# Union Calendar No. 231

108TH CONGRESS
1ST SESSION

# H. R. 2734

**[Report No. 108–405, Part I]**

To authorize appropriations for the civil aviation research and development projects and activities of the Federal Aviation Administration, and for other purposes.

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## IN THE HOUSE OF REPRESENTATIVES

JULY 15, 2003

Mr. FORBES (for himself, Mr. ROHRABACHER, Mr. LARSON of Connecticut, and Mr. GORDON) introduced the following bill; which was referred to the Committee on Science

DECEMBER 8, 2003

Additional sponsor: Mr. BOEHLERT

DECEMBER 8, 2003

Reported with an amendment and referred to the Committee on Transportation and Infrastructure for a period ending not later than December 8, 2003, for consideration of such provisions of the bill and amendment as fall within the jurisdiction of that committee pursuant to clause 1(q), rule X

[Strike out all after the enacting clause and insert the part printed in italic]

DECEMBER 8, 2003

The Committee on Transportation and Infrastructure discharged; committed to the Committee of the Whole House on the State of the Union and ordered to be printed

[For text of introduced bill, see copy of bill as introduced on July 15, 2003]

# A BILL

To authorize appropriations for the civil aviation research and development projects and activities of the Federal Aviation Administration, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

***SECTION 1. SHORT TITLE.***

*This Act may be cited as the "Federal Aviation Administration Research and Development Reauthorization Act".*

***SEC. 2. AUTHORIZATION OF APPROPRIATIONS.***

*Section 48102(a) of title 49, United States Code, is amended—*

*(1) by striking "to carry out sections 44504" and inserting "for conducting civil aviation research and development under sections 44504";*

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

*(3) by striking the period at the end of paragraph (8) and inserting a semicolon; and*

*(4) by adding at the end the following new paragraphs:*

*"(9) for fiscal year 2004, $371,317,000, including—*

*"(A) $190,000,000 for Research, Engineering, and Development, of which—*

*"(i) $65,000,000 shall be for Improving Aviation Safety;*

*"(ii) $24,000,000 shall be for Weather Safety Research;*

*"(iii) $15,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development Reauthorization Act for the Next Generation Air Traffic Management Research and Development program under such section 3;*

*"(iv) $27,500,000 shall be for Human Factors and Aeromedical Research;*

*"(v) $30,000,000 shall be for Environmental Research and Development, of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions;*

*"(vi) $7,000,000 shall be for Research Mission Support;*

*"(vii) $20,000,000 shall be for the Airport Cooperative Research Program; and*

*"(viii) $1,500,000 shall be for carrying out subsection (h) of this section;*

*"(B) $163,900,000 for Facilities and Equipment, of which—*

*"(i) $42,800,000 shall be for Advanced Technology Development and Prototyping;*

*"(ii) $30,300,000 shall be for Safe Flight 21; and*

*"(iii) $90,800,000 shall be for the Center for Advanced Aviation System Development; and*

*"(C) $17,417,000 for Airport Improvement Program Research and Development, of which—*

*"(i) $9,667,000 shall be for Airports Technology-Safety; and*

*"(ii) $7,750,000 shall be for Airports Technology-Efficiency;*

*"(10) for fiscal year 2005, $396,192,000, including—*

*"(A) $206,600,000 for Research, Engineering, and Development, of which—*

*"(i) $65,705,000 shall be for Improving Aviation Safety;*

*"(ii) $24,260,000 shall be for Weather Safety Research;*

*"(iii) $30,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development Reauthorization Act for the Next Generation Air Traffic Management Research and Development program under such section 3;*

*"(iv) $27,800,000 shall be for Human Factors and Aeromedical Research;*

*"(v) $30,109,000 shall be for Environmental Research and Development, of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions;*

*"(vi) $7,076,000 shall be for Research Mission Support;*

*"(vii) $20,000,000 shall be for the Airport Cooperative Research Program; and*

*"(viii) $1,650,000 shall be for carrying out subsection (h) of this section;*

*"(B) $172,000,000 for Facilities and Equipment, of which—*

*"(i) $43,300,000 shall be for Advanced Technology Development and Prototyping;*

*"(ii) $31,100,000 shall be for Safe Flight 21;*

*"(iii) $95,400,000 shall be for the Center for Advanced Aviation System Development; and*

