§ 48102. Research and development

(a) **Authorization of Appropriations.**— Not more than the following amounts may be appropriated to the Secretary of Transportation out of the Airport and Airway Trust Fund established under section 9502 of the Internal Revenue Code of 1986 (26 U.S.C. 9502) for conducting civil aviation research and development under sections 44504, 44505, 44507, 44509, and 44511–44513 of this title:

1. for fiscal year 1995—
   (A) $7,673,000 for management and analysis projects and activities;
   (B) $80,901,000 for capacity and air traffic management technology projects and activities;
   (C) $39,242,000 for communications, navigation, and surveillance projects and activities;
   (D) $2,909,000 for weather projects and activities;
   (E) $8,660,000 for airport technology projects and activities;
   (F) $51,004,000 for aircraft safety technology projects and activities;
   (G) $36,604,000 for system security technology projects and activities;
   (H) $26,484,000 for human factors and aviation medicine projects and activities;
   (I) $8,124,000 for environment and energy projects and activities; and
   (J) $5,199,000 for innovative/cooperative research projects and activities;

2. for fiscal year 1996—
   (A) $8,056,000 for management and analysis projects and activities;
   (B) $84,946,000 for capacity and air traffic management technology projects and activities;
   (C) $41,204,000 for communications, navigation, and surveillance projects and activities;
   (D) $3,054,000 for weather projects and activities;
   (E) $9,093,000 for airport technology projects and activities;
   (F) $53,554,000 for aircraft safety technology projects and activities;
   (G) $38,434,000 for system security technology projects and activities;
   (H) $27,808,000 for human factors and aviation medicine projects and activities;
   (I) $8,532,000 for environment and energy projects and activities; and
   (J) $5,459,000 for innovative/cooperative research projects and activities;

3. for fiscal year 1997—
   (A) $13,660,000 for system development and infrastructure projects and activities;
   (B) $34,889,000 for capacity and air traffic management technology projects and activities;
   (C) $19,000,000 for communications, navigation, and surveillance projects and activities;
   (D) $13,000,000 for weather projects and activities;
   (E) $5,200,000 for airport technology projects and activities;
   (F) $36,504,000 for aircraft safety technology projects and activities;
   (G) $57,055,000 for system security technology projects and activities;
   (H) $23,504,000 for human factors and aviation medicine projects and activities;
   (I) $3,600,000 for environment and energy projects and activities; and
   (J) $2,000,000 for innovative/cooperative research projects and activities;

4. for fiscal year 1998, $226,800,000, including—
   (A) $16,379,000 for system development and infrastructure projects and activities;
(B) $27,089,000 for capacity and air traffic management technology projects and activities;
(C) $23,362,000 for communications, navigation, and surveillance projects and activities;
(D) $16,600,000 for weather projects and activities;
(E) $7,854,000 for airport technology projects and activities;
(F) $49,202,000 for aircraft safety technology projects and activities;
(G) $53,759,000 for system security technology projects and activities;
(H) $26,550,000 for human factors and aviation medicine projects and activities;
(I) $2,891,000 for environment and energy projects and activities; and
(J) $3,114,000 for innovative/cooperative research projects and activities, of which $750,000 shall be for carrying out the grant program established under subsection (h);

(5) for fiscal year 1999, $229,673,000;

(6) for fiscal year 2000, $224,000,000, including—
   (A) $17,269,000 for system development and infrastructure projects and activities;
   (B) $33,042,500 for capacity and air traffic management technology projects and activities;
   (C) $11,265,400 for communications, navigation, and surveillance projects and activities;
   (D) $19,300,000 for weather projects and activities;
   (E) $6,358,200 for airport technology projects and activities;
   (F) $44,457,000 for aircraft safety technology projects and activities;
   (G) $53,218,000 for system security technology projects and activities;
   (H) $26,207,000 for human factors and aviation medicine projects and activities;
   (I) $3,481,000 for environment and energy projects and activities; and
   (J) $2,171,000 for innovative/cooperative research projects and activities, of which $750,000 shall be for carrying out subsection (h);

