

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AUTHORIZATION ACT OF 2000

SEPTEMBER 12, 2000.—Ordered to be printed

Mr. SENSENBRENNER, from the committee of conference,
submitted the following

CONFERENCE REPORT

[To accompany H.R. 1654]

The committee of conference on the disagreeing votes of the two Houses on the amendment of the Senate to the bill (H.R. 1654), to authorize appropriations for the National Aeronautics and Space Administration for fiscal years 2000, 2001, and 2002, and for other purposes, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the House recede from its disagreement to the amendment of the Senate and agree to the same with an amendment as follows:

In lieu of the matter proposed to be inserted by the Senate amendment, insert the following:

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) *SHORT TITLE.*—*This Act may be cited as the “National Aeronautics and Space Administration Authorization Act of 2000”.*

(b) *TABLE OF CONTENTS.*—

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SEC. 2. FINDINGS.

The Congress makes the following findings:

(1) The National Aeronautics and Space Administration should continue to pursue actions and reforms directed at reducing institutional costs, including management restructuring, facility consolidation, procurement reform, and convergence with defense and commercial sector systems, while sustaining safety standards for personnel and hardware.

(2) The United States is on the verge of creating and using new technologies in microsatellites, information processing, and space transportation that could radically alter the manner in which the Federal Government approaches its space mission.

(3) The overwhelming preponderance of the Federal Government's requirements for routine, unmanned space transportation can be met most effectively, efficiently, and economically by a free and competitive market in privately developed and operated space transportation services.

(4) In formulating a national space transportation service policy, the National Aeronautics and Space Administration should aggressively promote the pursuit by commercial providers of development of advanced space transportation tech-

nologies including reusable space vehicles and human space systems.

(5) The Federal Government should invest in the types of research and innovative technology in which United States commercial providers do not invest, while avoiding competition with the activities in which United States commercial providers do invest.

(6) International cooperation in space exploration and science activities most effectively serves the United States national interest—

(A) when it—

(i) reduces the cost of undertaking missions the United States Government would pursue unilaterally;

(ii) enables the United States to pursue missions that it could not otherwise afford to pursue unilaterally; or

(iii) enhances United States capabilities to use and develop space for the benefit of United States citizens; and

(B) when it—

(i) is undertaken in a manner that is sensitive to the desire of United States commercial providers to develop or explore space commercially;

(ii) is consistent with the need for Federal agencies to use space to complete their missions; and

(iii) is carried out in a manner consistent with United States export control laws.

(7) The National Aeronautics and Space Administration and the Department of Defense should cooperate more effectively in leveraging the mutual capabilities of these agencies to conduct joint aeronautics and space missions that not only improve United States aeronautics and space capabilities, but also reduce the cost of conducting those missions.

(8) The space shuttle will remain for the foreseeable future the Nation's only means of safe and reliable crewed access to space. As a result, the Congress is committed to funding upgrades designed to improve the shuttle's safety and reliability. The National Aeronautics and Space Administration should continue to provide appropriate levels of funding in its annual budget requests to meet the schedule for completing the high-priority upgrades in a timely manner.

(9) The Deep Space Network will continue to be a critically important part of the Nation's scientific and exploration infrastructure in the coming decades, and the National Aeronautics and Space Administration should ensure that the Network is adequately maintained and that upgrades required to support future missions are undertaken in a timely manner.

(10) The Hubble Space Telescope has proven to be an important national astronomical research facility that is revolutionizing our understanding of the universe and should be kept productive, and its capabilities should be maintained and enhanced as appropriate to serve as a scientific bridge to the next generation of space-based observatories.

(11) The National Aeronautics and Space Administration is to be commended for its successful efforts to transfer mobile ro-

botics technologies to the United States industry through its existing 5-year commitment to the National Robotics Engineering Consortium (NREC). One of the attractive features of this activity has been NREC's ability to attract private sector matching funds for its government-sponsored projects. The National Aeronautics and Space Administration should give strong consideration to a continuation of its commitment to NREC after the current agreement expires.

SEC. 3. DEFINITIONS.

For purposes of this Act—

(1) *the term "Administrator" means the Administrator of the National Aeronautics and Space Administration;*

(2) *the term "commercial provider" means any person providing space transportation services or other space-related activities, the primary control of which is held by persons other than a Federal, State, local, or foreign government;*

(3) *the term "critical path" means the sequence of events of a schedule of events under which a delay in any event causes a delay in the overall schedule;*

(4) *the term "grant agreement" has the meaning given that term in section 6302(2) of title 31, United States Code;*

(5) *the term "institution of higher education" has the meaning given such term in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001);*

(6) *the term "State" means each of the several States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and any other commonwealth, territory, or possession of the United States; and*

(7) *the term "United States commercial provider" means a commercial provider, organized under the laws of the United States or of a State, which is—*

(A) *more than 50 percent owned by United States nationals; or*

(B) *a subsidiary of a foreign company and the Secretary of Commerce finds that—*

(i) *such subsidiary has in the past evidenced a substantial commitment to the United States market through—*

(I) *investments in the United States in long-term research, development, and manufacturing (including the manufacture of major components and subassemblies); and*

(II) *significant contributions to employment in the United States; and*

(ii) *the country or countries in which such foreign company is incorporated or organized, and, if appropriate, in which it principally conducts its business, affords reciprocal treatment to companies described in subparagraph (A) comparable to that afforded to such foreign company's subsidiary in the United States, as evidenced by—*

(I) *providing comparable opportunities for companies described in subparagraph (A) to par-*

ticipate in Government sponsored research and development similar to that authorized under this Act;

(II) providing no barriers to companies described in subparagraph (A) with respect to local investment opportunities that are not provided to foreign companies in the United States; and

(III) providing adequate and effective protection for the intellectual property rights of companies described in subparagraph (A).

TITLE I—AUTHORIZATION OF APPROPRIATIONS

Subtitle A—Authorizations

SEC. 101. HUMAN SPACE FLIGHT.

(a) FISCAL YEAR 2000.—There are authorized to be appropriated to the National Aeronautics and Space Administration for Human Space Flight for fiscal year 2000, \$5,487,900,000.

(b) FISCAL YEARS 2001 AND 2002.—There are authorized to be appropriated to the National Aeronautics and Space Administration for Human Space Flight for fiscal years 2001 and 2002 the following amounts:

(1) For International Space Station—

(A) for fiscal year 2001, \$2,114,500,000 of which \$455,400,000, notwithstanding section 121(a)—

(i) shall only be for Space Station research or for the purposes described in section 102(b)(2); and

(ii) shall be administered by the Office of Life and Microgravity Sciences and Applications; and

(B) for fiscal year 2002, \$1,858,500,000, of which \$451,600,000, notwithstanding section 121(a)—

(i) shall only be for Space Station research or for the purposes described in section 102(b)(2); and

(ii) shall be administered by the Office of Life and Microgravity Sciences and Applications.

(2) For Space Shuttle—

(A) for fiscal year 2001, \$3,165,700,000, of which \$492,900,000 shall be for Safety and Performance Upgrades; and

(B) for fiscal year 2002, \$3,307,800,000.

(3) For Payload and ELV Support—

(A) for fiscal year 2001, \$90,200,000; and

(B) for fiscal year 2002, \$90,300,000.

(4) For Investments and Support—

(A) for fiscal year 2001, \$129,500,000, of which \$20,000,000 shall be for Technology and Commercialization; and

(B) for fiscal year 2002, \$131,000,000, of which \$20,000,000 shall be for Technology and Commercialization.

SEC. 102. SCIENCE, AERONAUTICS, AND TECHNOLOGY.

(a) FISCAL YEAR 2000.—There are authorized to be appropriated to the National Aeronautics and Space Administration for

Science, Aeronautics, and Technology \$5,580,900,000 for fiscal year 2000.

(b) *FISCAL YEARS 2001 AND 2002.*—There are authorized to be appropriated to the National Aeronautics and Space Administration for Science, Aeronautics, and Technology for fiscal years 2001 and 2002 the following amounts:

- (1) *For Space Science*—
 - (A) for fiscal year 2001, \$2,417,800,000, of which—
 - (i) \$10,500,000 shall be for the Near Earth Object Survey;
 - (ii) \$523,601,000 shall be for the Research Program; and
 - (iii) \$12,000,000 shall be for Space Solar Power technology; and
 - (B) for fiscal year 2002, \$2,630,400,000, of which—
 - (i) \$10,500,000 shall be for the Near Earth Object Survey;
 - (ii) \$566,700,000 shall be for the Research Program;
 - (iii) \$12,000,000 shall be for Space Solar Power technology; and
 - (iv) \$5,000,000 shall be for Space Science Data Buy.
- (2) *For Life and Microgravity Sciences and Applications*—
 - (A) for fiscal year 2001, \$335,200,000, of which \$2,000,000 shall be for research and early detection systems for breast and ovarian cancer and other women's health issues, \$5,000,000 shall be for sounding rocket vouchers, \$2,000,000 shall be made available for immediate clinical trials of islet transplantation in patients with Type I diabetes utilizing immunoisolation technologies derived from NASA space flights, and \$70,000,000 may be used for activities associated with International Space Station research; and
 - (B) for fiscal year 2002, \$344,000,000, of which \$2,000,000 shall be for research and early detection systems for breast and ovarian cancer and other women's health issues, appropriate funding shall be made available for continuing clinical trials of islet transplantation in patients with Type I diabetes utilizing immunoisolation technologies derived from NASA space flights, and \$80,800,000 may be used for activities associated with International Space Station research.
- (3) *For Earth Science, subject to the limitations set forth in section 125*—
 - (A) for fiscal year 2001, \$1,430,800,000; and
 - (B) for fiscal year 2002, \$1,357,500,000.
- (4) *For Aero-Space Technology*—
 - (A) for fiscal year 2001, \$1,224,000,000, of which—
 - (i) at least \$36,000,000 shall be for Quiet Aircraft Technology;
 - (ii) at least \$70,000,000 shall be for the Aviation Safety program; and
 - (iii) \$50,000,000 shall be for ultra-efficient engine technology; and

