 cation Act of 1965;

23 (2) the term “other Minority Institution” has
24 the meaning given the term “eligible institution” in

1 section 312(b) of the Higher Education Act of 1965;
2 and

3 (3) the term “socially and economically dis-
4 advantaged small business concerns” has the mean-
5 ing given such term in section 8(a)(4)(A) of the
6 Small Business Act.

7 **TITLE IV—AERONAUTICS**
8 **RESEARCH AND TECHNOLOGY**

9 **SEC. 401. FINDINGS.**

10 The Congress finds that—

11 (1) the aerospace industry makes a major con-
12 tribution to the economy of the United States, ac-
13 counting for the largest positive trade balance of any
14 United States industry (more than \$28,000,000,000
15 in 1992), and providing over 1,000,000 high-value
16 jobs;

17 (2) the international market share of the Unit-
18 ed States aerospace industry has steadily eroded due
19 to competition from foreign consortia that receive
20 substantial direct subsidies from their governments;

21 (3) the United States aerospace industry is fur-
22 ther negatively impacted by reduced investment in
23 national defense;

24 (4) the continued competitiveness of the United
25 States aerospace industry can be significantly aided

1 by an enhanced Federal investment in technology
2 base research and development in aeronautics;

3 (5) maintaining state-of-the-art experimental
4 facilities is a key element of Federal investment in
5 aeronautics research and development;

6 (6) the long-term contribution of advances in
7 aeronautics to the economy and society will rely on
8 a continued commitment to pioneering research and
9 development such as the National Aero-Space Plane;

10 (7) the National Aero-Space Plane program
11 should explore the possibility of collaboration with
12 other nations for opportunities that would offer
13 unique programmatic benefits without compromising
14 the strategic advantage to the United States; and

15 (8) cost sharing for facilities use is a highly de-
16 sirable objective given the deficit reduction goals of
17 the President and the Congress.

18 **SEC. 402. DEFINITION.**

19 For purposes of this title, the term “independent or-
20 ganization” means an organization that does not receive
21 significant funding or support from the National Aero-
22 nautics and Space Administration, other than under sec-
23 tions 403, 404, and 406.

1 **SEC. 403. INDEPENDENT PERFORMANCE REVIEW.**

2 (a) PLAN.—The Administrator shall provide for the
3 development of a plan establishing criteria, procedures,
4 and milestones for the evaluation, by an independent orga-
5 nization, of advances made in fundamental aeronautics re-
6 search and development and the progress made by the aer-
7 onautics programs of the National Aeronautics and Space
8 Administration in achieving their goals. Such plan shall
9 be developed by an independent organization in consulta-
10 tion with the Administrator. The plan shall also describe
11 criteria and procedures for terminating National Aero-
12 nautics and Space Administration programs that are not
13 making acceptable progress toward their goals. The Ad-
14 ministrator shall submit a report describing such plan to
15 the Congress within 6 months after the date of the enact-
16 ment of this Act.

17 (b) ANNUAL REPORT.—Beginning in the first year
18 after submission of the plan under subsection (a), at the
19 time of the President’s annual budget request to Congress,
20 the Administrator shall submit to the Congress an annual
21 report on the results of an evaluation, conducted by an
22 independent organization, of the progress made by the Na-
23 tional Aeronautics and Space Administration in advancing
24 aeronautics and achieving the goals of aeronautics pro-
25 grams. Such evaluation shall be conducted using the cri-

1 teria, procedures, and milestones established under the
2 plan required by subsection (a).

3 **SEC. 404. TECHNOLOGY TRANSFER REVIEW.**

4 (a) **PLAN.**—The Administrator shall provide for the
5 development of a plan establishing criteria and procedures
6 for the evaluation, by an independent organization, of the
7 effectiveness of technology transfer from the National Aer-
8 onautics and Space Administration’s aeronautics pro-
9 grams to industry and other public organizations. Such
10 plan shall be developed by an independent organization in
11 consultation with the Administrator. The plan shall in-
12 clude clear, quantitative measures of the success of such
13 technology transfer activities. The Administrator shall
14 submit a report describing such plan to the Congress with-
15 in 6 months after the date of the enactment of this Act.