*"(iv) $2,200,000 shall be for Free Flight Phase 2; and*

*"(C) $17,592,000 for Airport Improvement Program Research and Development, of which—*

*"(i) $9,764,000 shall be for Airports Technology-Safety; and*

*"(ii) $7,828,000 shall be for Airports Technology-Efficiency; and*

*"(11) for fiscal year 2006, $412,157,000, including—*

*"(A) $228,289,000 for Research, Engineering, and Development, of which—*

*"(i) $66,447,000 shall be for Improving Aviation Safety;*

*"(ii) $24,534,000 shall be for Weather Safety Research;*

*"(iii) $50,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development Reauthorization Act for the Next Generation Air Traffic Management Research and Development program under such section 3;*

*"(iv) $28,114,000 shall be for Human Factors and Aeromedical Research;*

*"(v) $30,223,000 shall be for Environmental Research and Development, of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions;*

*"(vi) $7,156,000 shall be for Research Mission Support;*

*"(vii) $20,000,000 shall be for the Airport Cooperation Research Program; and*

*"(viii) $1,815,000 shall be for carrying out subsection (h) of this section;*

*"(B) $166,100,000 for Facilities and Equipment, of which—*

*"(i) $42,200,000 shall be for Advanced Technology Development and Prototyping;*

*"(ii) $23,900,000 shall be for Safe Flight 21; and*

*"(iii) $100,000,000 shall be for the Center for Advanced Aviation System Development; and*

*"(C) $17,768,000 for Airport Improvement Program Research and Development, of which—*

*"(i) $9,862,000 shall be for Airports Technology-Safety; and*

*"(ii) $7,906,000 shall be for Airports Technology-Efficiency.".*

***SEC. 3. NEXT GENERATION AIR TRAFFIC MANAGEMENT RESEARCH AND DEVELOPMENT JOINT PROGRAM OFFICE.***

*(a) ESTABLISHMENT.—There is established a Next Generation Air Traffic Management Research and Development Joint Program Office (referred to in this section as the "Office"). The Office shall be jointly managed by the Federal Aviation Administration and the National Aeronautics and Space Administration. The objective of the Office shall be to carry out research and development of an*

*air traffic management system designed to meet national long-term aviation security, safety, and capacity needs.*

*(b) DIRECTOR AND DEPUTY DIRECTOR.—The Office shall be headed by a Director who shall be a senior executive of the Federal Aviation Administration. The Deputy Director shall be a senior executive of the National Aeronautics and Space Administration. Not later than 120 days after the date of enactment of this Act, the Administrators of the Federal Aviation Administration and the National Aeronautics and Space Administration shall jointly appoint the Director and Deputy Director of the Office.*

*(c) FUNCTIONS OF THE OFFICE.—The Office shall manage air traffic management research and development programs and initiatives within the Federal Aviation Administration and the National Aeronautics and Space Administration. The responsibilities of the Office shall include—*

*(1) establishing and managing a research and development program for a next generation air traffic management system capable of tripling capacity by the year 2025;*

*(2) entering into grants, cooperative agreements or contracts, or otherwise awarding or using funds appropriated for air traffic management research and development to carry out paragraph (1);*

*(3) utilizing the facilities, capabilities, expertise, and experience of Federal agencies, national laboratories, universities, nonprofit organizations, industrial entities, and other non-Federal entities to carry out paragraph (1);*

*(4) coordinating with the Department of Defense, the Department of Commerce, the Under Secretary for Science and Technology at the Department of Homeland Security, the National Security Council, the Department of Transportation, and other Federal agencies; and*

*(5) consulting with the private sector (including representatives of general aviation, commercial aviation, and the space industry), members of the public, and other interested parties on the program.*

*(d) NEXT GENERATION AIR TRAFFIC MANAGEMENT RESEARCH AND DEVELOPMENT PLAN.—*

*(1) REQUIREMENT.—The Office shall develop a research and development plan to carry out this section.*

