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112TH CONGRESS, 1st Session } HOUSE OF REPRESENTATIVES { REPORT 112–52

FEDERAL AVIATION RESEARCH AND DEVELOPMENT REAUTHORIZATION ACT OF 2011

APRIL 4, 2011.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. HALL, from the Committee on Science, Space, and Technology, submitted the following

R E P O R T

together with

DISSENTING VIEWS

[To accompany H.R. 970]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science, Space, and Technology, to whom was referred the bill (H.R. 970) to reauthorize the civil aviation research and development projects and activities of the Federal Aviation Administration, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

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I. AMENDMENT

The amendment is as follows:

Strike all after the enacting clause and insert the following:

SECTION 1. AMENDMENTS TO TITLE 49, UNITED STATES CODE.

Except as otherwise expressly provided, whenever in this Act an amendment or repeal is expressed in terms of an amendment to, or a repeal of, a section or other provision, the reference shall be considered to be made to a section or other provision of title 49, United States Code.

TITLE X—FEDERAL AVIATION RESEARCH AND DEVELOPMENT REAUTHORIZATION ACT OF 2011

SEC. 1001. SHORT TITLE.

This title may be cited as the "Federal Aviation Research and Development Reauthorization Act of 2011".

SEC. 1002. DEFINITIONS.

In this title, the following definitions apply:

(1) ADMINISTRATOR.—The term "Administrator" means the Administrator of the Federal Aviation Administration.

(2) FAA.—The term "FAA" means the Federal Aviation Administration.

(3) INSTITUTION OF HIGHER EDUCATION.—The term "institution of higher education" has the same meaning given the term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(4) NASA.—The term "NASA" means the National Aeronautics and Space Administration.

(5) NATIONAL RESEARCH COUNCIL.—The term "National Research Council" means the National Research Council of the National Academies of Science and Engineering.

(6) NOAA.—The term "NOAA" means the National Oceanic and Atmospheric Administration.

(7) SECRETARY.—The term "Secretary" means the Secretary of Transportation.

SEC. 1003. AUTHORIZATION OF APPROPRIATIONS.

(a) IN GENERAL.—Section 48102(a) is amended—

(1) in the matter before paragraph (1) by striking "of this title" and inserting "of this title and, for each of fiscal years 2011 through 2014, under subsection (g)";

(2) in paragraph (11)—

(A) in subparagraph (K) by inserting "and" at the end; and

(B) in subparagraph (L) by striking "and" at the end;

(3) in paragraph (13) by striking "and" at the end;

(4) in paragraph (14) by striking the period at the end and inserting a semicolon; and

(5) by adding at the end the following:

"(15) for fiscal year 2011, $165,020,000; and

"(16) for each of the fiscal years 2012 through 2014, $146,827,000.".

(b) SPECIFIC PROGRAM LIMITATIONS.—Section 48102 is amended by inserting after subsection (f) the following:

"(g) SPECIFIC AUTHORIZATIONS.—The following programs described in the research, engineering, and development account of the national aviation research plan required under section 44501(c) are authorized:

"(1) Fire Research and Safety.

"(2) Propulsion and Fuel Systems.

"(3) Advanced Materials/Structural Safety.

"(4) Atmospheric Hazards—Aircraft Icing/Digital System Safety.

"(5) Continued Airworthiness.

"(6) Aircraft Catastrophic Failure Prevention Research.

"(7) Flightdeck/Maintenance/System Integration Human Factors.
"(8) System Safety Management.
"(9) Air Traffic Control/Technical Operations Human Factors.
"(10) Aeromedical Research.
"(11) Weather Program.
"(12) Unmanned Aircraft Systems Research.
"(13) NextGen—Alternative Fuels for General Aviation.
"(14) Joint Planning and Development Office.
"(15) NextGen—Wake Turbulence Research.
"(16) NextGen—Air Ground Integration Human Factors.
"(17) NextGen—Self Separation Human Factors.
"(18) NextGen—Weather Technology in the Cockpit.
"(19) Environment and Energy Research.
"(20) NextGen Environmental Research—Aircraft Technologies, Fuels, and Metrics.
"(21) System Planning and Resource Management.
"(22) The William J. Hughes Technical Center Laboratory Facility.".

(c) PROGRAM AUTHORIZATIONS.—If the other accounts described in the national aviation research plan required under section 44501(c) of title 49, United States Code, are authorized for each of the fiscal years 2011 through 2014, the following research and development activities are authorized:

(1) Runway Incursion Reduction.
(2) System Capacity, Planning, and Improvement.
(3) Operations Concept Validation.
(4) NAS Weather Requirements.
(5) Airspace Management Program.
(6) NextGen—Air Traffic Control/Technical Operations Human Factors.
(7) NextGen—Environment and Energy—Environmental Management System and Advanced Noise and Emissions reduction.
(8) NextGen—New Air Traffic Management Requirements.
(9) NextGen—Operations Concept Validation—Validation Modeling.
(10) NextGen—System Safety Management Transformation.
(11) NextGen—Wake Turbulence—Recategorization.
(12) NextGen—Operational Assessments.
(13) NextGen—Staffed NextGen Towers.
(14) Center for Advanced Aviation System Development.
(15) Airports Technology Research Program—Capacity.
(16) Airports Technology Research Program—Safety.
(17) Airports Technology Research Program—Environment.
(18) Airport Cooperative Research—Capacity.
(19) Airport Cooperative Research—Environment.
(20) Airport Cooperative Research—Safety.

SEC. 1004. UNMANNED AIRCRAFT SYSTEMS.

(a) RESEARCH INITIATIVE.—Section 44504(b) is amended—

(1) in paragraph (6) by striking "and" after the semicolon;
(2) in paragraph (7) by striking the period at the end and inserting "; and"; and
(3) by adding at the end the following:
"(8) in conjunction with other Federal agencies, as appropriate, to develop technologies and methods to assess the risk of and prevent defects, failures, and malfunctions of products, parts, and processes for use in all classes of unmanned aircraft systems that could result in a catastrophic failure of the unmanned aircraft that would endanger other aircraft in the national airspace system.".