16 (b) **ANNUAL REPORT.**—Beginning in the first year
17 after submission of the plan under subsection (a), at the
18 time of the President’s annual budget request to Congress,
19 the Administrator shall submit to the Congress an annual
20 report on the results of an evaluation, conducted by an
21 independent organization, of the effectiveness of the Na-
22 tional Aeronautics and Space Administration’s technology
23 transfer programs. Such evaluation shall be conducted
24 using the criteria and procedures established under the
25 plan required by subsection (a).

1 **SEC. 405. FACILITIES COST SHARING.**

2 The Administrator, in conjunction with other ongoing
3 activities of the National Aeronautics and Space Adminis-
4 tration such as the Aerospace Facilities Plan, shall study
5 existing and potential cost sharing provisions between the
6 Federal Government and industry as they relate to the
7 use of wind tunnels and related test facilities to ensure
8 that cost sharing is employed to the fullest reasonable ex-
9 tent. The Administrator shall submit to the Congress the
10 results of such study concurrent with the completion of
11 the Aerospace Facilities Plan, or one year after the date
12 of enactment of this Act, whichever occurs first.

13 **SEC. 406. JOINT AERONAUTICAL RESEARCH AND DEVELOP-**
14 **MENT PROGRAM.**

15 (a) **ESTABLISHMENT.**—The Administrator and the
16 heads of other appropriate Federal agencies shall jointly
17 establish a program for the purpose of conducting re-
18 search on aeronautical technologies that enhance United
19 States competitiveness. Such program shall include—

20 (1) research on next-generation wind tunnel
21 and advanced wind tunnel instrumentation tech-
22 nology;

23 (2) research on advanced engine materials, en-
24 gine concepts, and testing of propulsion systems or
25 components of the high-speed civil transport re-
26 search program;

- 1 (3) advanced general aviation research;
- 2 (4) advanced rotorcraft research; and
- 3 (5) advanced hypersonic aeronautical research.

4 (b) CONTRACTS AND GRANTS.—Contracts and grants
5 entered into under the program established under sub-
6 section (a) shall be administered using procedures devel-
7 oped jointly by the Administrator and the heads of the
8 other Federal agencies involved in the program. These
9 procedures should include an integrated acquisition policy
10 for contract and grant requirements and for technical data
11 rights that are not an impediment to joint programs
12 among the National Aeronautics and Space Administra-
13 tion, the other Federal agencies involved in the program,
14 and industry.

15 (c) ELEMENTS OF PROGRAM.—The program estab-
16 lished under subsection (a) shall include—

- 17 (1) selected programs that jointly enhance pub-
18 lic and private aeronautical technology development;
- 19 (2) an opportunity for private contractors to be
20 involved in such technology research and develop-
21 ment; and
- 22 (3) the transfer of Government-developed tech-
23 nologies to the private sector to promote economic
24 strength and competitiveness.

1 **SEC. 407. NATIONAL AERO-SPACE PLANE.**

2 (a) FINDINGS.—The Congress finds that—

3 (1) hypersonic flight will be critical to the con-
4 tinued contribution of aeronautics to the economic
5 and strategic interests of the United States in the
6 early twenty-first century;

7 (2) the data obtained through rocket-based
8 hypersonic flight experiments will not, by themselves,
9 reduce risk sufficiently to allow the development of
10 a single-stage-to-orbit, air-breathing plane; and

11 (3) a single-stage hypersonic research plane is
12 critical to the successful exploration of the
13 hypersonic flight regime and the timely realization of
14 a single-stage-to-orbit, air-breathing plane.

15 (b) HYPERSONIC RESEARCH PLANE ASSESSMENT.—

16 The Administrator shall conduct a study, through an inde-
17 pendent organization, of strategies that would optimize
18 the next phase of the National Aero-Space Plane program
19 by integrating with the rocket-based hypersonic flight ex-
20 periments the development, in the shortest possible time
21 frame, of a single-stage hypersonic research plane capable
22 of speeds in the Mach 10 to Mach 15 range or greater,
23 with the objective of providing data that would accelerate
24 the ultimate development of a single-stage-to-orbit, air-
25 breathing plane. The Administrator shall report the re-

- 1 sults of the study to Congress no later than 6 months after
- 2 the date of the enactment of this Act.

Passed the House of Representatives July 29, 1993.

Attest: DONNALD K. ANDERSON,
Clerk.

HR 2200 RFS—2

HR 2200 RFS—3

HR 2200 RFS—4

HR 2200 RFS—5