- (iv) \$290,000,000 shall be for Second Generation RLV Program; and
- (B) for fiscal year 2002, \$1,574,900,000, of which—
 - (i) at least \$36,000,000 shall be for Quiet Aircraft Technology;
 - (ii) at least \$70,000,000 shall be for the Aviation Safety program; and
 - (iii) \$50,000,000 shall be for ultra-efficient engine technology; and
 - (iv) \$610,000,000 shall be for Second Generation RLV Program.
- (5) For Space Operations—
 - (A) for fiscal year 2001, \$529,400,000; and
 - (B) for fiscal year 2002, \$500,800,000.
- (6) For Academic Programs—
 - (A) for fiscal year 2001, \$141,300,000, of which—
 - (i) \$11,800,000 shall be for the Teacher/Faculty Preparation and Enhancement Programs;
 - (ii) \$11,800,000 shall be for the program known as the Experimental Program to Stimulate Competitive Research;
 - (iii) \$54,000,000 shall be for minority university research and education (at institutions such as Hispanic-serving institutions, Alaska Native serving institutions, Native Hawaiian serving institutions, and tribally controlled colleges and universities), including \$35,900,000 for Historically Black Colleges and Universities; and
 - (iv) \$28,000,000 shall be for space grant colleges designated under section 208 of the National Space Grant College and Fellowship Act; and
 - (B) for fiscal year 2002, \$141,300,000, of which—
 - (i) \$12,500,000 shall be for the Teacher/Faculty Preparation and Enhancement Programs;
 - (ii) \$12,500,000 shall be for the program known as the Experimental Program to Stimulate Competitive Research;
 - (iii) \$54,000,000 shall be for minority university research and education (at institutions such as Hispanic-serving institutions, Alaska Native serving institutions, Native Hawaiian serving institutions, and tribally controlled colleges and universities), including \$35,900,000 for Historically Black Colleges and Universities; and
 - (iv) \$28,000,000 shall be for space grant colleges designated under section 208 of the National Space Grant College and Fellowship Act.

SEC. 103. MISSION SUPPORT.

(a) *FISCAL YEAR 2000.*—There are authorized to be appropriated to the National Aeronautics and Space Administration for Mission Support for fiscal year 2000 \$2,512,000,000.

(b) *FISCAL YEARS 2001 AND 2002.*—There are authorized to be appropriated to the National Aeronautics and Space Administration for Mission Support for fiscal years 2001 and 2002 the following amounts:

(1) *For Safety, Mission Assurance, Engineering, and Advanced Concepts—*

(A) *for fiscal year 2001, \$47,500,000; and*

(B) *for fiscal year 2002, \$51,500,000.*

(2) *For Construction of Facilities, including land acquisition—*

(A) *for fiscal year 2001, \$245,900,000; and*

(B) *for fiscal year 2002, \$231,000,000.*

(3) *For Research and Program Management, including personnel and related costs, travel, and research operations support—*

(A) *for fiscal year 2001, \$2,290,600,000; and*

(B) *for fiscal year 2002, \$2,383,700,000.*

SEC. 104. INSPECTOR GENERAL.

There are authorized to be appropriated to the National Aeronautics and Space Administration for Inspector General—

(1) *for fiscal year 2000, \$20,000,000;*

(2) *for fiscal year 2001, \$22,000,000; and*

(3) *for fiscal year 2002, \$22,700,000.*

SEC. 105. TOTAL AUTHORIZATION.

Notwithstanding any other provision of this title, the total amount authorized to be appropriated to the National Aeronautics and Space Administration under this Act shall not exceed—

(1) *for fiscal year 2001, \$14,184,400,000; and*

(2) *for fiscal year 2002, \$14,625,400,000.*

Subtitle B—Limitations and Special Authority

SEC. 121. USE OF FUNDS FOR CONSTRUCTION.

(a) *AUTHORIZED USES.—Funds appropriated under sections 101, 102, and 103(b)(1) and funds appropriated for research operations support under section 103(b)(3) may, at any location in support of the purposes for which such funds are appropriated, be used for—*

(1) *the construction of new facilities; and*

(2) *additions to, repair of, rehabilitation of, or modification of existing facilities (in existence on the date on which such funds are made available by appropriation).*

(b) *LIMITATION.—*

(1) *IN GENERAL.—Until the date specified in paragraph (2), no funds may be expended pursuant to subsection (a) for a project, with respect to which the estimated cost to the National Aeronautics and Space Administration, including collateral equipment, exceeds \$1,000,000.*

(2) *DATE.—The date specified in this paragraph is the date that is 30 days after the Administrator notifies the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science of the House of Representatives of the nature, location, and estimated cost to the National Aeronautics and Space Administration of the project referred to in paragraph (1).*

(c) *TITLE TO FACILITIES.—*

(1) *IN GENERAL.—If funds are used pursuant to subsection (a) for grants for the purchase or construction of additional research facilities to institutions of higher education, or to non-*

profit organizations whose primary purpose is the conduct of scientific research, title to these facilities shall be vested in the United States.

(2) *EXCEPTION.—If the Administrator determines that the national program of aeronautical and space activities will best be served by vesting title to a facility referred to in paragraph (1) in an institution or organization referred to in that paragraph, the title to that facility shall vest in that institution or organization.*

(3) *CONDITION.—Each grant referred to in paragraph (1) shall be made under such conditions as the Administrator determines to be necessary to ensure that the United States will receive benefits from the grant that are adequate to justify the making of the grant.*

SEC. 122. AVAILABILITY OF APPROPRIATED AMOUNTS.

To the extent provided in appropriations Acts, appropriations authorized under subtitle A may remain available without fiscal year limitation.

SEC. 123. REPROGRAMMING FOR CONSTRUCTION OF FACILITIES.

(a) *IN GENERAL.—Appropriations authorized for construction of facilities under section 103(b)(2)—*

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

(2) may be varied upward by 25 percent, to meet unusual cost variations, after the expiration of 15 days following a report on the circumstances of such action by the Administrator to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

The aggregate amount authorized to be appropriated for construction of facilities under section 103(b)(2) shall not be increased as a result of actions authorized under paragraphs (1) and (2) of this subsection.

(b) *SPECIAL RULE.—Where the Administrator determines that new developments in the national program of aeronautical and space activities have occurred; and that such developments 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 National Aeronautics and Space Administration authorization Act would be inconsistent with the interest of the Nation in aeronautical and space activities, the Administrator may use up to \$10,000,000 of the amounts authorized under section 103(b)(2) for each fiscal year for such purposes. No such funds may be obligated until a period of 30 days has passed after the Administrator has transmitted to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science of the House of Representatives a written report describing the nature of the construction, its costs, and the reasons therefor.*

SEC. 124. USE OF FUNDS FOR SCIENTIFIC CONSULTATIONS OR EXTRAORDINARY EXPENSES.

Not more than \$32,500 of the funds appropriated under section 102 may be used for scientific consultations or extraordinary expenses, upon the authority of the Administrator.

SEC. 125. EARTH SCIENCE LIMITATION.

Of the funds authorized to be appropriated for Earth Science under section 102(b)(3) for each of fiscal years 2001 and 2002, \$25,000,000 shall be for the Commercial Remote Sensing Program for commercial data purchases, unless the National Aeronautics and Space Administration has integrated data purchases into the procurement process for Earth science research by obligating at least 5 percent of the aggregate amount appropriated for that fiscal year for Earth Observing System and Earth Probes for the purchase of Earth science data from the private sector.

SEC. 126. COMPETITIVENESS AND INTERNATIONAL COOPERATION.

(a) LIMITATION.—(1) As part of the evaluation of the costs and benefits of entering into an obligation to conduct a space mission in which a foreign entity will participate as a supplier of the spacecraft, spacecraft system, or launch system, the Administrator shall solicit comment on the potential impact of such participation through notice published in Commerce Business Daily at least 45 days before entering into such an obligation.

(2) The Administrator shall certify to the Congress at least 15 days in advance of any cooperative agreement with the People's Republic of China, or any company owned by the People's Republic of China or incorporated under the laws of the People's Republic of China, involving spacecraft, spacecraft systems, launch systems, or scientific or technical information that—

(A) the agreement is not detrimental to the United States space launch industry; and

(B) the agreement, including any indirect technical benefit that could be derived from the agreement, will not improve the missile or space launch capabilities of the People's Republic of China.

(3) The Inspector General of the National Aeronautics and Space Administration, in consultation with appropriate agencies, shall conduct an annual audit of the policies and procedures of the National Aeronautics and Space Administration with respect to the export of technologies and the transfer of scientific and technical information, to assess the extent to which the National Aeronautics and Space Administration is carrying out its activities in compliance with Federal export control laws and with paragraph (2).

(b) NATIONAL INTERESTS.—Before entering into an obligation described in subsection (a), the Administrator shall consider the national interests of the United States described in section 2(6).

SEC. 127. TRANS-HAB.