(b) SYSTEMS, PROCEDURES, FACILITIES, AND DEVICES.—Section 44505(b) is amended—

(1) in paragraph (4) by striking "and" after the semicolon;
(2) in paragraph (5)(C) by striking the period at the end and inserting a semicolon; and
(3) by adding at the end the following:
"(6) to develop a better understanding of the relationship between human factors and unmanned aircraft system safety; and
"(7) to develop dynamic simulation models for integrating all classes of unmanned aircraft systems into the national airspace system without any degradation of existing levels of safety for all national airspace system users.".

SEC. 1005. RESEARCH PROGRAM ON RUNWAYS.

Section 44505(c) is amended—

(1) by redesignating paragraphs (3) through (6) as paragraphs (5) through (8); and

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

"(3) improved runway surfaces;

"(4) engineered material restraining systems for runways at both general aviation airports and airports with commercial air carrier operations;".

SEC. 1006. RESEARCH ON DESIGN FOR CERTIFICATION.

Section 44505 is amended—

(1) by redesignating subsection (d) as subsection (e); and

(2) by inserting after subsection (c) the following:

"(d) RESEARCH ON DESIGN FOR CERTIFICATION.—

"(1) RESEARCH.—Not later than 1 year after the date of enactment of the Federal Aviation Research and Development Reauthorization Act of 2011, the Administrator shall conduct research on methods and procedures to improve both confidence in and the timeliness of certification of new technologies for their introduction into the national airspace system.

"(2) RESEARCH PLAN.—Not later than 6 months after the date of enactment of the Federal Aviation Research and Development Reauthorization Act of 2011, the Administrator shall develop a plan for the research under paragraph (1) that contains the objectives, proposed tasks, milestones, and 5-year budgetary profile.

"(3) REVIEW.—The Administrator shall enter into an arrangement with the National Research Council to conduct an independent review of the plan developed under paragraph (2) and shall provide the results of that review to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than 18 months after the date of enactment of the Federal Aviation Research and Development Reauthorization Act of 2011.".

SEC. 1007. AIRPORT COOPERATIVE RESEARCH PROGRAM.

Section 44511(f) is amended—

(1) in paragraph (1) by striking "establish a 4-year pilot" and inserting "maintain an"; and

(2) in paragraph (4)—

(A) by striking "Not later than 6 months after the expiration of the program under this subsection," and inserting "Not later than September 30, 2012,"; and

(B) by striking "program, including recommendations as to the need for establishing a permanent airport cooperative research program" and inserting "program".

SEC. 1008. CENTERS OF EXCELLENCE.

(a) GOVERNMENT'S SHARE OF COSTS.—Section 44513(f) is amended to read as follows:

"(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 any 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.".

(b) ANNUAL REPORT.—Section 44513 is amended by adding at the end the following:

"(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 project and their shares of the overall funding for each research project; and

"(4) the level of cost-sharing for each research project.".

SEC. 1009. CENTER OF EXCELLENCE FOR AVIATION HUMAN RESOURCE RESEARCH.

(a) ESTABLISHMENT.—Using amounts made available under section 48102(a) of title 49, United States Code, the Administrator 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 issues 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 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 powerplant 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.

SEC. 1010. INTERAGENCY RESEARCH ON AVIATION AND THE ENVIRONMENT.

(a) IN GENERAL.—Using amounts made available under section 48102(a) of title 49, United States Code, the Administrator, in coordination with NASA and after consultation with other relevant agencies, may maintain a research program to assess the potential effect of aviation on the environment and, if warranted, to evaluate approaches to address any such effect.

(b) RESEARCH PLAN.—

(1) IN GENERAL.—The Administrator, in coordination with NASA and after consultation with other relevant agencies, shall jointly develop a plan to carry out the research under subsection (a).

(2) CONTENTS.—Such plan shall contain an inventory of current interagency research being undertaken in this area, future research objectives, proposed tasks, milestones, and a 5-year budgetary profile.

(3) REQUIREMENTS.—Such plan—

(A) shall be completed not later than 1 year after the date of enactment of this Act;

(B) shall be submitted to Congress for review; and

(C) shall be updated, as appropriate, every 3 years after the initial submission.

SEC. 1011. AVIATION FUEL RESEARCH AND DEVELOPMENT PROGRAM.

(a) IN GENERAL.—Using amounts made available under section 48102(a) of title 49, United States Code, the Administrator, in coordination with the NASA Administrator, shall continue research and development activities into the qualification of an unleaded aviation fuel and safe transition to this fuel for the fleet of piston engine aircraft.

(b) REQUIREMENTS.—In carrying out the program under subsection (a), the Administrator shall, at a minimum—

(1) not later than 120 days after the date of enactment of this Act, develop a research and development plan containing the specific research and development objectives, including consideration of aviation safety, technical feasibility, and other relevant factors, and the anticipated timetable for achieving the objectives;

(2) assess the methods and processes by which the FAA and industry may expeditiously certify and approve new aircraft and recertify existing aircraft with respect to unleaded aviation fuel;

(3) assess technologies that modify existing piston engine aircraft to enable safe operation of the aircraft using unleaded aviation fuel and determine the resources necessary to certify those technologies; and

(4) develop recommendations for appropriate policies and guidelines to facilitate a transition to unleaded aviation fuel for piston engine aircraft.

(c) COLLABORATIONS.—In carrying out the program under subsection (a), the Administrator shall collaborate with—

(1) industry groups representing aviation consumers, manufacturers, and fuel producers and distributors; and

(2) other appropriate Federal agencies.

(d) REPORT.—Not later than 270 days after the date of enactment of this Act, the Administrator shall provide a report to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on the plan, information obtained, and policies and guidelines developed pursuant to subsection (b).

SEC. 1012. RESEARCH PROGRAM ON ALTERNATIVE JET FUEL TECHNOLOGY FOR CIVIL AIRCRAFT.

(a) RESEARCH PROGRAM.—Using amounts made available under section 48102(a) of title 49, United States Code, the Secretary shall conduct a research program related to developing and certifying jet fuel from alternative sources (such as coal, natural gas, biomass, ethanol, butanol, and hydrogen) through grants or other measures authorized under section 106(l)(6) of such title, including reimbursable agreements with other Federal agencies.