(7) for fiscal year 2001, $237,000,000;

(8) for fiscal year 2002, $249,000,000;

(9) for fiscal year 2004, $346,317,000, including—
   (A) $65,000,000 for Improving Aviation Safety;
   (B) $24,000,000 for Weather Safety Research;
   (C) $27,500,000 for Human Factors and Aeromedical Research;
   (D) $30,000,000 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;
   (E) $7,000,000 for Research Mission Support;
   (F) $10,000,000 for the Airport Cooperative Research Program;
   (G) $1,500,000 for carrying out subsection (h) of this section;
   (H) $42,800,000 for Advanced Technology Development and Prototyping;
   (I) $30,300,000 for Safe Flight 21;
   (J) $90,800,000 for the Center for Advanced Aviation System Development;
   (K) $9,667,000 for Airports Technology-Safety; and
   (L) $7,750,000 for Airports Technology-Efficiency;

(10) for fiscal year 2005, $356,192,000, including—
   (A) $65,705,000 for Improving Aviation Safety;
   (B) $24,260,000 for Weather Safety Research;
   (C) $27,800,000 for Human Factors and Aeromedical Research;
(D) $30,109,000 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;

(E) $7,076,000 for Research Mission Support;

(F) $10,000,000 for the Airport Cooperative Research Program;

(G) $1,650,000 for carrying out subsection (h) of this section;

(H) $43,300,000 for Advanced Technology Development and Prototyping;

(I) $31,100,000 for Safe Flight 21;

(J) $95,400,000 for the Center for Advanced Aviation System Development;

(K) $2,200,000 for Free Flight Phase 2;

(L) $9,764,000 for Airports Technology-Safety; and

(M) $7,828,000 for Airports Technology-Efficiency;

(11) for fiscal year 2006, $352,157,000, including—

(A) $66,447,000 for Improving Aviation Safety;

(B) $24,534,000 for Weather Safety Research;

(C) $28,114,000 for Human Factors and Aeromedical Research;

(D) $30,223,000 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;

(E) $7,156,000 for Research Mission Support;

(F) $10,000,000 for the Airport Cooperation Research Program;

(G) $1,815,000 for carrying out subsection (h) of this section;

(H) $42,200,000 for Advanced Technology Development and Prototyping;

(I) $23,900,000 for Safe Flight 21;

(J) $100,000,000 for the Center for Advanced Aviation System Development;

(K) $9,862,000 for Airports Technology-Safety; \(^1\)

(L) $7,906,000 for Airports Technology-Efficiency; and \(^2\)

(12) for fiscal year 2007, $356,261,000, including—

(A) $67,244,000 for Improving Aviation Safety;

(B) $24,828,000 for Weather Safety Research;

(C) $28,451,000 for Human Factors and Aeromedical Research;

(D) $30,586,000 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;

(E) $7,242,000 for Research Mission Support;

(F) $10,000,000 for the Airport Cooperation Research Program;

(G) $1,837,000 for carrying out subsection (h) of this section;

(H) $42,706,000 for Advanced Technology Development and Prototyping;

(I) $24,187,000 for Safe Flight 21;

(J) $101,200,000 for the Center for Advanced Aviation System Development;

(K) $9,980,000 for Airports Technology-Safety; and

(L) $8,000,000 for Airports Technology-Efficiency;

(13) $171,000,000 for fiscal year 2009;

(14) $190,500,000 for fiscal year 2010;

(15) $170,000,000 for fiscal year 2011; and
(16) $57,016,885 for the period beginning on October 1, 2011, and ending on January 31, 2012.

(b) Research Priorities.—

(1) The Administrator shall consider the advice and recommendations of the research advisory committee established by section 44508 of this title in establishing priorities among major categories of research and development activities carried out by the Federal Aviation Administration.

(2) At least 15 percent of the amount appropriated under subsection (a) of this section shall be for long-term research projects.

(3) At least 3 percent of the amount appropriated under subsection (a) of this section shall be available to the Administrator of the Federal Aviation Administration to make grants under section 44511 of this title.