(a) REPLACEMENT STRUCTURE.—No funds authorized by this Act shall be obligated for the definition, design, procurement, or development of an inflatable space structure to replace any International Space Station components scheduled for launch in the Assembly Sequence adopted by the National Aeronautics and Space Administration in June 1999.

(b) EXCEPTION.—Notwithstanding subsection (a), nothing in this Act shall preclude the National Aeronautics and Space Administration from leasing or otherwise using a commercially provided inflatable habitation module, if such module would—

(1) cost the same or less, including any necessary modifications to other hardware or operating expenses, than the remain-

ing cost of completing and attaching the baseline habitation module;

(2) impose no delays to the Space Station Assembly Sequence; and

(3) result in no increased safety risk.

(c) *REPORT.*—Notwithstanding subsection (a), the National Aeronautics and Space Administration shall report to the Congress by April 1, 2001, on its findings and recommendations on substituting any inflatable habitation module, or other inflatable structures, for one of the elements included in the Space Station Assembly Sequence adopted in June 1999.

SEC. 128. CONSOLIDATED SPACE OPERATIONS CONTRACT.

No funds authorized by this Act shall be used to create a Government-owned corporation to perform the functions that are the subject of the Consolidated Space Operations Contract.

TITLE II—INTERNATIONAL SPACE STATION

SEC. 201. INTERNATIONAL SPACE STATION CONTINGENCY PLAN.

(a) *BIMONTHLY REPORTING ON RUSSIAN STATUS.*—Not later than the first day of the first month beginning more than 60 days after the date of the enactment of this Act, and not later than the first day of every second month thereafter until October 1, 2006, the Administrator shall report to Congress whether or not the Russians have performed work expected of them and necessary to complete the International Space Station. Each such report shall also include a statement of the Administrator's judgment concerning Russia's ability to perform work anticipated and required to complete the International Space Station before the next report under this subsection.

(b) *DECISION ON RUSSIAN CRITICAL PATH ITEMS.*—The President shall notify Congress within 90 days after the date of the enactment of this Act of the decision on whether or not to proceed with permanent replacement of the Russian Service Module, other Russian elements in the critical path of the International Space Station, or Russian launch services. Such notification shall include the reasons and justifications for the decision and the costs associated with the decision. Such decision shall include a judgment of when all elements identified in Revision E assembly sequence as of June 1999 will be in orbit and operational. If the President decides to proceed with a permanent replacement for the Russian Service Module or any other Russian element in the critical path or Russian launch service, the President shall notify Congress of the reasons and the justification for the decision to proceed with the permanent replacement, and the costs associated with the decision.

(c) *ASSURANCES.*—The United States shall seek assurances from the Russian Government that it places a higher priority on fulfilling its commitments to the International Space Station than it places on extending the life of the Mir Space Station, including assurances that Russia will not utilize assets allocated by Russia to the International Space Station for other purposes, including extending the life of Mir.

(d) *EQUITABLE UTILIZATION.*—In the event that any International Partner in the International Space Station Program willfully violates any of its commitments or agreements for the provision of agreed-upon Space Station-related hardware or related goods or

services, the Administrator should, in a manner consistent with relevant international agreements, seek a commensurate reduction in the utilization rights of that Partner until such time as the violated commitments or agreements have been fulfilled.

(e) *OPERATION COSTS.*—The Administrator shall, in a manner consistent with relevant international agreements, seek to reduce the National Aeronautics and Space Administration's share of International Space Station common operating costs, based upon any additional capabilities provided to the International Space Station through the National Aeronautics and Space Administration's Russian Program Assurance activities.

SEC. 202. COST LIMITATION FOR THE INTERNATIONAL SPACE STATION.

(a) *LIMITATION OF COSTS.*—

(1) *IN GENERAL.*—Except as provided in subsections (c) and (d), the total amount obligated by the National Aeronautics and Space Administration for—

(A) costs of the International Space Station may not exceed \$25,000,000,000; and

(B) space shuttle launch costs in connection with the assembly of the International Space Station may not exceed \$17,700,000,000.

(2) *CALCULATION OF LAUNCH COSTS.*—For purposes of paragraph (1)(B)—

(A) not more than \$380,000,000 in costs for any single space shuttle launch shall be taken into account; and

(B) if the space shuttle launch costs taken into account for any single space shuttle launch are less than \$380,000,000, then the Administrator shall arrange for a verification, by the General Accounting Office, of the accounting used to determine those costs and shall submit that verification to the Congress within 60 days after the date on which the next budget request is transmitted to the Congress.

(b) *COSTS TO WHICH LIMITATION APPLIES.*—

(1) *DEVELOPMENT COSTS.*—The limitation imposed by subsection (a)(1)(A) does not apply to funding for operations, research, or crew return activities subsequent to substantial completion of the International Space Station.

(2) *LAUNCH COSTS.*—The limitation imposed by subsection (a)(1)(B) does not apply—

(A) to space shuttle launch costs in connection with operations, research, or crew return activities subsequent to substantial completion of the International Space Station;

(B) to space shuttle launch costs in connection with a launch for a mission on which at least 75 percent of the shuttle payload by mass is devoted to research; nor

(C) to any additional costs incurred in ensuring or enhancing the safety and reliability of the space shuttle.

(3) *SUBSTANTIAL COMPLETION.*—For purposes of this subsection, the International Space Station is considered to be substantially completed when the development costs comprise 5 percent or less of the total International Space Station costs for the fiscal year.

(c) *NOTICE OF CHANGES TO SPACE STATION COSTS.*—The Administrator shall provide with each annual budget request a written notice and analysis of any changes under subsection (d) to the amounts set forth in subsection (a) to the Senate Committees on Appropriations and on Commerce, Science, and Transportation and to the House of Representatives Committees on Appropriations and on Science. In addition, such notice may be provided at other times, as deemed necessary by the Administrator. The written notice shall include—

(1) an explanation of the basis for the change, including the costs associated with the change and the expected benefit to the program to be derived from the change;

(2) an analysis of the impact on the assembly schedule and annual funding estimates of not receiving the requested increases; and

(3) an explanation of the reasons that such a change was not anticipated in previous program budgets.

(d) *FUNDING FOR CONTINGENCIES.*—

(1) *NOTICE REQUIRED.*—If funding in excess of the limitation provided for in subsection (a) is required to address the contingencies described in paragraph (2), then the Administrator shall provide the written notice required by subsection (c). In the case of funding described in paragraph (3)(A), such notice shall be required prior to obligating any of the funding. In the case of funding described in paragraph (3)(B), such notice shall be required within 15 days after making a decision to implement a change that increases the space shuttle launch costs in connection with the assembly of the International Space Station.

(2) *CONTINGENCIES.*—The contingencies referred to in paragraph (1) are the following:

(A) The lack of performance or the termination of participation of any of the International countries party to the Intergovernmental Agreement.

(B) The loss or failure of a United States-provided element during launch or on-orbit.

(C) On-orbit assembly problems.

(D) New technologies or training to improve safety on the International Space Station.

(E) The need to launch a space shuttle to ensure the safety of the crew or to maintain the integrity of the station.

(3) *AMOUNTS.*—The total amount obligated by National Aeronautics and Space Administration to address the contingencies described in paragraph (2) is limited to—

(A) \$5,000,000,000 for the International Space Station; and

(B) \$3,540,000,000 for the space shuttle launch costs in connection with the assembly of the International Space Station.

(e) *REPORTING AND REVIEW.*—

(1) *IDENTIFICATION OF COSTS.*—

(A) *SPACE SHUTTLE.*—As part of the overall space shuttle program budget request for each fiscal year, the Administrator shall identify separately—

(i) the amounts of the requested funding that are to be used for completion of the assembly of the International Space Station; and

(ii) any shuttle research mission described in subsection (b)(2).

(B) INTERNATIONAL SPACE STATION.—As part of the overall International Space Station budget request for each fiscal year, the Administrator shall identify the amount to be used for development of the International Space Station.

(2) ACCOUNTING FOR COST LIMITATIONS.—As part of the annual budget request to the Congress, the Administrator shall account for the cost limitations imposed by subsection (a).

(3) VERIFICATION OF ACCOUNTING.—The Administrator shall arrange for a verification, by the General Accounting Office, of the accounting submitted to the Congress within 60 days after the date on which the budget request is transmitted to the Congress.

(4) INSPECTOR GENERAL.—Within 60 days after the Administrator provides a notice and analysis to the Congress under subsection (c), the Inspector General of the National Aeronautics and Space Administration shall review the notice and analysis and report the results of the review to the committees to which the notice and analysis were provided.

SEC. 203. RESEARCH ON INTERNATIONAL SPACE STATION.

(a) STUDY.—The Administrator shall enter into a contract with the National Research Council and the National Academy of Public Administration to jointly conduct a study of the status of life and microgravity research as it relates to the International Space Station. The study shall include—

(1) an assessment of the United States scientific community's readiness to use the International Space Station for life and microgravity research;

(2) an assessment of the current and projected factors limiting the United States scientific community's ability to maximize the research potential of the International Space Station, including, but not limited to, the past and present availability of resources in the life and microgravity research accounts within the Office of Human Spaceflight and the Office of Life and Microgravity Sciences and Applications and the past, present, and projected access to space of the scientific community; and

(3) recommendations for improving the United States scientific community's ability to maximize the research potential of the International Space Station, including an assessment of the relative costs and benefits of—

(A) dedicating an annual mission of the Space Shuttle to life and microgravity research during assembly of the International Space Station; and

(B) maintaining the schedule for assembly in place at the time of the enactment.