(b) PARTICIPATION BY STAKEHOLDERS.—In conducting the program, the Secretary shall provide for participation by educational and research institutions and by industry partners that have existing facilities and experience in the research and development of technology for alternative jet fuels.

(c) COLLABORATIONS.—In conducting the program, the Secretary may collaborate with existing interagency programs—

(1) to further the research and development of alternative jet fuel technology for civil aircraft, including feasibility studies; and

(2) to exchange information with the participants in the Commercial Aviation Alternative Fuels Initiative.

SEC. 1013. REVIEW OF FAA'S ENERGY- AND ENVIRONMENT-RELATED RESEARCH PROGRAMS.

(a) REVIEW.—Using amounts made available under section 48102(a) of title 49, United States Code, the Administrator shall conduct a review of FAA energy-related and environment-related research programs. The review shall assess whether—

(1) the programs have well-defined, prioritized, and appropriate research objectives;

(2) the programs are properly coordinated with the energy- and environment-related research programs at NASA, NOAA, and other relevant agencies;

(3) the programs have allocated appropriate resources to each of the research objectives; and

(4) there exist suitable mechanisms for transitioning the research results into FAA's operational technologies and procedures and certification activities.

(b) REPORT.—A report containing the results of such review shall be provided to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than 18 months after the date of enactment of this Act.

SEC. 1014. REVIEW OF FAA'S AVIATION SAFETY-RELATED RESEARCH PROGRAMS.

(a) REVIEW.—Using amounts made available under section 48102(a) of title 49, United States Code, the Administrator shall conduct a review of the FAA's aviation safety-related research programs. The review shall assess whether—

(1) the programs have well-defined, prioritized, and appropriate research objectives;

(2) the programs are properly coordinated with the safety research programs of NASA and other relevant Federal agencies;

(3) the programs have allocated appropriate resources to each of the research objectives;

(4) the programs should include a determination about whether a survey of participants across the air transportation system is an appropriate way to study safety risks within such system; and

(5) there exist suitable mechanisms for transitioning the research results from the programs into the FAA's operational technologies and procedures and certification activities in a timely manner.

(b) AVIATION SAFETY-RELATED RESEARCH PROGRAMS TO BE ASSESSED.—The FAA aviation safety-related research programs to be assessed under the review shall include, at a minimum, the following:

(1) Air traffic control/technical operations human factors.
(2) Runway incursion reduction.
(3) Flightdeck/maintenance system integration human factors.
(4) Airports technology research—safety.
(5) Airport Cooperative Research Program—safety.
(6) Weather Program.
(7) Atmospheric hazards/digital system safety.
(8) Fire research and safety.
(9) Propulsion and fuel systems.
(10) Advanced materials/structural safety.
(11) Aging aircraft.
(12) Aircraft catastrophic failure prevention research.
(13) Aeromedical research.
(14) Aviation safety risk analysis.
(15) Unmanned aircraft systems research.

(c) REPORT.—Not later than 14 months after the date of enactment of this Act, the Administrator shall submit to Congress a report on the results of such review.

II. PURPOSE AND SUMMARY

The purpose of H.R. 970 is to reauthorize research and development activities at the Federal Aviation Administration for fiscal years 2011–2014 and adds specific direction to existing programs to enhance the research that is currently being performed. Additionally, the bill requires an assessment of existing research and development activities in a number of programs to encourage coordination and streamlining of research and discourage duplication.

III. BACKGROUND AND NEED FOR THE LEGISLATION

The Federal Aviation Administration (FAA) was created to develop the nation's air commerce system and promote aviation safety. As part of the Airport Development and Airway Trust Fund established by Congress in 1982, a comprehensive research and development program was put in place to maintain a safe and efficient air transportation system. In 2003, Congress passed Vision 100—Century of Aviation Reauthorization Act (P.L. 108–176) that authorized funding for FAA's activities, including research and development, for fiscal years 2003 through 2007. P.L. 108–176 also established the Next Generation Air Transportation System's Joint Planning and Development Office (JPDO) in Title VII, Aviation Research, to manage work related to planning, research, development and creation of a transition plan for the implementation of the Next Generation Air Transportation System. Since 2007 Congress has attempted without success to complete legislative work on a comprehensive FAA reauthorization, including these programs. As civil aviation is such a critical element of our economy, FAA's research and development program plays a crucial role ensuring that the agency's modernization and safety programs are properly focused and well planned. H.R. 970 reauthorizes appropriations for the Federal Aviation Administration's research and development programs for fiscal years 2011 through 2014.

IV. HEARING SUMMARY

The Space and Aeronautics Subcommittee of the Committee on Science, Space, and Technology held a hearing relevant to H.R. 970 on Wednesday, February 16, 2011. The hearing entitled *"A Review of the Federal Aviation Administration's Research and Development Programs"* focused on the Federal Aviation Administration's portfolio of research and development programs. The hearing largely focused on FAA's Next Generation Air Traffic System (NextGen) designed to modernize our nation's air traffic control system and now in early stages of deployment.

The Subcommittee received testimony from Ms. Victoria Cox, Vice President of the FAA's Air Traffic Organization; the Hon. Calvin Scovel, Inspector General of the Department of Transportation; Dr. John Hansman, professor of aeronautics and astronautics at the Massachusetts Institute of Technology and chair of the FAA's advisory committee on research and development; and Mr. Peter Bunce, CEO of the General Aviation Manufacturers Association.

V. Committee Consideration

On March 9, 2011, H.R. 970, a bill to reauthorize the civil aviation research and development projects and activities of the Federal Aviation Administration was introduced by Congressman Ralph Hall with original cosponsor Steven Palazzo (R–MS) and referred to the Committee on Science, Space, and Technology. On March 17, 2011, the Committee on Science, Space, and Technology met in open markup session and ordered H.R. 970 favorably reported, as amended, by a record vote of 17 yeas and 13 nays.

