

nology 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.

**§ 44512. Catastrophic failure prevention research grants**

(a) GENERAL AUTHORITY.—The Administrator of the Federal Aviation Administration may make grants to institutions of higher education and nonprofit research organizations—

(1) to conduct aviation research related to the development of technologies and methods to assess the risk of, and prevent, defects, failures, and malfunctions of products, parts, processes, and articles manufactured for use in aircraft, aircraft engines, propellers, and appliances that could result in a catastrophic failure of an aircraft; and

(2) to establish centers of excellence for continuing the research.

(b) SOLICITATION, APPLICATION, REVIEW, AND EVALUATION PROCESS.—The Administrator shall establish a solicitation, application, review, and evaluation process that ensures providing grants under this section for proposals having adequate merit and relevancy to the research described in subsection (a) of this section.

(Pub. L. 103-272, §1(e), July 5, 1994, 108 Stat. 1182.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
44512 .....	49 App.:1353(h).	Aug. 23, 1958, Pub. L. 85-726, 72 Stat. 731, §312(h); added Nov. 5, 1990, Pub. L. 101-508, §9208(b), 104 Stat. 1388-376.

In this section, the words “institutions of higher education” are substituted for “colleges, universities” for consistency in the revised title.

In subsection (b), the words “providing grants” are substituted for “the funding” for consistency in the revised title.

**§ 44513. Regional centers of air transportation excellence**

(a) GENERAL AUTHORITY.—The Administrator of the Federal Aviation Administration may make grants to institutions of higher education to establish and operate regional centers of air transportation excellence. The locations shall be distributed in a geographically fair way.

(b) RESPONSIBILITIES.—(1) The responsibilities of each center established under this section shall include—

(A) conducting research on—

(i) airspace and airport planning and design;

(ii) airport capacity enhancement techniques;

(iii) human performance in the air transportation environment;

(iv) aviation safety and security;

(v) the supply of trained air transportation personnel, including pilots and mechanics; and

(vi) other aviation issues related to developing and maintaining a safe and efficient air transportation system; and

(B) interpreting, publishing, and disseminating the results of the research.

(2) In conducting research described in paragraph (1)(A) of this subsection, each center may make contracts with nonprofit research organizations and other appropriate persons.

(c) APPLICATIONS.—An institution of higher education interested in receiving a grant under this section may submit an application to the Administrator. The application must be in the form and contain the information that the Administrator requires by regulation.

(d) SELECTION CRITERIA.—The Administrator shall select recipients of grants under this section on the basis of the following criteria:

(1) the extent to which the needs of the State in which the applicant is located are representative of the needs of the region for improved air transportation services and facilities.

(2) the demonstrated research and extension resources available to the applicant to carry out this section.

(3) the ability of the applicant to provide leadership in making national and regional contributions to the solution of both long-range and immediate air transportation problems.

(4) the extent to which the applicant has an established air transportation program.

(5) the demonstrated ability of the applicant to disseminate results of air transportation research and educational programs through a statewide or regionwide continuing education program.

(6) the projects the applicant proposes to carry out under the grant.

(e) EXPENDITURE AGREEMENTS.—A grant may be made under this section in a fiscal year only if the recipient makes an agreement with the Administrator that the Administrator requires to ensure that the recipient will maintain its total expenditures from all other sources for establishing and operating the center and related research activities at a level at least equal to the average level of those expenditures in the 2 fiscal years of the recipient occurring immediately before November 5, 1990.

(f) GOVERNMENT'S SHARE OF COSTS.—The United States Government's share of establishing and operating a center and all related research activities that grant recipients carry out shall not exceed 50 percent of the costs, except that the Administrator may increase such share to a maximum of 75 percent of the costs for a fiscal year if the Administrator determines that a center would be unable to carry out the authorized activities described in this section without additional funds.

(g) ALLOCATING AMOUNTS.—The Administrator shall allocate amounts made available to carry out this section in a geographically fair way.

(h) ANNUAL REPORT.—The Administrator shall transmit annually to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate at

the time of the President’s budget request a report that lists—

- (1) the research projects that have been initiated by each center in the preceding year;
- (2) the amount of funding for each research project and the funding source;
- (3) the institutions participating in each research project and their shares of the overall funding for each research project; and
- (4) the level of cost-sharing for each research project.

(Pub. L. 103–272, §1(e), July 5, 1994, 108 Stat. 1182; Pub. L. 112–95, title IX, §907, Feb. 14, 2012, 126 Stat. 140.)

HISTORICAL AND REVISION NOTES

Revised Section	Source (U.S. Code)	Source (Statutes at Large)
44513 .....	49 App.:1353(i).	Aug. 23, 1958, Pub. L. 85–726, 72 Stat. 731, §312(i); added Nov. 5, 1990, Pub. L. 101–508, §9209(a), 104 Stat. 1388–376.

In this section, the words “institutions of higher education” and “institution of higher education” are substituted for “colleges or universities” and “college or university” for consistency in the revised title.