(b) REPORT.—Not later than 1 year after the date of the enactment of this Act, the Administrator shall transmit to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report on the results of the study conducted under this section.

SEC. 204. SPACE STATION COMMERCIAL DEVELOPMENT DEMONSTRATION PROGRAM.

Section 434 of the Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 2000 is amended by striking “2004,” each place it appears and inserting “2002,”.

SEC. 205. SPACE STATION MANAGEMENT.

(a) **RESEARCH UTILIZATION AND COMMERCIALIZATION MANAGEMENT ACTIVITIES.**—*The Administrator of the National Aeronautics and Space Administration shall enter into an agreement with a non-government organization to conduct research utilization and commercialization management activities of the International Space Station subsequent to substantial completion as defined in section 202(b)(3). The agreement may not take effect less than 120 days after the implementation plan for the agreement is submitted to the Congress under subsection (b).*

(b) **IMPLEMENTATION PLAN.**—*Not later than September 30, 2001, the Administrator shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science of the House of Representatives an implementation plan to incorporate the use of a non-government organization for the International Space Station. The implementation plan shall include—*

- (1) a description of the respective roles and responsibilities of the Administration and the non-government organization;*
- (2) a proposed structure for the non-government organization;*
- (3) a statement of the resources required;*
- (4) a schedule for the transition of responsibilities; and*
- (5) a statement of the duration of the agreement.*

TITLE III—MISCELLANEOUS

SEC. 301. REQUIREMENT FOR INDEPENDENT COST ANALYSIS.

(a) **REQUIREMENT.**—*Before any funds may be obligated for Phase B of a project that is projected to cost more than \$150,000,000 in total project costs, the Chief Financial Officer for the National Aeronautics and Space Administration shall conduct an independent life-cycle cost analysis of such project and shall report the results to Congress. In developing cost accounting and reporting standards for carrying out this section, the Chief Financial Officer shall, to the extent practicable and consistent with other laws, solicit the advice of expertise outside of the National Aeronautics and Space Administration.*

(b) **DEFINITION.**—*For purposes of this section, the term “Phase B” means the latter stages of project formulation, during which the final definition of a project is carried out and before project implementation (which includes the Design, Development, and Operations Phases) begins.*

SEC. 302. NATIONAL AERONAUTICS AND SPACE ACT OF 1958 AMENDMENTS.

(a) **DECLARATION OF POLICY AND PURPOSE.**—*Section 102 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2451) is amended—*

(1) by striking subsection (f) and redesignating subsections (g) and (h) as subsections (f) and (g), respectively; and

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

(b) **REPORTS TO THE CONGRESS.**—Section 206(a) of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2476(a)) is amended—

(1) by striking “January” and inserting in lieu thereof “May”; and

(2) by striking “calendar” and inserting in lieu thereof “fiscal”.

SEC. 303. COMMERCIAL SPACE GOODS AND SERVICES.

It is the sense of Congress that the National Aeronautics and Space Administration shall purchase commercially available space goods and services to the fullest extent feasible and shall not conduct activities with commercial applications that preclude or deter commercial space activities except for reasons of national security or public safety. A space good or service shall be deemed commercially available if it is offered by a commercial provider, or if it could be supplied by a commercial provider in response to a Government procurement request. For purposes of this section, a purchase is feasible if it meets mission requirements in a cost-effective manner.

SEC. 304. COST EFFECTIVENESS CALCULATIONS.

Except as otherwise required by law, in calculating the cost effectiveness of the cost of the National Aeronautics and Space Administration engaging in an activity as compared to a commercial provider, the Administrator shall compare the cost of the National Aeronautics and Space Administration engaging in the activity using full cost accounting principles with the price the commercial provider will charge for such activity.

SEC. 305. FOREIGN CONTRACT LIMITATION.

The National Aeronautics and Space Administration shall not enter into any agreement or contract with a foreign government that grants the foreign government the right to recover profit in the event that the agreement or contract is terminated.

SEC. 306. AUTHORITY TO REDUCE OR SUSPEND CONTRACT PAYMENTS BASED ON SUBSTANTIAL EVIDENCE OF FRAUD.

Section 2307(i)(8) of title 10, United States Code, is amended by striking “and (4)” and inserting in lieu thereof “(4), and (6)”.

SEC. 307. SPACE SHUTTLE UPGRADE STUDY.

(a) **STUDY.**—*The Administrator shall enter into appropriate arrangements for the conduct of an independent study to reassess the priority of all Space Shuttle upgrades which are under consideration by the National Aeronautics and Space Administration but for which substantial development costs have not been incurred.*

(b) **PRIORITIES.**—*The study described in subsection (a) shall establish relative priorities of the upgrades within each of the following categories:*

(1) *Upgrades that are safety related.*

(2) *Upgrades that may have functional or technological applicability to reusable launch vehicles.*

(3) Upgrades that have a payback period within the next 12 years.

(c) **COMPLETION DATE.**—The results of the study described in subsection (a) shall be transmitted to the Congress not later than 180 days after the date of the enactment of this Act.

SEC. 308. AERO-SPACE TRANSPORTATION TECHNOLOGY INTEGRATION.

(a) **INTEGRATION PLAN.**—The Administrator shall develop a plan for the integration of research, development, and experimental demonstration activities in the aeronautics transportation technology and space transportation technology areas where appropriate. The plan shall ensure that integration is accomplished without losing unique capabilities which support the National Aeronautics and Space Administration's defined missions. The plan shall also include appropriate strategies for using aeronautics centers in integration efforts.

(b) **REPORTS TO CONGRESS.**—Not later than 90 days after the date of the enactment of this Act, the Administrator shall transmit to the Congress a report containing the plan developed under subsection (a). The Administrator shall transmit to the Congress annually thereafter for 5 years a report on progress in achieving such plan, to be transmitted with the annual budget request.

SEC. 309. DEFINITIONS OF COMMERCIAL SPACE POLICY TERMS.

It is the sense of the Congress that the Administrator should ensure, to the extent practicable, that the usage of terminology in National Aeronautics and Space Administration policies and programs with respect to space activities is consistent with the following definitions:

(1) The term "commercialization" means actions or policies which promote or facilitate the private creation or expansion of commercial markets for privately developed and privately provided space goods and services, including privatized space activities.

(2) The term "commercial purchase" means a purchase by the Federal Government of space goods and services at a market price from a private entity which has invested private resources to meet commercial requirements.

(3) The term "commercial use of Federal assets" means the use of Federal assets by a private entity to deliver services to commercial customers, with or without putting private capital at risk.

(4) The term "contract consolidation" means the combining of two or more Government service contracts for related space activities into one larger Government service contract.

(5) The term "privatization" means the process of transferring—

(A) control and ownership of Federal space-related assets, along with the responsibility for operating, maintaining, and upgrading those assets, to the private sector; or

(B) control and responsibility for space-related functions from the Federal Government to the private sector.

SEC. 310. EXTERNAL TANK OPPORTUNITIES STUDY.

(a) **APPLICATIONS.**—The Administrator shall enter into appropriate arrangements for an independent study to identify, and

evaluate the potential benefits and costs of, the broadest possible range of commercial and scientific applications which are enabled by the launch of Space Shuttle external tanks into Earth orbit and retention in space, including—

(1) the use of privately owned external tanks as a venue for commercial advertising on the ground, during ascent, and in Earth orbit, except that such study shall not consider advertising that while in orbit is observable from the ground with the unaided human eye;

(2) the use of external tanks to achieve scientific or technology demonstration missions in Earth orbit, on the Moon, or elsewhere in space; and

(3) the use of external tanks as low-cost infrastructure in Earth orbit or on the Moon, including as an augmentation to the International Space Station.

A final report on the results of such study shall be delivered to the Congress not later than 90 days after the date of the enactment of this Act. Such report shall include recommendations as to Government and industry-funded improvements to the external tank which would maximize its cost-effectiveness for the scientific and commercial applications identified.

(b) **REQUIRED IMPROVEMENTS.**—The Administrator shall conduct an internal agency study, based on the conclusions of the study required by subsection (a), of what—

(1) improvements to the current Space Shuttle external tank; and

(2) other in-space transportation or infrastructure capability developments,

would be required for the safe and economical use of the Space Shuttle external tank for any or all of the applications identified by the study required by subsection (a), a report on which shall be delivered to Congress not later than 45 days after receipt of the final report required by subsection (a).

(c) **CHANGES IN LAW OR POLICY.**—Upon receipt of the final report required by subsection (a), the Administrator shall solicit comment from industry on what, if any, changes in law or policy would be required to achieve the applications identified in that final report. Not later than 90 days after receipt of such final report, the Administrator shall transmit to the Congress the comments received along with the recommendations of the Administrator as to changes in law or policy that may be required for those purposes.

SEC. 311. NOTICE.

(a) **NOTICE OF REPROGRAMMING.**—If any funds authorized by this Act are subject to a reprogramming action that requires notice to be provided to the Appropriations Committees of the House of Representatives and the Senate, notice of such action shall concurrently be provided to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

(b) **NOTICE OF REORGANIZATION.**—The Administrator shall provide notice to the Committees on Science and Appropriations of the House of Representatives, and the Committees on Commerce, Science, and Transportation and Appropriations of the Senate, not later than 30 days before any major reorganization of any program,

project, or activity of the National Aeronautics and Space Administration.

SEC. 312. UNITARY WIND TUNNEL PLAN ACT OF 1949 AMENDMENTS.