VI. Committee Votes

Clause 3(b) of rule XIII of the Rules of the House of Representatives requires the Committee to list the record votes on the motion to report legislation and amendments thereto. A motion to order H.R. 970, favorably reported to the House, as amended, was agreed to by a record vote of 17 yeas and 13 nays.

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY - 112th

DATE: 3/17/2011 AMENDMENT NO. ROLL CALL NO. 4

Bill: H.R. 970

Final Passage of H.R. 970

the " Federal Aviation Research and Development Reauthorization Act of 2011"

Passed 17-13

MEMBER	AYE	NO	PRESENT	NOT VOTING
1 Mr. HALL, *Chair* - TX	X			
2 Mr. SENSENBRENNER - WI				
3 Mr. SMITH - TX				
4 Mr. ROHRABACHER - CA				
5 Mr. BARTLETT - MD				
6 Mr. LUCAS - OK	X			
7 Mrs. BIGGERT - IL	X			
8 Mr. AKIN - MO	X			
9 Mr. NEUGEBAUER - TX	X			
10 Mr. McCAUL - TX	X			
11 Mr. BROUN - GA	X			
12 Mrs. ADAMS - FL	X			
13 Mr. QUAYLE - AZ	X			
14 Mr. FLEISCHMANN - TN	X			
15 Mr. RIGELL - VA	X			
16 Mr. PALAZZO - MS	X			
17 Mr. BROOKS - AL	X			
18 Mr. HARRIS - MD	X			
19 Mr. HULTGREN - IL	X			
20 Mr. CRAVAACK - MN	X			
21 Mr. BUCSHON - IN	X			
22 Mr. BENISHEK - MI				
23 Vacancy				
1 Ms. JOHNSON, *Ranking* - TX		X		
2 Mr. COSTELLO - IL				
3 Ms. WOOLSEY - CA		X		
4 Ms. LOFGREN - CA		X		
5 Mr. WU - OR		X		
6 Mr. MILLER - NC		X		
7 Mr. LIPINSKI - IL		X		
8 Ms. GIFFORDS - AZ				
9 Ms. EDWARDS - MD		X		
10 Ms. FUDGE - OH		X		
11 Mr. LUJÁN - NM		X		
12 Mr. TONKO - NY		X		
13 Mr. McNERNEY - CA		X		
14 Mr. SARBANES - MD				
15 Ms. SEWELL - AL				
16 Ms. WILSON - FL		X		
17 Mr. CLARKE - MI		X		
TOTALS	17	13		

During consideration of H.R. 970 the following amendments were considered:

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
Full Committee Markup
March 17, 2011

AMENDMENT ROSTER

H. R. 970, the "Federal Aviation Research and Development Reauthorization Act of 2011"

No.	Amendment	Summary	Results
1	Mr. Hall (ANS) (342)	Makes technical changes to the bill providing for incorporation of text into larger legislative vehicle.	Agreed to by voice vote
2	Mr. Miller (346)	Increases the funding in FY 2011 by $601,000 and in each of fiscal years 2012-2014 by $1.026 million. Sets the level of funding for research on Atmospheric Hazards-Aircraft Icing/Digital Safety Systems at $4.482 million for each fiscal year 2011-2014	Defeated by roll call vote 13Yeas and 16Nays
3	Mr. McNerney (347)	Increases the funding in FY 2011 by $1.043 million and in each of fiscal years 2012-2014 by $1.788 million. Sets the level of funding for fire research and safety at $7.799 million for each fiscal year 2011-2014	Defeated by roll call vote 11Yeas and 17Nays.
4	Mr. Costello (004)	Allows the Administrator to set up a Center of Excellence to perform research and development on issues related to aviation human resources	Agreed to by voice vote
5	Ms. Edwards (348)	Increases the overall funding in FY 2011 by $955,000 and in each of fiscal years 2012-2014 by $1.632 million. Sets the level of funding for research on Flightdeck/ Maintenance/System Integration Human Factors at $7.128 million for each fiscal year 2011-2014	Defeated by roll call vote 13 Yeas and 17Nays
6	Mr. Palazzo (003)	Amends Section 1003 to state that if the other accounts described in the National Aviation Research Plan are authorized then these activities are authorized.	Agreed to by voice vote
7	Dr. Broun (345)	Amends Sections 1009, 1012 and 1013 to ensure the funding comes from the authorized amounts in the bill. Amends Section 1012 and 1013 to require the FAA Administrator to perform an assessment of activities rather than the National Research Council.	Agreed to by voice vote
8	Mr. Miller (003)	Amends Sec. 1013 to require the assessment to include a determination about whether a survey of participants across the air transportation system is an appropriate way to study safety risks	Agreed to by voice vote

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY - 112th

DATE: 3/17/2011 AMENDMENT NO. 2 ROLL CALL NO. 1

Bill: H.R. 970

SPONSOR of AMEND: Mr. Miller, NC (346)

DEFEATED 13-16

MEMBER	AYE	NO	PRESENT	NOT VOTING
1 Mr. HALL, *Chair* - TX		X		
2 Mr. SENSENBRENNER - WI				
3 Mr. SMITH - TX				
4 Mr. ROHRABACHER - CA		X		
5 Mr. BARTLETT - MD				
6 Mr. LUCAS - OK		X		
7 Mrs. BIGGERT - IL		X		
8 Mr. AKIN - MO				
9 Mr. NEUGEBAUER - TX		X		
10 Mr. McCAUL - TX		X		
11 Mr. BROUN - GA		X		
12 Mrs. ADAMS - FL		X		
13 Mr. QUAYLE - AZ		X		
14 Mr. FLEISCHMANN - TN		X		
15 Mr. RIGELL - VA		X		
16 Mr. PALAZZO - MS		X		
17 Mr. BROOKS - AL		X		
18 Mr. HARRIS - MD		X		
19 Mr. HULTGREN - IL		X		
20 Mr. CRAVAACK - MN		X		
21 Mr. BUCSHON - IN				
22 Mr. BENISHEK - MI				
23 Vacancy				
1 Ms. JOHNSON, *Ranking* - TX	X			
2 Mr. COSTELLO - IL	X			
3 Ms. WOOLSEY - CA				
4 Ms. LOFGREN - CA	X			
5 Mr. WU - OR	X			
6 Mr. MILLER - NC	X			
7 Mr. LIPINSKI - IL	X			
8 Ms. GIFFORDS - AZ				
9 Ms. EDWARDS - MD	X			
10 Ms. FUDGE - OH	X			
11 Mr. LUJÁN - NM	X			
12 Mr. TONKO - NY	X			
13 Mr. McNERNEY - CA	X			
14 Mr. SARBANES - MD				
15 Ms. SEWELL - AL	X			
16 Ms. WILSON - FL	X			
17 Mr. CLARKE - MI				
TOTALS	13	16		