(c) Transfers Between Categories.—

(1) Not more than 10 percent of the net amount authorized for a category of projects and activities in a fiscal year under subsection (a) of this section may be transferred to or from that category in that fiscal year.

(2) The Secretary may transfer more than 10 percent of an authorized amount to or from a category only after—

(A) submitting a written explanation of the proposed transfer 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; and

(B) 30 days have passed after the explanation is submitted or each Committee notifies the Secretary in writing that it does not object to the proposed transfer.

(d) Airport Capacity Research and Development.—

(1) Of the amounts made available under subsection (a) of this section, at least $25,000,000 may be appropriated each fiscal year for research and development under section 44505 (a) and (c) of this title on preserving and enhancing airport capacity, including research and development on improvements to airport design standards, maintenance, safety, operations, and environmental concerns.

(2) The Administrator shall submit to the Committees on Science and Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report on expenditures made under paragraph (1) of this subsection for each fiscal year. The report shall be submitted not later than 60 days after the end of the fiscal year.

(e) Air Traffic Controller Performance Research.— Necessary amounts may be appropriated to the Secretary out of amounts in the Fund available for research and development to conduct research under section 44506 (a) and (b) of this title.

(f) Availability of Amounts.— Amounts appropriated under subsection (a) of this section remain available until expended.

(h) 3 Research Grants Program Involving Undergraduate Students.—

(1) Establishment.— The Administrator of the Federal Aviation Administration shall establish a program to utilize undergraduate and technical colleges, including Historically Black Colleges and Universities and Hispanic Serving Institutions, in research on subjects of relevance to the Federal Aviation Administration. Grants may be awarded under this subsection for—

(A) research projects to be carried out at primarily undergraduate institutions and technical colleges;

(B) research projects that combine research at primarily undergraduate institutions and technical colleges with other research supported by the Federal Aviation Administration;
(C) research on future training requirements on projected changes in regulatory requirements for aircraft maintenance and power plant licensees; or

(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.

(2) Notice of criteria.— Within 6 months after the date of the enactment of the FAA Research, Engineering, and Development Authorization Act of 1998, the Administrator of the Federal Aviation Administration shall establish and publish in the Federal Register criteria for the submittal of proposals for a grant under this subsection, and for the awarding of such grants.

(3) Principal criteria.— The principal criteria for the awarding of grants under this subsection shall be—

(A) the relevance of the proposed research to technical research needs identified by the Federal Aviation Administration;

(B) the scientific and technical merit of the proposed research; and

(C) the potential for participation by undergraduate students in the proposed research.

(4) Competitive, merit-based evaluation.— Grants shall be awarded under this subsection on the basis of evaluation of proposals through a competitive, merit-based process.

Footnotes

1 So in original. Probably should be followed by “and”.

2 So in original. The word “and” probably should not appear.

3 So in original. No subsec. (g) has been enacted.
In subsections (a) and (b), as to applicability of section 305(b) of the Airport and Airway Safety, Capacity, Noise Improvement, and Intermodal Transportation Act of 1992 (Pub. L. 102–581, 106 Stat. 4896), see section 6(b) of the bill.

In subsection (a)(1), the word “solely” is omitted as surplus. Before clause (1), the words “to the Secretary of Transportation” are added for clarity and consistency in this chapter.

In subsection (d)(1), the words “Notwithstanding any other provision of this subsection” and “in each of fiscal years 1988, 1989, 1990, 1991, and 1992” are omitted as surplus.

In subsection (d)(2), the reference to fiscal years 1988–1992 and the words “by the Administrator for research and development” are omitted as surplus.

References in Text

Amendments

2010—Subsec. (a)(14). Pub. L. 111–216 amended par. (14) generally. Prior to amendment, par. (14) read as follows: “$159,184,932 for the period beginning on October 1, 2009, and ending on August 1, 2010.”

Pub. L. 111–197 amended par. (14) generally. Prior to amendment, par. (14) read as follows: “$144,049,315 for the period beginning on October 1, 2009, and ending on July 3, 2010.”