The Unitary Wind Tunnel Plan Act of 1949 is amended—

(1) *in section 101 (50 U.S.C. 511) by striking “transsonic and supersonic” and inserting “transsonic, supersonic, and hypersonic”; and*

(2) *in section 103 (50 U.S.C. 513)—*

(A) *by striking “laboratories” in subsection (a) and inserting “laboratories and centers”;*

(B) *by striking “supersonic” in subsection (a) and inserting “transsonic, supersonic, and hypersonic”; and*

(C) *by striking “laboratory” in subsection (c) and inserting “facility”.*

SEC. 313. INNOVATIVE TECHNOLOGIES FOR HUMAN SPACE FLIGHT.

(a) *ESTABLISHMENT OF PROGRAM.—In order to promote a “faster, cheaper, better” approach to the human exploration and development of space, the Administrator shall establish a Human Space Flight Innovative Technologies program of ground-based and space-based research and development in innovative technologies. The program shall be part of the Technology and Commercialization program.*

(b) *AWARDS.—At least 75 percent of the amount appropriated for Technology and Commercialization under section 101(b)(4) for any fiscal year shall be awarded through broadly distributed announcements of opportunity that solicit proposals from educational institutions, industry, nonprofit institutions, National Aeronautics and Space Administration Centers, the Jet Propulsion Laboratory, other Federal agencies, and other interested organizations, and that allow partnerships among any combination of those entities, with evaluation, prioritization, and recommendations made by external peer review panels.*

(c) *PLAN.—The Administrator shall provide to the Committee on Science of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate, not later than December 1, 2000, a plan to implement the program established under subsection (a).*

SEC. 314. LIFE IN THE UNIVERSE.

(a) *REVIEW.—The Administrator shall enter into appropriate arrangements with the National Academy of Sciences for the conduct of a review of—*

(1) *international efforts to determine the extent of life in the universe; and*

(2) *enhancements that can be made to the National Aeronautics and Space Administration’s efforts to determine the extent of life in the universe.*

(b) *ELEMENTS.—The review required by subsection (a) shall include—*

(1) *an assessment of the direction of the National Aeronautics and Space Administration’s astrobiology initiatives within the Origins program;*

(2) *an assessment of the direction of other initiatives carried out by entities other than the National Aeronautics and Space Administration to determine the extent of life in the uni-*

verse, including other Federal agencies, foreign space agencies, and private groups such as the Search for Extraterrestrial Intelligence Institute;

(3) recommendations about scientific and technological enhancements that could be made to the National Aeronautics and Space Administration's astrobiology initiatives to effectively utilize the initiatives of the scientific and technical communities; and

(4) recommendations for possible coordination or integration of National Aeronautics and Space Administration initiatives with initiatives of other entities described in paragraph (2).

(c) **REPORT TO CONGRESS.**—Not later than 20 months after the date of the enactment of this Act, the Administrator shall transmit to the Congress a report on the results of the review carried out under this section.

SEC. 315. CARBON CYCLE REMOTE SENSING APPLICATIONS RESEARCH.

(a) **CARBON CYCLE REMOTE SENSING APPLICATIONS RESEARCH PROGRAM.**—

(1) **IN GENERAL.**—The Administrator shall develop a carbon cycle remote sensing applications research program—

(A) to provide a comprehensive view of vegetation conditions;

(B) to assess and model agricultural carbon sequestration; and

(C) to encourage the development of commercial products, as appropriate.

(2) **USE OF CENTERS.**—The Administrator of the National Aeronautics and Space Administration shall use regional earth science application centers to conduct applications research under this section.

(3) **RESEARCHED AREAS.**—The areas that shall be the subjects of research conducted under this section include—

(A) the mapping of carbon-sequestering land use and land cover;

(B) the monitoring of changes in land cover and management;

(C) new approaches for the remote sensing of soil carbon; and

(D) region-scale carbon sequestration estimation.

(b) **AUTHORIZATION OF APPROPRIATIONS.**—There is authorized to be appropriated to carry out this section \$5,000,000 of funds authorized by section 102 for fiscal years 2001 through 2002.

SEC. 316. REMOTE SENSING FOR AGRICULTURAL AND RESOURCE MANAGEMENT.

(a) **INFORMATION DEVELOPMENT.**—The Administrator shall—

(1) consult with the Secretary of Agriculture to determine data product types that are of use to farmers which can be remotely sensed from air or space;

(2) consider useful commercial data products related to agriculture as identified by the focused research program between the National Aeronautics and Space Administration's Stennis Space Center and the Department of Agriculture; and

(3) *examine other data sources, including commercial sources, LightSAR, RADARSAT I, and RADARSAT II, which can provide domestic and international agricultural information relating to crop conditions, fertilization and irrigation needs, pest infiltration, soil conditions, projected food, feed, and fiber production, and other related subjects.*

(b) *PLAN.*—After performing the activities described in subsection (a) the Administrator shall, in consultation with the Secretary of Agriculture, develop a plan to inform farmers and other prospective users about the use and availability of remote sensing products that may assist with agricultural and forestry applications identified in subsection (a). The Administrator shall transmit such plan to the Congress not later than 180 days after the date of the enactment of this Act.

(c) *IMPLEMENTATION.*—Not later than 90 days after the plan has been transmitted under subsection (b), the Administrator shall implement the plan.

SEC. 317. 100TH ANNIVERSARY OF FLIGHT EDUCATIONAL INITIATIVE.

(a) *EDUCATIONAL INITIATIVE.*—In recognition of the 100th anniversary of the first powered flight, the Administrator, in coordination with the Secretary of Education, shall develop and provide for the distribution, for use in the 2001–2002 academic year and thereafter, of age-appropriate educational materials, for use at the kindergarten, elementary, and secondary levels, on the history of flight, the contribution of flight to global development in the 20th century, the practical benefits of aeronautics and space flight to society, the scientific and mathematical principles used in flight, and any other related topics the Administrator considers appropriate. The Administrator shall integrate into the educational materials plans for the development and flight of the Mars plane.

(b) *REPORT TO CONGRESS.*—Not later than October 1, 2000, the Administrator shall transmit a report to the Congress on activities undertaken pursuant to this section.

SEC. 318. INTERNET AVAILABILITY OF INFORMATION.

Upon the conclusion of the research under a research grant or award of \$50,000 or more made with funds authorized by this Act, the Administrator shall make available through the Internet home page of the National Aeronautics and Space Administration a brief summary of the results and importance of such research grant or award. Nothing in this section shall be construed to require or permit the release of any information prohibited by law or regulation from being released to the public.

SEC. 319. SENSE OF THE CONGRESS; REQUIREMENT REGARDING NOTICE.

(a) *PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS.*—In the case of any equipment or products that may be authorized to be purchased with financial assistance provided under this Act, it is the sense of the Congress that entities receiving such assistance should, in expending the assistance, purchase only American-made equipment and products.

(b) *NOTICE TO RECIPIENTS OF ASSISTANCE.*—In providing financial assistance under this Act, the Administrator shall provide to each recipient of the assistance a notice describing the statement made in subsection (a) by the Congress.

SEC. 320. ANTI-DRUG MESSAGE ON INTERNET SITES.

Not later than 90 days after the date of the enactment of this Act, the Administrator, in consultation with the Director of the Office of National Drug Control Policy, shall place anti-drug messages on Internet sites controlled by the National Aeronautics and Space Administration.

SEC. 321. ENHANCEMENT OF SCIENCE AND MATHEMATICS PROGRAMS.

(a) **DEFINITIONS.**—In this section:

(1) **EDUCATIONALLY USEFUL FEDERAL EQUIPMENT.**—The term “educationally useful Federal equipment” means computers and related peripheral tools and research equipment that is appropriate for use in schools.

(2) **SCHOOL.**—The term “school” means a public or private educational institution that serves any of the grades of kindergarten through grade 12.

(b) **SENSE OF CONGRESS.**—

(1) **IN GENERAL.**—It is the sense of Congress that the Administrator should, to the greatest extent practicable and in a manner consistent with applicable Federal law (including Executive Order No. 12999), donate educationally useful Federal equipment to schools in order to enhance the science and mathematics programs of those schools.

(2) **REPORTS.**—Not later than 1 year after the date of enactment of this Act, and annually thereafter, the Administrator shall prepare and submit to Congress a report describing any donations of educationally useful Federal equipment to schools made during the period covered by the report.

SEC. 322. SPACE ADVERTISING.

(a) **DEFINITION.**—Section 70102 of title 49, United States Code, is amended—

(1) by redesignating paragraphs (8) through (16) as paragraphs (9) through (17), respectively; and

(2) by inserting after paragraph (7) the following:

“(8) ‘obtrusive space advertising’ means advertising in outer space that is capable of being recognized by a human being on the surface of the Earth without the aid of a telescope or other technological device.”.

(b) **PROHIBITION.**—Chapter 701 of title 49, United States Code, is amended by inserting after section 70109 the following new section:

“§ 70109a. Space advertising

“(a) **LICENSING.**—Notwithstanding the provisions of this chapter or any other provision of law, the Secretary may not, for the launch of a payload containing any material to be used for the purposes of obtrusive space advertising—

“(1) issue or transfer a license under this chapter; or

“(2) waive the license requirements of this chapter.

“(b) **LAUNCHING.**—No holder of a license under this chapter may launch a payload containing any material to be used for purposes of obtrusive space advertising.

“(c) **COMMERCIAL SPACE ADVERTISING.**—Nothing in this section shall apply to nonobtrusive commercial space advertising, including advertising on—

- “(1) commercial space transportation vehicles;
- “(2) space infrastructure payloads;
- “(3) space launch facilities; and
- “(4) launch support facilities.”.