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY - 112th

DATE: 3/17/2011 AMENDMENT NO. 3 ROLL CALL NO. 2

Bill: H.R. 970

SPONSOR of AMEND: Mr. McNerney, CA (347)

DEFEATED 11-17

MEMBER	AYE	NO	PRESENT	NOT VOTING
1 Mr. HALL, *Chair* - TX		X		
2 Mr. SENSENBRENNER - WI				
3 Mr. SMITH - TX				
4 Mr. ROHRABACHER - CA		X		
5 Mr. BARTLETT - MD				
6 Mr. LUCAS - OK		X		
7 Mrs. BIGGERT - IL		X		
8 Mr. AKIN - MO				
9 Mr. NEUGEBAUER - TX		X		
10 Mr. McCAUL - TX		X		
11 Mr. BROUN - GA		X		
12 Mrs. ADAMS - FL		X		
13 Mr. QUAYLE - AZ		X		
14 Mr. FLEISCHMANN - TN		X		
15 Mr. RIGELL - VA		X		
16 Mr. PALAZZO - MS		X		
17 Mr. BROOKS - AL		X		
18 Mr. HARRIS - MD		X		
19 Mr. HULTGREN - IL		X		
20 Mr. CRAVAACK - MN		X		
21 Mr. BUCSHON - IN		x		
22 Mr. BENISHEK - MI				
23 Vacancy				
1 Ms. JOHNSON, *Ranking* - TX	X			
2 Mr. COSTELLO - IL	X			
3 Ms. WOOLSEY - CA				
4 Ms. LOFGREN - CA	X			
5 Mr. WU - OR				
6 Mr. MILLER - NC	X			
7 Mr. LIPINSKI - IL	X			
8 Ms. GIFFORDS - AZ				
9 Ms. EDWARDS - MD	X			
10 Ms. FUDGE - OH	X			
11 Mr. LUJÁN - NM	X			
12 Mr. TONKO - NY	X			
13 Mr. McNERNEY - CA	X			
14 Mr. SARBANES - MD				
15 Ms. SEWELL - AL				
16 Ms. WILSON - FL	X			
17 Mr. CLARKE - MI				
TOTALS	11	17		

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY - 112th

DATE: 3/17/2011 AMENDMENT NO. ROLL CALL NO. 4

Bill: H.R. 970

Final Passage of H.R. 970

the " Federal Aviation Research and Development Reauthorization Act of 2011"

Passed 17-13

MEMBER	AYE	NO	PRESENT	NOT VOTING
1 Mr. HALL, *Chair* - TX	X			
2 Mr. SENSENBRENNER - WI				
3 Mr. SMITH - TX				
4 Mr. ROHRABACHER - CA				
5 Mr. BARTLETT - MD				
6 Mr. LUCAS - OK	X			
7 Mrs. BIGGERT - IL	X			
8 Mr. AKIN - MO	X			
9 Mr. NEUGEBAUER - TX	X			
10 Mr. McCAUL - TX	X			
11 Mr. BROUN - GA	X			
12 Mrs. ADAMS - FL	X			
13 Mr. QUAYLE - AZ	X			
14 Mr. FLEISCHMANN - TN	X			
15 Mr. RIGELL - VA	X			
16 Mr. PALAZZO - MS	X			
17 Mr. BROOKS - AL	X			
18 Mr. HARRIS - MD	X			
19 Mr. HULTGREN - IL	X			
20 Mr. CRAVAACK - MN	X			
21 Mr. BUCSHON - IN	X			
22 Mr. BENISHEK - MI				
23 Vacancy				
1 Ms. JOHNSON, *Ranking* - TX		X		
2 Mr. COSTELLO - IL				
3 Ms. WOOLSEY - CA		X		
4 Ms. LOFGREN - CA		X		
5 Mr. WU - OR		X		
6 Mr. MILLER - NC		X		
7 Mr. LIPINSKI - IL		X		
8 Ms. GIFFORDS - AZ				
9 Ms. EDWARDS - MD		X		
10 Ms. FUDGE - OH		X		
11 Mr. LUJÁN - NM		X		
12 Mr. TONKO - NY		X		
13 Mr. McNERNEY - CA		X		
14 Mr. SARBANES - MD				
15 Ms. SEWELL - AL				
16 Ms. WILSON - FL		X		
17 Mr. CLARKE - MI		X		
TOTALS	17	13		

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY - 112th

DATE: 3/17/2011 AMENDMENT NO. 5 ROLL CALL NO. 3

Bill: H.R. 970

SPONSOR of AMEND: Ms. Edwards, MD (348)