In subsection (a), the words “one or more” are omitted as surplus.

Editorial Notes

AMENDMENTS

2012—Subsec. (f). Pub. L. 112–95, §907(a), amended subsec. (f) generally. Prior to amendment, text read as follows: “The United States Government’s share of a grant under this section is 50 percent of the costs of establishing and operating the center and related research activities that the grant recipient carries out.” Subsec. (h). Pub. L. 112–95, §907(b), added subsec. (h).

Statutory Notes and Related Subsidiaries

FAA CENTER OF EXCELLENCE FOR AUTOMATED SYSTEMS AND HUMAN FACTORS IN AIRCRAFT

Pub. L. 116–260, div. V, title I, §127, Dec. 27, 2020, 134 Stat. 2348, provided that:

“(a) IN GENERAL.—The Administrator shall develop or expand a Center of Excellence focused on automated systems and human factors in transport category aircraft.

“(b) DUTIES.—The Center of Excellence shall, as appropriate—

“(1) facilitate collaboration among academia, the FAA, and the aircraft and airline industries, including aircraft, engine, and equipment manufacturers, air carriers, and representatives of the pilot community;

“(2) establish goals for research in areas of study relevant to advancing technology, improving engineering practices, and facilitating better understanding of human factors concepts in the context of the growing development and reliance on automated or complex systems in commercial aircraft, including continuing education and training;

“(3) examine issues related to human system integration and flight crew and aircraft interfaces, including tools and methods to support the integration of human factors considerations into the aircraft design and certification process; and

“(4) review safety reports to identify potential human factors issues for research.

“(c) AVOIDING DUPLICATION OF WORK.—In developing or expanding the Center of Excellence, the Administrator shall ensure the work of the Center of Excellence does not duplicate or overlap with the work of any other established center of excellence.

“(d) MEMBER PRIORITIZATION.—

“(1) IN GENERAL.—The Administrator, when developing or expanding the Center of Excellence, shall prioritize the inclusion of subject-matter experts whose professional experience enables them to be objective and impartial in their contributions to the greatest extent possible.

“(2) REPRESENTATION.—The Administrator shall require that the membership of the Center of Excellence reflect a balanced viewpoint across broad disciplines in the aviation industry.

“(3) DISCLOSURE.—Any member of the Center of Excellence who is a Boeing Company or FAA employee who participated in the certification of the Maneuvering Characteristics Augmentation System for the 737 MAX-8 airplane must disclose such involvement to the FAA prior to performing any work on behalf of the FAA.

“(4) TRANSPARENCY.—In developing or expanding the Center of Excellence, the Administrator shall develop procedures to facilitate transparency and appropriate maintenance of records to the maximum extent practicable.

“(5) COORDINATION.—Nothing in this section shall preclude coordination and collaboration between the Center of Excellence developed or expanded under this section and any other established center of excellence.

“(e) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Administrator \$2,000,000 for each of fiscal years 2021 through 2023, out of funds made available under section 48102(a) of title 49, United States Code, to carry out this section. Amounts appropriated under the preceding sentence for any fiscal year shall remain available until expended.”

[For definitions of terms used in section 127 of div. V of Pub. L. 116–260, set out above, see section 137 of div. V of Pub. L. 116–260, set out as a note under section 40101 of this title.]

CENTER OF EXCELLENCE FOR AVIATION HUMAN RESOURCE RESEARCH

Pub. L. 112–95, title IX, §908, Feb. 14, 2012, 126 Stat. 140, provided that:

“(a) ESTABLISHMENT.—Using amounts made available under section 48102(a) of title 49, United States Code, the Administrator [of the Federal Aviation Administration] may establish a center of excellence to conduct research on—

“(1) human performance in the air transportation environment, including among air transportation personnel such as air traffic controllers, pilots, and technicians; and

“(2) any other aviation human resource issue pertinent to developing and maintaining a safe and efficient air transportation system.

“(b) ACTIVITIES.—Activities conducted under this section may include the following:

“(1) Research, development, and evaluation of training programs for air traffic controllers, aviation safety inspectors, airway transportation safety specialists, and engineers.

“(2) Research and development of best practices for recruitment of individuals into the aviation field for mission critical positions.

“(3) Research, in consultation with other relevant Federal agencies, to develop a baseline of general aviation employment statistics and an analysis of future needs in the aviation field.

“(4) Research and the development of a comprehensive assessment of the airframe and power plant technician certification process and its effect on employment trends.

“(5) Evaluation of aviation maintenance technician school environments.

“(6) Research and an assessment of the ability to develop training programs to allow for the transition of recently unemployed and highly skilled mechanics into the aviation field.”

**[§ 44514. Repealed. Pub. L. 118–63, title III, § 337, May 16, 2024, 138 Stat. 1093]**

Section, Pub. L. 103–272, §1(e), July 5, 1994, 108 Stat. 1183, related to closing, reopening, and reducing hours of certain flight service stations and establishment of manned auxiliary flight service stations.