*(2) GOAL.—The goal of the plan shall be to enable the creation of a National Airspace System architecture that would—*

*(A) be based on emerging ground-based and space-based communications, navigation, and surveillance technologies;*

*(B) increase the level of safety, security, and efficiency of the National Airspace System;*

*(C) integrate data and information flow effectively with other Federal agencies responsible for providing for our Nation's defense and security;*

*(D) be scalable to accommodate and encourage substantial growth in domestic and international transportation;*

*(E) anticipate and accommodate continuing technology upgrades;*

*(F) accommodate a wide range of aircraft operations, including airlines, air taxis, helicopters, general aviation, and unmanned aerial vehicles; and*

*(G) incorporate noise pollution reduction concerns.*

*(3) CONTENTS.—The plan shall describe, at a minimum—*

*(A) the most significant technical hurdles that stand in the way of achieving the goal described in paragraph (2);*

*(B) the research and development projects that will be carried out to overcome the technical hurdles described in subparagraph (A), including, for each project, whether it would be funded by the Federal Aviation Administration, the National Aeronautics and Space Administration, or both, and whether the work would be carried by the Federal Government, corporations, or universities, or a combination thereof;*

*(C) the annual anticipated cost of carrying out the plan;*

*(D) the technical milestones that will be used to evaluate progress in carrying out the plan; and*

*(E) how the research and development activities will be coordinated with other appropriate Federal agencies.*

*(e) REPORTS.—The Director of the Office shall transmit to the Committee on Science of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate—*

*(1) not later than 120 days after the date of enactment of this Act, the plan required under subsection (d); and*

*(2) annually at the time of the President's budget request, a report describing the progress in carrying out the plan required under subsection (d) and any changes to that plan.*

***SEC. 4. BUDGET DESIGNATION FOR RESEARCH AND DEVELOPMENT ACTIVITIES.***

*Section 48102 of title 49, United States Code, is amended by inserting after subsection (f) the following new subsection:*

*"(g) DESIGNATION OF ACTIVITIES.—(1) The amounts appropriated under subsection (a) are for the support of all research and development activities carried out by the Federal Aviation Administration that fall within the categories of basic research, applied research, and development, including the design and development of prototypes, in accordance with the classifications of the Office of Management and Budget Circular A–11 (Budget Formulation/Submission Process).*

*"(2) The Department of Transportation's annual budget request for the Federal Aviation Administration shall identify all of the activities carried out by the Administration within the categories of basic research, applied research, and development, as classified by the Office of Management and Budget Circular A–11. Each activity in the categories of basic research, applied research, and develop-*

*ment shall be identified regardless of the budget category in which it appears in the budget request.".*

***SEC. 5. AIRPORT COOPERATIVE RESEARCH PROGRAM.***

*Section 44511 of title 49, United States Code, is amended by adding at the end the following new subsection:*

*"(f) AIRPORT COOPERATIVE RESEARCH PROGRAM.—*

*"(1) ESTABLISHMENT.—The Secretary of Transportation shall establish an airport cooperative research program to—*

*"(A) identify problems that are shared by airport operating agencies and can be solved through applied research but that are not being adequately addressed by existing Federal research programs; and*

*"(B) fund research to address those problems.*

*"(2) GOVERNANCE.—The Secretary of Transportation shall appoint an independent governing board for the research program established under this subsection. The governing board shall be appointed from candidates nominated by national associations representing public airport operating agencies, airport executives, State aviation officials, and the scheduled airlines, and shall include representatives of appropriate Federal agencies. Section 14 of the Federal Ad-*

*visory Committee Act shall not apply to the governing board.*

*"(3) IMPLEMENTATION.—The Secretary of Transportation shall enter into an arrangement with the National Academy of Sciences to provide staff support to the governing board established under paragraph (2) and to carry out projects proposed by the governing board that the Secretary considers appropriate.".*