DEFEATED 13-17

MEMBER	AYE	NO	PRESENT	NOT VOTING
1 Mr. HALL, *Chair* - TX		X		
2 Mr. SENSENBRENNER - WI				
3 Mr. SMITH - TX				
4 Mr. ROHRABACHER - CA		X		
5 Mr. BARTLETT - MD				
6 Mr. LUCAS - OK		X		
7 Mrs. BIGGERT - IL		X		
8 Mr. AKIN - MO				
9 Mr. NEUGEBAUER - TX		X		
10 Mr. McCAUL - TX		X		
11 Mr. BROUN - GA		X		
12 Mrs. ADAMS - FL		X		
13 Mr. QUAYLE - AZ		X		
14 Mr. FLEISCHMANN - TN		X		
15 Mr. RIGELL - VA		X		
16 Mr. PALAZZO - MS		X		
17 Mr. BROOKS - AL		X		
18 Mr. HARRIS - MD		X		
19 Mr. HULTGREN - IL		X		
20 Mr. CRAVAACK - MN		X		
21 Mr. BUCSHON - IN		X		
22 Mr. BENISHEK - MI				
23 Vacancy				
1 Ms. JOHNSON, *Ranking* - TX	X			
2 Mr. COSTELLO - IL				
3 Ms. WOOLSEY - CA	X			
4 Ms. LOFGREN - CA	X			
5 Mr. WU - OR	X			
6 Mr. MILLER - NC	X			
7 Mr. LIPINSKI - IL	X			
8 Ms. GIFFORDS - AZ				
9 Ms. EDWARDS - MD	X			
10 Ms. FUDGE - OH	X			
11 Mr. LUJÁN - NM	X			
12 Mr. TONKO - NY	X			
13 Mr. McNERNEY - CA	X			
14 Mr. SARBANES - MD				
15 Ms. SEWELL - AL				
16 Ms. WILSON - FL	X			
17 Mr. CLARKE - MI	X			
TOTALS	13	17		

VII. Summary of Major Provisions of the Bill

H.R. 970 authorizes the Federal Aviation Administration's (FAA) Research and Development programs for fiscal years 2011 through 2014 funded through the Research, Engineering, and Development (RE&D) account. The bill also authorizes R&D programs listed in the FAA's *National Aviation Research Plan* that are funded out of agency's Facilities and Equipment account, and the Airport Improvement Program account, but does not specify amounts. H.R. 970 requires FAA to research and develop technologies to ensure the safe operation of Unmanned Aircraft Systems in our national airspace system. It requires the FAA to continue research on improved runway surfaces and engineered material restraining systems. The bill directs the FAA to establish a research program on methods to improve certification of new technologies to enable faster introduction of these technologies into our national airspace system. It extends the Airport Cooperative Research Program, which is designed to help small- and medium-sized airports overcome common operations challenges. The bill permits FAA, on a case-by-case basis, to increase the government's cost share in the Centers of Excellence program by 25% if the Administrator determines that a center would otherwise be unable to carry out authorized research. Under the bill the FAA may establish a new Center of Excellence for Aviation Human Resource Research. It permits the agency to continue researching the effects of aviation on the environment, to coordinate the research with NASA, and to develop a five year research plan with goals, objectives, milestones, and budgets. H.R. 970 directs FAA to continue a research program to develop an unleaded aviation fuel for general aviation piston aircraft, and directs research into technologies to develop jet fuel from alternative sources such as coal, hydrogen, natural gas, and biomass. Finally, the bill requires FAA to perform assessments of its energy-and-environment-related research program and its safety-related research program.

VIII. Committee Views

H.R. 970 authorizes appropriations for all FAA research and development activities, including those funded through the Research, Engineering and Development account, the Facilities and Equipment account, and the Airport Improvement Program account. FAA publishes annually its National Aviation Research Plan that calls out each agency research and development activity and associated research goals, objectives, timelines, proposed budget, and the account from which the activity is funded.

The Committee notes given the current fiscal situation of the country, the bill makes modest spending reductions for the Research, Engineering and Development account authorization to the FY08 enacted level. Thus, the Committee does not recommend amounts FAA should invest on each activity, but rather expects the FAA Administrator to establish priorities in research and development when allocating funds.

UNMANNED AIRCRAFT SYSTEMS

Unmanned Aircraft Systems (UAS) have been used to great advantage by our nation's military. They have proven to be excellent

reconnaissance and surveillance platforms, and are able to remain aloft for periods extending up to 30 hours. Their size can range from hand-held to very large systems weighing over 10,000 pounds, and their operating capabilities are equally broad, from low and slow loitering to high-altitude, long duration flights.

UAS's can provide critical public safety and homeland security capabilities here at home, such as border protection, maritime surveillance, and natural disaster response surveillance and communications. However, to enable operators to fly missions safely and routinely in the national airspace system, it is imperative that the Federal Aviation Administration research and develop technologies and systems that will allow a UAS to operate safely in the same airspace with general aviation and commercial aircraft.

In the same manner that FAA is charged with developing technologies to improve the reliability of aircraft, the Committee directs the agency to perform similar research on UAS vehicles to ensure development of robust designs, parts, and processes. Additionally, the Committee directs FAA to undertake human factors research on the operation of UAS, and to develop airspace simulation capabilities to characterize and measure the operation of UAS in our national airspace system.

RESEARCH ON RUNWAYS

The Committee is directing FAA to conduct research on improved runway surfaces and engineered material restraining systems for use at general aviation and commercial airports. Similar research has been authorized in previous bills, but this provision amends section 48102(a) of title 49, United States Code, to give this activity continuing authority. Research and technology demonstrations related to engineering materials restraining systems have the potential to significantly improve operations at general aviation airports, and the Committee encourages FAA to carry out activities and continue to seek improvements in this area.

RESEARCH ON DESIGN FOR CERTIFICATION

In its report Decadal Survey of Civil Aeronautics—Foundation for the Future, the National Research Council stated that "As systems become more complex, methods to ensure that new technologies can be readily applied to certified systems become more difficult to validate. NASA, in cooperation with the Federal Aviation Administration (FAA), should anticipate the need to certify new technology before its introduction, and it should conduct research on methods to improve both confidence in, and the timeliness of, certification." The committee shares the National Research Council's view, directing FAA to establish a research program on methods to improve certification of new technologies for introduction into the national airspace system. In order to ensure that the research program addresses the critical research needs, the Committee supports an independent review of the research plan.

AIRPORT COOPERATIVE RESEARCH PROGRAM

In P.L. 108–176, the Vision 100—Century of Aviation Reauthorization Act, the Airport Cooperative Research Program was authorized as a pilot program to "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. . . .” The Committee finds this program has produced research results and technologies designed to help smaller- and medium-sized airports address a variety of operational challenges, and thus extends the authorization of the program.