(c) **NEGOTIATION WITH FOREIGN LAUNCHING NATIONS.**—(1) *The President is requested to negotiate with foreign launching nations for the purpose of reaching 1 or more agreements that prohibit the use of outer space for obtrusive space advertising purposes.*

(2) *It is the sense of Congress that the President should take such action as is appropriate and feasible to enforce the terms of any agreement to prohibit the use of outer space for obtrusive space advertising purposes.*

(3) *As used in this subsection, the term “foreign launching nation” means a nation—*

(A) *that launches, or procures the launching of, a payload into outer space; or*

(B) *from the territory or facility of which a payload is launched into outer space.*

(d) **CLERICAL AMENDMENT.**—*The table of sections for chapter 701 is amended by inserting after the item relating to section 70109 the following:*

“70109a. Space advertising.”.

SEC. 323. AERONAUTICAL RESEARCH.

(a) **FLIGHT RESEARCH STUDY.**—

(1) **IN GENERAL.**—*Within 6 months after the date of the enactment of this Act, the Administrator shall provide to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science of the House of Representatives the results of an engineering study of the modifications necessary for the more effective use of the WB-57 flight research plan.*

(2) **CONTENTS OF STUDY.**—*The engineering study provided by the Administrator under paragraph (1) shall address at least the following issues:*

(A) *Replacement of autopilot.*

(B) *Replacement of landing gear or improved brake system.*

(C) *Upgrade of avionics.*

(D) *Upgrade of engines for higher flight regimes.*

(E) *Installation of winglets on aircraft wings.*

(F) *Research benefits to be derived from modifications of plane.*

(G) *Associated costs of each of the modifications.*

(b) **AIRCRAFT ICING RESEARCH PLAN.**—

(1) **IN GENERAL.**—*Within 90 days after the date of the enactment of this Act, the Administrator shall submit a plan to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science of the House of Representatives for aircraft icing research to be conducted over the 5-year period commencing on October 1, 2000.*

(2) **CONTENTS OF THE PLAN.**—*The aircraft icing research plan submitted by the Administrator under paragraph (1) shall include at least the following items:*

(A) *Research goals and objectives.*

(B) *Funding levels for each of the 5 fiscal years.*

(C) *Anticipated extent and nature of involvement in the research program by agencies, organizations, and companies, both domestic and foreign, other than the National Aeronautics and Space Administration.*

(D) *Anticipated resource requirements and locations of aircraft icing tunnel research and flight research for each of the 5 fiscal years.*

SEC. 324. INSURANCE, INDEMNIFICATION, AND CROSS-WAIVERS.

(a) *TECHNICAL AMENDMENT.—Title III of the National Aeronautics and Space Act of 1958 is amended—*

(1) *by redesignating sections 309 through 311 as sections 310 through 312, respectively; and*

(2) *by inserting “SEC. 309.” before “(a) IN GENERAL.—” in the undesignated section added by section 435 of the Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 2000.*

(b) *AMENDMENTS.—Section 309 of the National Aeronautics and Space Act of 1958 (as so designated by subsection (a)(2) of this section) is amended—*

(1) *in subsection (c)(1), by striking “departments, agencies, and related entities” and inserting “departments, agencies, and instrumentalities”;*

(2) *in subsection (c)(2), by adding at the end the following new subparagraph:*

“(D) WILLFUL MISCONDUCT.—A reciprocal waiver under paragraph (1) may not relieve the United States, the developer, the cooperating party, or the related entities of the developer or cooperating party, of liability for damage or loss resulting from willful misconduct.”; and

(3) *by adding at the end the following new subsection:*

“(f) TERMINATION.—

“(1) IN GENERAL.—The provisions of this section shall terminate on December 31, 2002, except that the Administrator may extend the termination date to a date not later than September 30, 2005, if the Administrator determines that such extension is in the interests of the United States.

“(2) EFFECT OF TERMINATION ON AGREEMENT.—The termination of this section shall not terminate or otherwise affect any cross-waiver agreement, insurance agreement, indemnification agreement, or other agreement entered into under this section, except as may be provided in that agreement.”.

SEC. 325. USE OF ABANDONED, UNDERUTILIZED, AND EXCESS BUILDINGS, GROUNDS, AND FACILITIES.

(a) *IN GENERAL.—In any case in which the Administrator considers the purchase, lease, or expansion of a facility to meet requirements of the National Aeronautics and Space Administration, the Administrator shall consider whether those requirements could be met by the use of one of the following:*

(1) *Abandoned or underutilized buildings, grounds, and facilities in depressed communities that can be converted to National Aeronautics and Space Administration usage at a reasonable cost, as determined by the Administrator.*

(2) Any military installation that is closed or being closed, or any facility at such an installation.

(3) Any other facility or part of a facility that the Administrator determines to be—

(A) owned or leased by the United States for the use of another agency of the Federal Government; and

(B) considered by the head of the agency involved—

(i) to be excess to the needs of that agency; or

(ii) to be underutilized by that agency.

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

And the Senate agree to the same.

F. JAMES SENSENBRENNER, Jr.,
DANA ROHRABACHER,
DAVE WELDON,
RALPH M. HALL,
BART GORDON,

Managers on the Part of the House.

JOHN MCCAIN,
TED STEVENS,
BILL FRIST,
FRITZ HOLLINGS,
JOHN BREAUX,

Managers on the Part of the Senate.

JOINT EXPLANATORY STATEMENT OF THE COMMITTEE OF CONFERENCE

The managers on the part of the House and the Senate at the conference on the disagreeing votes of the two Houses on the amendment of the Senate to the bill (H.R. 1654), to authorize appropriations for the National Aeronautics and Space Administration for fiscal years 2000, 2001, and 2002, and for other purposes, submit the following joint statement to the House and the Senate in explanation of the effect of the action agreed upon by the managers and recommended in the accompanying conference report:

The Senate amendment struck all of the House bill after the enacting clause and inserted a substitute text.

The House recedes from its disagreement to the amendment of the Senate with an amendment that is a substitute for the House bill and the Senate amendment. The differences between the House bill, the Senate amendment, and the substitute agreed to in conference are noted below, except for clerical corrections, conforming changes made necessary by agreements reached by the conferees, and minor drafting and clerical changes.

The House and Senate authorization bills were passed in 1999 and based on the fiscal year (FY) 2000 budget request. Both bills authorized funding for FY 2000 through FY 2002 based on the budget runouts provided with the President's FY 2000 request for NASA funding. However, conference discussions were still underway when the President unveiled his FY 2001 budget request. The FY 2001 budget request differed significantly from that projected in FY 2000. The FY 2001 budget contained significant increases in Space Science and Aerospace Technology and minor reductions in Human Spaceflight and Earth Science, reflecting that the International Space Station (ISS) and the first phase of the EOS program had passed the peak of their development costs. Consequently, the conferees adjusted the conference text to reflect the new information contained in the FY 2001 request.

TITLE I. AUTHORIZATION OF APPROPRIATIONS

(Subtitle A)

Human Spaceflight. The President requested \$5,499,900,000 for Human Spaceflight in FY 2001. Conferees agreed to \$5,499,900,000 for Human Spaceflight in FY 2001. The conferees provided funding for International Space Station, the Space Shuttle, Payload/ELV Support and Investments and Support at the level of the President's request. Concerned about past Administration cuts to the International Space Station research activities, the conferees adopted a House provision setting aside \$455,400,000 of the amount authorized for Space Station research and assigning

the Office of Life and Microgravity Sciences and Applications responsibility for administering those funds.

The Senate-passed authorization bill excluded \$200 million in funding in the Space Station funding account for the Propulsion Module due to lack of specific plans. Conferees continue to be concerned given the recent significant cost increase of at least \$150 million and schedule slippages of 18 months for the module. These cost increases and delays are even more alarming given the project is still in its early developmental stages. The conferees are also concerned about the lack of specific future plans for the Propulsion Module at this point.

The President requested \$5,387,600,000 for Human Spaceflight in FY 2002. Conferees agreed to authorize \$5,387,600,000 for Human Spaceflight in FY 2002. The conferees provided funding for International Space Station, the Space Shuttle, Payload/ELV Support and Investments and Support at the level of the President's request. Concerned about past Administration cuts to the International Space Station research activities, the conferees adopted a House provision setting aside \$451,600,000 of the amount authorized for Space Station research and assigning the Office of Life and Microgravity Sciences and Applications responsibility for administering those funds. The conferees also agreed to authorize \$20,000,000 for Technology and Commercialization in FY 2001 and FY 2002.

Science, Aeronautics, and Technology. The President requested \$2,398,800,000 for space science in FY 2001. Conferees agreed to authorize \$2,417,800,000 for Space Science in FY 2001, \$19,000,000 more than the President requested and \$225,015,000 more than the FY 2000 appropriated level. The President requested \$2,606,400,000 for space science in FY 2002. Conferees agreed to authorize \$2,630,400,000 in FY 2002, \$24,000,000 more than the Presidential request. Conferees also agreed to: House language stating that of the total authorized for Space Science \$10,500,000 shall be for the Near Earth Object Survey in FY 2001 and FY 2002; \$523,601,000 shall be for the Research Program in FY 2001 and \$566,700,000 shall be for the Research Program in FY 2002; \$12,000,000 shall be for Space Solar Power technology in FY 2001 and FY 2002; and \$5,000,000 shall be for Space Science Data Buys in FY 2002. Despite the loss of both Mars 1998 missions, the conferees remain committed to exploring Mars and support the President's decision to increase the Mars program's baseline funding by \$347,400,000 over the period FY 2001 through FY 2005 in his FY 2001 budget request. Moreover, the conferees continue to endorse NASA's faster, better, cheaper concept and believe that a greater number of small missions will do more to advance certain scientific goals than large missions launched just once every decade. Nevertheless, better definition of the concept is needed for proper and effective implementation.