Pub. L. 111–161 amended par. (14) generally. Prior to amendment, par. (14) read as follows: “$111,125,000 for the 7-month period beginning on October 1, 2009.”

Pub. L. 111–153 amended par. (14) generally. Prior to amendment, par. (14) read as follows: “$92,500,000 for the 6-month period beginning on October 1, 2009.”

2009—Subsec. (a)(13). Pub. L. 111–12 substituted “$171,000,000 for fiscal year 2009” for “$85,507,500 for the 6-month period beginning on October 1, 2008”.


2008—Subsec. (a)(11) to (13). Pub. L. 110–330 struck out “and” at end of subpar. (K) of par. (11), substituted “; and” for period at end of subpar. (L) of par. (12), and added subpar. (13).


Subsec. (a)(4)(J). Pub. L. 105–155, § 3(b), inserted “, of which $750,000 shall be for carrying out the grant program established under subsection (h)” after “projects and activities”.
Subsec. (b). Pub. L. 104–264, § 1103, substituted “Research Priorities” for “Availability for Research” in heading, added par. (1), and redesignated former pars. (1) and (2) as (2) and (3), respectively.
Subsec. (c)(2)(A). Pub. L. 104–287, § 5(74), substituted “Committees on Science” for “Committees on Science, Space, and Technology”.
Subsec. (d)(2). Pub. L. 104–287, § 5(74), substituted “Committees on Science” for “Committees on Science, Space, and Technology”.
Pub. L. 104–287, § 5(9), substituted “Transportation and Infrastructure” for “Public Works and Transportation”.
1994—Subsec. (a)(1), (2). Pub. L. 103–305 inserted pars. (1) and (2) and struck out former pars. (1) and (2) which read as follows:
“(1) for the fiscal year ending September 30, 1993—
“(A) $14,700,000 only for management and analysis projects and activities.
“(B) $87,000,000 only for capacity and air traffic management technology projects and activities.
“(C) $28,000,000 only for communications, navigation, and surveillance projects and activities.
“(D) $7,700,000 only for weather projects and activities.
“(E) $6,800,000 only for airport technology projects and activities.
“(F) $44,000,000 only for aircraft safety technology projects and activities.
“(G) $41,100,000 only for system security technology projects and activities.
“(H) $31,000,000 only for human factors and aviation medicine projects and activities.
“(I) $4,500,000 for environment and energy projects and activities.
“(J) $5,200,000 for innovative and cooperative research projects and activities.
“(2) for the fiscal year ending September 30, 1994, $297,000,000.”

Change of Name
Committee on Science of House of Representatives changed to Committee on Science and Technology of House of Representatives by House Resolution No. 6, One Hundred Tenth Congress, Jan. 5, 2007. Committee on Science and Technology of House of Representatives changed to Committee on Science, Space, and Technology of House of Representatives by House Resolution No. 5, One Hundred Twelfth Congress, Jan. 5, 2011.

Effective Date of 2003 Amendment
Amendment by Pub. L. 108–176 applicable only to fiscal years beginning after Sept. 30, 2003, except as otherwise specifically provided, see section 3 of Pub. L. 108–176, set out as a note under section 106 of this title.

Effective Date of 2000 Amendment

Effective Date of 1996 Amendment
Except as otherwise specifically provided, amendment by Pub. L. 104–264 applicable only to fiscal years beginning after Sept. 30, 1996, and not to be construed as affecting funds made available for a fiscal year ending before Oct. 1, 1996, see section 3 of Pub. L. 104–264, set out as a note under section 106 of this title.

Notices
“(a) Reprogramming.—If any funds authorized by the amendments made by this Act [amending this section] 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 Committees on Science [now Science, Space, and Technology] and Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

“(b) Notice of Reorganization.—The Administrator of the Federal Aviation Administration shall provide notice to the Committees on Science [now Science, Space, and Technology], Transportation and Infrastructure, 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 (as determined by the Administrator) of any program of the Federal Aviation Administration for which funds are authorized by this Act.”