***SEC. 6. DEVELOPMENT OF ANALYTICAL TOOLS AND CERTIFICATION METHODS.***

*The Federal Aviation Administration shall conduct research to promote the development of analytical tools to improve existing certification methods and to reduce the overall costs for the certification of new products.*

***SEC. 7. RESEARCH ON AVIATION TRAINING.***

*Section 48102(h)(1) of title 49, United States Code, is amended—*

*(1) by striking "or" at the end of subparagraph (B);*

*(2) by striking the period at the end of subparagraph (C) and inserting "; or"; and*

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

*"(D) research on the impact of new technologies and procedures, particularly those related to aircraft flight deck and air traffic management functions, on training requirements for pilots and air traffic controllers.".*

***SEC. 8. ROTORCRAFT RESEARCH AND DEVELOPMENT INITIATIVE.***

*(a) OBJECTIVE.—The Administrator of the Federal Aviation Administration shall establish a rotorcraft initiative with the objective of developing, and demonstrating in a relevant environment, within 10 years after the date of the enactment of this Act, technologies to enable rotorcraft with the following improvements relative to rotorcraft existing as of the date of the enactment of this Act:*

*(1) 80 percent reduction in noise levels on takeoff and on approach and landing as perceived by a human observer.*

*(2) Factor of 10 reduction in vibration.*

*(3) 30 percent reduction in empty weight.*

*(4) Predicted accident rate equivalent to that of fixed-wing aircraft in commercial service within 10 years after the date of the enactment of this Act.*

*(5) Capability for zero-ceiling, zero-visibility operations.*

*(b) IMPLEMENTATION.—Within 180 days after the date of the enactment of this Act, the Administrator of the Federal Aviation Administration, in cooperation with the Administrator of the National Aeronautics and Space Administration, shall provide a plan to the Committee on Science of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate for the implementation of the initiative described in subsection (a). The implementation plan shall include—*

*(1) technological roadmaps for achieving each of the improvements specified in subsection (a);*

*(2) an estimate of the 10-year funding profile required to achieve the objective specified in subsection (a);*

*(3) a plan for carrying out a formal quantification of the estimated costs and benefits of each technological option selected for development beyond the initial concept definition phase;*

*(4) a plan for transferring the technologies to industry, including the identification of requirements for prototype demonstrations, as appropriate;*

*(5) a plan to perform rotorcraft system architecture studies to identify revolutionary technologies for future investments in research and development; and*

*(6) a plan to increase the use of vertical-take-off-and-landing vehicles to improve transportation service in urban areas.*

*(c) FUNDING AGREEMENTS.—The Administrator of the Federal Aviation Administration shall enter into appropriate funding agreements with other Federal agencies and departments linked to national rotorcraft industry and academic research and development.*

*(d) CENTER FOR ROTORCRAFT TECHNOLOGY.—The Federal Aviation Administration is authorized to contribute up to $5,000,000 for the operation of a center for rotorcraft technology to house a research, testing, and training facility and administrative center in the vicinity of existing helicopter manufacturing and research for the purpose of improving upon and developing new rotorcraft technologies, new design capabilities, and manufacturing techniques, including the objectives described in subsection (a), led by helicopter manufacturers, the maintenance industry, retrofitters, universities, and industry suppliers.*

*(e) AUTHORIZATION OF APPROPRIATIONS.—In addition to amounts authorized to be appropriated by the amendments made by this Act, there are authorized to be appropriated to the Administrator of the Federal Aviation Administration to carry out this section—*

*(1) $40,000,000 for fiscal year 2004;*

*(2) $40,000,000 for fiscal year 2005;*

*(3) $40,000,000 for fiscal year 2006;*

*(4) $50,000,000 for fiscal year 2007; and*

*(5) $70,000,000 for fiscal year 2008.*

***SEC. 9. PILOT RETIREMENT AGE STUDY.***

*The Administrator of the Federal Aviation Administration shall conduct a research study of whether commercial airline pilots between the ages of 60 and 64 who are employed by foreign air carriers pose a significant safety risk to United States passengers and airspace. The Administrator shall transmit the results of the study to the Congress not later than 6 months after the date of the enactment of this Act.*

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DECEMBER 8, 2003

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