The President requested \$302,400,000 for Life and Microgravity Science in FY 2001 and \$300,300,000 for FY 2002. The conferees are concerned that past cuts to Life and Microgravity research are impeding scientific progress and undermining the future readiness of the scientific community to fully utilize the ISS. The conferees agreed to authorize \$335,200,000 and \$344,000,000 for

Life and Microgravity research in FY 2001 and FY 2002, respectively. Together, these represent an increase of \$76,500,000, nearly 13% over the President's request for both years. Given NASA's development of non-invasive diagnostic capabilities in the life sciences, conferees adopted House language setting aside \$2,000,000 of the amount authorized for FY 2001 and FY 2002 for research and early detection systems for breast and ovarian cancer. Conferees also adopted Senate language setting aside \$2,000,000 of the amount authorized for FY 2001 and FY 2002 for clinical trials of islet transplantation technology for Type I diabetes patients developed as a result of past space flight activities. Finally, conferees adopted House language signaling that \$70,000,000 of funds authorized for FY 2001 and \$80,800,000 of funds authorized for FY 2002 may be used for research associated with the ISS. These amounts signify continuing Congressional commitment to restoring past cuts to the Life and Microgravity research budget and a desire to improve the role of the Life and Microgravity research community in planning Space Station research activities.

For Earth Science, the President requested \$1,405,800,000 in FY 2001 and \$1,332,500,000 in FY 2002. The House authorized \$1,413,300,000 and the Senate authorized \$1,502,873,000 for Earth Science in FY 2001. The House authorized \$1,365,300,000 and the Senate authorized \$1,547,959,000 for Earth Science in FY 2002. Conferees agreed to authorize \$1,430,800,000 and \$1,357,500,000 for earth science in FY 2001 and FY 2002 respectively. The House-passed bill terminated the Triana spacecraft. The Senate did not eliminate the program; the House receded to the Senate.

In Aerospace Technology, the President requested \$1,193,000,000 in FY 2001 and \$1,548,900,000 in FY 2002. Conferees agreed to authorize \$1,224,000,000 in FY 2001, \$31,000,000 more than the President requested, and \$1,574,900,000 in FY 2002, \$26,000,000 more than the President requested. In aeronautics, the conferees are concerned about the continuing decline in funding for aeronautics research over the last several years and agreed to authorize funding of \$36,000,000 in FY 2001 and FY 2002 for NASA's Quiet Aircraft Technology programs, \$70,000,000 in FY 2001 and FY 2002 for its Aviation Safety programs, and \$50,000,000 in FY 2001 and FY 2002 for its ultra-efficient engine technology program. The conferees reaffirm Congress' commitment to a strong NASA aeronautical R&D program, and believe that it will be necessary to make appropriate investments in the modernization of NASA's aeronautical research facilities to keep pace with the full range of current and emerging aeronautical R&D challenges. Conferees provided full funding for the Space Launch Initiative, singling out the Second Generation RLV Program for funding. Moreover, the conferees endorse the general approach and plan to preserve competition among technological concepts within the SLI as laid out by NASA in briefings and presentations to the respective authorizing committees. The investigation of multiple technological concepts could include examination of such concepts as Two-Stage-to-Orbit, Single-Stage-to-Orbit, Vertical-Takeoff-Vertical-Landing (for which potential military applications are envisioned by some observers), and air-launched systems, among others. The conferees further note that NASA's plan for "Alternative Access" to the International

Space Station is contained within the Space Launch Initiative budget profile and commend NASA for seeking means of reducing our dependence on the Space Shuttle and Russian Soyuz and Progress vehicles for access to ISS. The conferees believe it will be necessary to make appropriate investments in the modernization of NASA's rocket engine testing facilities to keep pace with the development of the Second Generation RLV program, particularly given NASA's plan to develop some air-breathing engine technologies.

The President requested \$100,000,000 for Academic Programs in FY 2001 and FY 2002, a \$41,300,000 reduction from the FY 2000 funding appropriated by Congress. The House passed bill provided \$128,600,000 in FY 2001 and \$130,600,000 in FY 2002. The Senate bill provided \$133,900,000 and \$137,917,000 in FY 2001 and FY 2002 respectively. Conferees recommended authorizing \$141,300,000 for FY 2001 and \$141,300,000 for FY 2002. Within those authorizations, \$11,800,000 in FY 2001 shall be for Teacher/Faculty Preparation and Enhancement Programs and \$11,800,000 in FY 2001 shall be for the Experimental Program to Stimulate Competitive Research. Conferees authorized both programs at the level of \$12,500,000 in FY 2002. The conferees also agreed that \$28,000,000 of the funds authorized shall be for Space Grant Colleges in both FY 2001 and FY 2002. Finally, the Conferees agreed that \$54,000,000 in both FY 2001 and FY 2002 shall be for minority university research and education, including \$35,900,000 for Historically Black Colleges and Universities.

Mission Support, NASA Inspector General, & Total Authorization. In Mission Support, the conferees recommended funding the President's request of \$2,584,000,000 in FY 2001 and \$2,666,200,000 in FY 2002. Conferees also agreed to authorize \$20,000,000 for the NASA Inspector General in FY 2000, \$22,000,000 in FY 2001 and \$22,700,000 in FY 2002 as requested by the President.

The conferees authorized \$13,600,800,000 for NASA in FY 2000, reflecting the FY 2000 appropriations and including \$5,487,900,000 for Human Spaceflight, \$5,580,900,000 for Science, Aeronautics and Technology, \$2,512,000,000 for Mission Support, and \$20,000,000 for the NASA Inspector General. The total amount of funding authorized for NASA is \$14,184,400,000 in FY 2001, which is \$149,100,000 more than the President requested. The total amount authorized for FY 2002 is \$14,625,400,000, which is \$160,000,000 more than the President's outyear budget projections.

The conferees have been concerned about the need to ensure that NASA's personnel and facilities will be able to support a robust and safe space and aeronautics program over the next decade and beyond. In particular, the conferees note the high portion of NASA personnel that are at, or near, the age for retirement eligibility. In addition, the conferees note the importance of ensuring the continued safety of workers and property at NASA's facilities. Therefore, the conferees expect the Administrator to report to Congress by April 1, 2001 on NASA's plans and anticipated resource requirements for (1) ensuring that critical technical and managerial skills are maintained throughout the space agency, including plans for hiring new personnel as appropriate; and (2) plans for in-

vesting in the maintenance and upgrading of facilities and equipment to ensure the safety of both workers and property.

Policy provisions (Subtitle B)

The House bill contained Section 125, authorizing \$50,000,000 in FY 2001 and FY 2002 for Earth Science data purchases. The House sought to create a mechanism by which scientists could exploit for scientific purposes the hundreds of millions of dollars in private investment in remote sensing capabilities. Believing that a market is the most efficient way of allocating limited resources, the House sought to create competition among data providers to meet scientist's needs, thereby creating pressures that would result in falling prices and increased quality in the long term. Moreover, by directly authorizing scientists to procure data, the House intended to place greater decision-making authority directly in the hands of principal investigators studying the Earth system. The Senate bill contained no data purchase program, so the conferees agreed to split the difference by authorizing a \$25 million program. In order to fund that activity in a manner that does not disrupt the ongoing Earth Science programs, the conferees have augmented the funding for Earth Science by an equivalent amount in both FY 2001 and FY 2002. The conferees expect the Administrator to report to the Congress by April 1, 2001 on NASA's long-term plan to promote scientific applications of U.S. commercial remote sensing capabilities through the purchase of data, development of applications, and collaboration with industry, research universities, and other government agencies.

Section 126 was modified during House consideration of H.R. 1654. The amendment, patterned after language adopted in the FY 2000 defense authorization bill, is intended to ensure that cooperative agreements between NASA and the People's Republic of China will not benefit, directly or indirectly, the People's Republic of China in its efforts to develop new space launch and ballistic missile capabilities. Subparagraph (a)(3) requires the NASA Inspector General to review NASA's compliance with existing export control obligations in consultation with the appropriate agencies of the federal government. For the purposes of this section, "appropriate agencies" refers generally to the U.S. national security, intelligence, export control, and counter-intelligence/law enforcement communities, including the Central Intelligence Agency, the Defense Intelligence Agency, and the Departments of State, Defense, Justice, and Commerce. The Senate bill contained no such provision. After adopting some clarifying language, the Senate receded to the House position.

Section 127 was contained in the House bill as introduced. The measure prohibits NASA from obligating funds to define, design, procure, or develop an inflatable space structure to replace any baseline ISS module. House conferees are particularly concerned about the potential for further perturbations to the baseline ISS design, which are likely to increase cost, technical risk, and schedule slips. Indeed, NASA was pursuing Transhab as an inflatable replacement for the already-built habitation module's pressure vessel at a time when early cost projections indicated Transhab would cost several tens of millions more to complete. The Senate bill con-

tained no such provision. After some discussion, the conferees agreed to modify the language to enable NASA to lease a privately defined, designed, and developed Transhab, provided that such a structure would not expose the U.S. government or the International Space Station to greater cost or schedule risks. It should be noted that the leasing option still precludes NASA from obligating funds for NASA to design, define (beyond the specification of requirements to be met by the commercially provided structure), or develop an inflatable structure to replace any baselined ISS module and that any lease payments may not total more than the remaining cost of the habitation module. Conferees gave NASA until April 1, 2001 to assess its options and report its recommendations on Transhab to the Congress. Such a report should include a cost-benefit analysis of the fiscal, programmatic, schedule, and technical risks of three options: (1) sticking with the baseline ISS design; (2) replacing the baselined habitation module with a commercially-developed and owned inflatable structure; or (3) looking to inflatable structures as potential enhancements to the ISS after assembly complete. The April 1 report should contain NASA's recommendation on whether or not to pursue a Transhab option.