CENTERS OF EXCELLENCE

In order to ensure that meritorious research is not precluded by an inability to attract sufficient outside matching funds, the Committee grants the FAA Administrator the ability to increase the federal government’s matching share for an individual center for any fiscal year only if the Administrator determines that without additional funds the center would be unable to carry out the authorized activities. However, the Committee does not intend that such reduced matching funds requirements result in a significantly unbalanced allocation of research funding among the institutions in any given Center of Excellence. The Committee has directed the FAA to report on the activities and funding allocations of the Centers of Excellence program on an annual basis to help the Committee better evaluate the progress of the Centers of Excellence.

The Committee authorizes the FAA, at its discretion and out of available funds, to establish a center of excellence dedicated to research and development on human performance issues affecting aviation safety and efficiency. Critical skills positions in the aviation industry are demanding and unforgiving, and violations of operating standards can have effects on aviation safety. FAA traffic forecasts show a steady increase in the number of flight operations in our national airspace system, putting increasing pressure on individuals to perform at the highest levels. As our air traffic control system modernizes, and automation plays a larger role in its operation, information gleaned from research and development on the appropriate skills and number of individuals needed to maintain a safe national airspace will be critical.

INTERAGENCY RESEARCH ON AVIATION AND THE ENVIRONMENT

The Committee supports research into aviation’s effect on the environment in order to ensure future growth of this essential transportation mode. Our nation needs to better measure aviation’s environmental effects and evaluate potential approaches to address them. The Committee is thus authorizing the FAA, at its discretion and in coordination with the National Aeronautics and Space Administration, to maintain its research program to assess aviation’s effect on the environment. In order to ensure such research is coordinated and non-duplicative, FAA is directed to provide to Congress a survey of similar interagency research now being performed, future research objectives, proposed tasks, and a five year budgetary profile.

AVIATION FUEL RESEARCH AND DEVELOPMENT

The Committee is aware that the FAA has been carrying out R&D on technologies to allow existing general aviation piston engines to operate safely using unleaded aviation fuel, and the Com-

mittee supports such research. However, the Committee believes that it is important for the FAA to coordinate where appropriate with NASA on such research in view of NASA's experience in engine technology R&D, and to collaborate with manufacturers, fuel producers, aviation consumers, and other appropriate Federal agencies, to ensure the highest degree of coordination and cooperation among all stakeholders, and to advance adoption of new technologies and fuels once they have been proven safe.

The Committee supports research on the development and certification of alternative sources of feedstock that can be used in the production of jet fuel, and provides for the participation of industry and educational and research institutions in carrying out this program. The committee believes our nation is rich with other forms of hydrocarbons that can be exploited to supplement conventional sources of feedstock.

REVIEW OF FAA'S ENERGY & ENVIRONMENT AND AVIATION SAFETY-RELATED RESEARCH PROGRAMS

The Committee believes that the FAA's energy and environment-related research programs would benefit from a review of their research objectives, the degree of coordination with research programs of other relevant federal agencies, the resource allocations devoted to each of the research objectives, and whether there exist suitable mechanisms for transitioning research results into operational technologies. Thus the Committee directs FAA to carry-out such a review and provide results within 18 months of enactment.

The Committee has concerns about FAA's safety-related research programs and directs the FAA to conduct a review of the research objectives, the degree of coordination with research programs of other relevant federal agencies, the resource allocations devoted to each of the research objectives, a determination about whether a survey of participants across the air transportation system is an appropriate way to study safety risks within such system, and whether there exist suitable mechanisms for transitioning research results into operational technologies. The FAA is expected to provide results within 14 months of enactment.

IX. COMMITTEE OVERSIGHT FINDINGS

Pursuant to clause 3(c)(1) of rule XIII of the Rules of the House of Representatives, the Committee held an oversight hearing and made findings that are reflected in the descriptive portions of this report.

X. STATEMENT OF GENERAL PERFORMANCE GOALS AND OBJECTIVES

In accordance with clause 3(c)(4) of rule XIII of the Rules of the House of Representatives, the performance goals and objectives of the Committee are reflected in the descriptive portions of this report, including the goal to reauthorize civil aviation research and development programs at the Federal Aviation Administration in a fiscally responsible manner while ensuring modernization and safety programs are properly focused and well planned.

XI. New Budget Authority, Entitlement Authority, and Tax Expenditures

In compliance with clause 3(c)(2) of rule XIII of the Rules of the House of Representatives, the Committee adopts as its own the estimate of new budget authority, entitlement authority, or tax expenditures or revenues contained in the cost estimate prepared by the Director of the Congressional Budget Office pursuant to section 402 of the Congressional Budget Act of 1974.

XII. Advisory on Earmarks

In compliance with clause 9(e), 9(f), and 9(g) of rule XXI, the Committee finds that H.R. 970, the "Federal Aviation Research and Development Reauthorization Act of 2011," contains no earmarks.

XIII. Committee Cost Estimate

The Committee adopts as its own the cost estimate prepared by the Director of the Congressional Budget Office pursuant to section 402 of the Congressional Budget Act of 1974.

XIV. Congressional Budget Office Estimate

Pursuant to clause 3(c)(3) of rule XIII of the Rules of the House of Representatives, the following is the cost estimate provided by the Congressional Budget Office pursuant to section 402 of the Congressional Budget Act of 1974.

March 22, 2011.

Hon. Ralph M. Hall,
Chairman, Committee on Science, Space, and Technology,
House of Representatives, Washington, DC.

Dear Mr. Chairman: The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 970, the Federal Aviation Research and Development Reauthorization Act of 2011.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Megan Carroll.

Sincerely,

Douglas W. Elmendorf.

Enclosure.

H.R. 970—Federal Aviation Research and Development Reauthorization Act of 2011

Summary: H.R. 970 would authorize the appropriation of funds for research related to aviation. CBO estimates that implementing the bill would cost $412 million over the 2011–2016 period, assuming appropriation of the authorized amounts. Enacting H.R. 970 would not affect direct spending or revenues; therefore, pay-as-you-go procedures do not apply.

H.R. 970 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments.

Estimated cost to the Federal Government: The estimated budgetary impact of H.R. 970 is shown in the following table. The costs of this legislation fall within budget function 400 (transportation).