**[§ 44515. Repealed. Pub. L. 118–63, title IV, § 401(a), May 16, 2024, 138 Stat. 1148]**

Section, Pub. L. 103–272, §1(e), July 5, 1994, 108 Stat. 1184, related to grants for advanced training facilities for maintenance technicians for air carrier aircraft.

**§ 44516. Human factors program**

(a) HUMAN FACTORS TRAINING.—

(1) AIR TRAFFIC CONTROLLERS.—The Administrator of the Federal Aviation Administration shall—

- (A) address the problems and concerns raised by the National Research Council in its report “The Future of Air Traffic Control” on air traffic control automation; and
- (B) respond to the recommendations made by the National Research Council.

(2) PILOTS AND FLIGHT CREWS.—The Administrator shall work with representatives of the aviation industry and appropriate aviation programs associated with universities to develop specific training curricula to address critical safety problems, including problems of pilots—

- (A) in recovering from loss of control of an aircraft, including handling unusual attitudes and mechanical malfunctions;
- (B) in deviating from standard operating procedures, including inappropriate responses to emergencies and hazardous weather;
- (C) in awareness of altitude and location relative to terrain to prevent controlled flight into terrain; and
- (D) in landing and approaches, including nonprecision approaches and go-around procedures.

(b) TEST PROGRAM.—The Administrator shall establish a test program in cooperation with air carriers to use model Jeppesen approach plates or other similar tools to improve precision-like landing approaches for aircraft.

(c) REPORT.—Not later than 1 year after the date of the enactment of this section, the Administrator shall transmit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report on the status of the Administration’s efforts to encourage the adoption and implementation of advanced qualification programs for air carriers under this section.

(d) ADVANCED QUALIFICATION PROGRAM DEFINED.—In this section, the term “advanced qualification program” means an alternative method for qualifying, training, certifying, and ensuring the competency of flight crews and other commercial aviation operations personnel subject to the training and evaluation requirements of parts 121 and 135 of title 14, Code of Federal Regulations.

(Added Pub. L. 106–181, title VII, §713(a), Apr. 5, 2000, 114 Stat. 160.)

**Editorial Notes**

REFERENCES IN TEXT

The date of the enactment of this section, referred to in subsec. (c), is the date of enactment of Pub. L. 106–181, which was approved Apr. 5, 2000.

**Statutory Notes and Related Subsidiaries**

EFFECTIVE DATE

Section applicable only to fiscal years beginning after Sept. 30, 1999, see section 3 of Pub. L. 106–181, set out as an Effective Date of 2000 Amendments note under section 106 of this title.

HUMAN FACTORS PROFESSIONALS

Pub. L. 118–63, title IV, §410, May 16, 2024, 138 Stat. 1156, provided that: “The Administrator [of the Federal Aviation Administration] shall take such actions as may be necessary to establish a new work code for human factors professionals who—

- “(1) perform work involving the design and testing of technologies, processes, and systems which require effective and safe human performance;
- “(2) generate and apply theories, principles, practical concepts, systems, and processes related to the design and testing of technologies, systems, and training programs to support and evaluate human performance in work contexts; and
- “(3) meet education or experience requirements as determined by the Administrator.”

HUMAN FACTORS EDUCATION PROGRAM

Pub. L. 116–260, div. V, title I, §124, Dec. 27, 2020, 134 Stat. 2346, provided that:

“(a) HUMAN FACTORS EDUCATION PROGRAM.—

“(1) IN GENERAL.—The Administrator shall develop a human factors education program that addresses the effects of modern flight deck systems, including automated systems, on human performance for transport airplanes and the approaches for better integration of human factors in aircraft design and certification.

“(2) TARGET AUDIENCE.—The human factors education program shall be integrated into the training protocols (as in existence as of the date of enactment of this title [Dec. 27, 2020]) for, and be routinely administered to, the following:

- “(A) Appropriate employees within the Flight Standards Service.
- “(B) Appropriate employees within the Aircraft Certification Service.
- “(C) Other employees or authorized representatives determined to be necessary by the Administrator.

“(b) TRANSPORT AIRPLANE MANUFACTURER INFORMATION SHARING.—The Administrator shall—

- “(1) require each transport airplane manufacturer to provide the Administrator with the information or findings necessary for flight crew to be trained on flight deck systems;
- “(2) ensure the information or findings under paragraph (1) adequately includes consideration of human factors; and
- “(3) ensure that each transport airplane manufacturer identifies any technical basis, justification or rationale for the information and findings under paragraph (1).”

[For definitions of “Administrator” and “transport airplanes” as used in section 124 of div. V of Pub. L. 116–260, set out above, see section 137 of div. V of Pub. L. 116–260, set out as a note under section 40101 of this title.]

**§ 44517. Program to permit cost sharing of air traffic modernization projects**

(a) IN GENERAL.—Subject to the requirements of this section, the Secretary may carry out a