TITLE II. INTERNATIONAL SPACE STATION

The Senate-passed bill contained a Title regarding the ISS which included sections for dealing with Russian contingencies and a total program funding cap. The House receded to the Senate position. The Senate-passed language was modified where appropriate and adopted.

Section 201. International Space Station contingency plan

Section 201 seeks to address concerns over the International Space Station created by Russia's difficulties in meeting its commitments to the International Space Station (ISS) partnership. The section requires a bimonthly status report on Russia's progress in meeting its obligations and a notification requirement in the event of a decision to replace any Russian elements in the critical path of the International Space Station or Russian launch services.

Conferees also adopted language directing the United States government to seek assurances from the Russian government that the latter places a higher priority on ISS than on its aging Mir space station and that ISS-dedicated resources will not be used to extend further Mir's orbital life. The conferees are especially concerned that earlier this year Russia diverted a Soyuz vehicle and two Progress vehicles that were originally intended to support ISS to instead service the Mir. Although the conferees applaud the successful launching of the Russian Service Module and note Russia's assurances that the diverted vehicles will be replaced, they want to stress the importance that Congress attaches to the need for Russia to fulfill all of its remaining commitments to the ISS.

The Intergovernmental Agreement (IGA), voluntarily signed by each participating country, delineates the roles and responsibilities of all ISS partners. The conferees maintain that in the event that any International Partner willfully violates any of its commitments or agreements for the provision of agreed-upon Space Station hardware or related goods or services, the NASA Administrator should,

in a manner consistent with relevant international agreements, seek a commensurate reduction in the utilization rights of that partner until such time as the violated commitments or agreements have been fulfilled. It is important to the conferees that the IGA remain equitable.

Finally, the conferees adopted language directing the Administrator to seek, in a manner consistent with relevant international agreements, to reduce NASA's share of ISS common operating costs as a result of any additional capabilities added to the ISS through NASA's Russian Program Assurance activities.

Section 202. Cost limitations for the International Space Station

Conferees have adopted language that would place a cost limitation on the International Space Station. The limitation would establish a limit of \$25 billion for the development of ISS and \$17.7 billion for the use of the Space Shuttle for the assembly of the Station until the point of substantial completion. Substantial completion has been defined as the point when development costs comprise 5 percent or less of the total ISS costs for the fiscal year. Conferees feel that at this point in the program, the majority of the activities are truly beyond the developmental phase of the project. The charge against the limitation of using the Shuttle shall not exceed \$380 million per launch. If the actual costs are less, verification and reporting requirements have been established. The Administrator of NASA is required to provide written notice and analysis of any changes to the limitations set forth on the Station and the Shuttle program.

Furthermore, an additional 20 percent (\$5 billion for ISS and \$3.54 billion for the Shuttle program) has been authorized to address contingencies identified within the cost limitation. Within the contingencies, the conferees have given NASA additional flexibility to address, through additional shuttle launches, urgent threats to crew safety or the integrity of the ISS. It is expected that these contingencies would provide NASA the necessary resources to address any urgent situation on the Station. The conferees want to emphasize the importance they attach to the safety of the Space Shuttle and ISS programs. Annual reporting and review requirements have also been identified and are to be included as part of the budget request for each fiscal year.

Section 203. Research on International Space Station

The conferees note with growing concern that the gaps between space-based life and microgravity research opportunities are growing. Consequently, the scientific disciplines associated with this research risk stagnating, creating the possibility that the scientific community will not be prepared to fully exploit the scientific potential of the space station. To address these concerns, Congress has, for several years, provided funding for a dedicated research flight aboard the Space Shuttle. As adopted in the House, H.R. 1654 contained language calling for a joint study by the National Research Council and the National Academy of Public Administration to review the readiness of the U.S. scientific community to use the space station, identify obstacles, and make recommendations to

ensure that the U.S. scientific community is able to fully exploit the space station.

Section 205. Space station research utilization and commercialization management

The conferees further note that as the International Space Station approaches full assembly, NASA must begin to focus on establishing an organizational infrastructure capable of ensuring that the International Space Station is fully and effectively utilized for scientific and engineering research. The conferees commend NASA for initiating a review of management structures by the National Research Council's Space Studies Board and Aeronautics and Space Engineering Board. The National Research Council recommended that "a consortium led by a research institution or group of institutions, governed by an independent board of directors, managed by a strong scientific director, and guided by an advisory process that is broadly representative of the research community" be charged with managing scientific activities aboard ISS. The conferees further note that NASA has had success with utilizing non-government organizations for the operation of major scientific research programs, such as the Hubble Space Telescope. Conferees are also concerned about commercialization opportunities aboard the Space Station. The non-government organization should ensure that equitable opportunities exist for industry to participate in activities. NASA should work with the Department of Commerce's Office of Space Commercialization to ensure that the selected non-government organization has adequate expertise in this area. The conferees therefore direct NASA to enter into an agreement with a non-government organization that will manage the research utilization and commercialization aspects of the International Space Station. The non-government organization should be selected competitively.

TITLE III. MISCELLANEOUS

The House-passed bill contained language that conferees adopted as Section 304, Cost Effectiveness Calculations. The provision is intended to improve the information available to policymakers by directing NASA to compare the price a private company would charge to provide a good or service with the total cost (using full-cost accounting principles) to NASA of performing the same function when performing cost-effectiveness calculations. The measure will help discourage the current practice of disguising a program's true cost to the American taxpayer by discounting the overhead and personnel costs associated with the program or mission and enable NASA to make rational decisions about out-sourcing certain activities. The conferees note that cost-effectiveness is not the only appropriate measure or factor to be considered when deciding whether to out-source certain activities. NASA's need to maintain a skilled workforce and its experience with certain kinds of technologies often will make it better-suited to perform a program or mission than a lower-cost contractor. In addition, the need to meet mission requirements and to avoid the assumption of unacceptable program risk also need to be weighed as part of the decision to out-source or not. Section 304 merely directs NASA to per-

form cost-effectiveness calculations in a certain way; it does not mandate that any decision be made based on that calculation.

Section 308 directs the Administrator to develop a plan for the integration of NASA's aeronautics and space transportation research and development activities. NASA has already administratively moved the two activities under one roof in reorganizing Code R. The conferees remain concerned that NASA's aeronautics activities have suffered from a lack of strategic direction and adequate funding in recent years. They note, however, that NASA's traditional aeronautics research activities have much to offer its space transportation activities and vice versa. NASA's Hyper-X vehicle, for example, has the potential to develop considerable information on high-speed flight through the atmosphere, while NASA's advanced cockpit development activities will have applications in the development of crewed space launch vehicles. It is hoped that the technology integration plan will lead NASA to determine the best means of fully exploiting the Space Launch Initiative funding wedge against those areas of research and development that will benefit both aeronautics and space transportation. Certainly, bringing the skills and knowledge resident in NASA's centers focused on aeronautics (Glenn Research Center, Langley Research Center, and the Dryden Flight Research Center) to bear on space transportation problems will benefit the Space Launch Initiative. As important, NASA will be better positioned to bring the lessons learned from the SLI investment into its aeronautics research programs. The conferees expect an integration plan to lay the groundwork for strengthening aeronautics research in the United States over the coming decade.

The Senate bill contained a section prohibiting obtrusive space advertising. The House bill contained no such provision and the House recedes to the Senate. In adopting this measure, which is section 322 in the conference report, the conferees are seeking to preserve a view of the sky that humanity has enjoyed since the beginning of human existence. Moreover, this section will help prevent new sources of interference with astronomy. The conferees note that obtrusive space advertising is defined as "advertising in outer space that is capable of being recognized by a human being on the surface of the Earth without the aid of a telescope or other technological device," i.e., that which is recognizable to the human eye. The provision does not apply to commercial space advertising practices that are common today, such as the placement of logos on commercial space launch vehicles and payloads, since these symbols are not visible to a terrestrial human eye without the aid of a camera or some other viewing mechanism once the vehicles or facilities are in orbit.

The Senate-passed bill included two provisions related to indemnification, insurance, and cross-waivers of liability. Senate Section 203 provided for cross-waivers of liability for U.S. ISS contractors, and Senate Section 313 expanded the experimental aerospace vehicle indemnification regime to include vehicles under development on or before July 31, 1999. Subsequent to Senate passage of H.R. 1654, the Congress combined these regimes under Section 431 of Public Law 106-74, which establishes broad authority for NASA to enter into cross-waivers of liability as part of a cooperative

agreement and to indemnify the developers of experimental aerospace vehicles for catastrophic losses. This regime is similar to the liability regime established for operational commercial launch vehicles under Title 49. However, the authority for operational vehicles periodically expires. The conferees agreed to a provision (Section 324) which sunsets NASA's broad authority on December 31, 2002. The Administration is permitted to extend the termination date to September 30, 2005 if the Administrator determines that such an extension is in the national interest.

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