	By fiscal year, in millions of dollars—						
	2011	2012	2013	2014	2015	2016	2011–2016
CHANGES IN SPENDING SUBJECT TO APPROPRIATION							
Aviation Research Spending Under Current Law:							
Authorization Level	191	0	0	0	0	0	191
Estimated Outlays	186	106	43	20	17	20	392
Proposed Changes:							
Authorization Level	−26	147	147	147	0	0	415
Estimated Outlays	−14	69	125	144	69	19	412
Spending Under H.R. 970:							
Authorization Level	165	147	147	147	0	0	606
Estimated Outlays	172	175	168	164	86	39	804

a. A full-year appropriation for aviation programs in 2011 has not yet been enacted. For this estimate, CBO assumes that the partial-year funding already provided will be increased proportionately—annualized—to provide full-year funding.

Basis of estimate: For this estimate, CBO assumes that H.R. 970 will be enacted in the spring of 2011. Outlay estimates are based on historical spending patterns for affected programs and on information provided by the Federal Aviation Administration (FAA).

H.R. 970 would authorize appropriations over the 2011–2014 period for the FAA's research, engineering, and development program. On an annualized basis, discretionary funding for that program currently totals $191 million under Public Law 112–6, Additional Continuing Appropriation Amendments, 2011. CBO estimates that spending under current law will total $392 million over the 2011–2016 period. That estimate includes outlays stemming from authority provided under Public Law 112–6 and from funding provided prior to 2011.

H.R. 970 would authorize appropriations totaling $165 million in 2011 ($26 million less than the annualized amount that is currently available in 2011 under Public Law 112–6) and $147 million each year between 2012 and 2014 for aviation-related research activities. CBO estimates that fully funding H.R. 970 would result in additional spending totaling $412 million over the 2011–2016 period.

In addition, H.R. 970 would authorize additional spending for research and development related to designing and managing the national airspace and efforts to enhance safety, capacity, and environmental attributes of airports. Any spending for those activities under H.R. 970 would be subject to appropriation. Furthermore, FAA's authority to carry out those measures would be contingent on enactment of legislation that reauthorizes appropriations for FAA's programs that traditionally receive funding for facilities and equipment related to the air traffic control system and for grants to airports. Because of that contingency, this estimate does not include any additional spending to fully implement those research initiatives, which CBO estimates would cost about $650 million over the 2011–2016 period, assuming appropriation of the necessary amounts. That amount is based on information from the FAA about the cost of research and development activities related to airports and the air traffic control system.

Pay-As-You-Go considerations: None.

Estimated impact on the private sector: H.R. 970 contains no intergovernmental or private-sector mandates as defined in UMRA and would impose no costs on state, local, or tribal governments.

Estimate prepared by: Federal Costs: Megan Carroll; Impact on State, Local, and Tribal Governments: Ryan Miller; Impact on the Private Sector: Samuel Wice.

Estimate approved by: Theresa Gullo, Deputy Assistant Director for Budget Analysis.

XV. FEDERAL MANDATES STATEMENT

The Committee adopts as its own the estimate of Federal mandates prepared by the Director of the Congressional Budget Office pursuant to section 423 of the Unfunded Mandates Reform Act.

XVI. FEDERAL ADVISORY COMMITTEE STATEMENT

No advisory committees within the meaning of section 5(b) of the Federal Advisory Committee Act were created by this legislation.

XVII. APPLICABILITY TO LEGISLATIVE BRANCH

The Committee finds that the legislation does not relate to the terms and conditions of employment or access to public services or accommodations within the meaning of section 102(b)(3) of the Congressional Accountability Act.

XVIII. SECTION-BY-SECTION ANALYSIS

Sec. 1001. Short title

This section establishes the short title of the bill as the "Federal Aviation Research and Development Reauthorization Act of 2011".

Sec. 1002. Definitions

This section provides definitions for terms used in this Act.

Sec. 1003. Authorization of appropriations

This section amends existing law and authorizes $165,020,000 for fiscal year 2011, and $146,827,000 for each of the fiscal years 2012 through 2014.

Sec. 1004. Unmanned aircraft systems

Section 1004 requires FAA to conduct research on technologies and methods to assess the risk of, and prevent the failure of, products, parts and processes used in any unmanned aircraft system that operates in the national airspace system. Also requires human factors research on operating unmanned aircraft systems, and development of simulation models that realistically emulate the national airspace system for research on operating a UAS with general aviation and commercial aircraft.

Sec. 1005. Research on runways

This section authorizes the FAA to maintain a program of research and technology related to improved runway surfaces and engineered material restraining systems for runways at both general aviation airports and airports with commercial air carriers.

Sec. 1006. Research on design for certification

Section 1006 requires FAA to conduct research on methods to improve the timeliness of certification for new technologies to be used

in the national airspace system. Within 6 months following the date of enactment, requires the development of a research plan that contains the research objectives, proposed tasks, milestone, and a 5-year budgetary profile. Directs the FAA to engage the National Research Council for an independent review of the plan, and to provide their results to the House and Senate committees of jurisdiction.

Sec. 1007. Airport Cooperative Research Program

This section amends existing law to extend the Airport Cooperative Research Program.

Sec. 1008. Centers of Excellence

Section 1008 amends existing law, stating that the U.S. Government's share of establishing and operating a center and associated research activities shall not exceed 50 percent and further provides that only if the Administrator determines that without additional funds the center would be unable to carry out the authorized activities such share may be increased to a maximum of 75 percent. Requires an annual report to Congress that lists the research projects carried out by each Center of Excellence, amounts and sources of funding, and the institutions participating in each project.

Sec. 1009. Center of Excellence for Aviation Human Resource Research

This section outlines that out of available agency funds, the Administrator may establish a center of excellence to conduct research on human performance in the air transportation system environment, including research on air traffic controllers, dispatchers, and pilots. May also conduct related lines of research, development and evaluation of training programs for air traffic controllers, aviation safety inspectors, airway transportation safety specialists, and engineers, as well as best practices for recruitment into the aviation field for industry critical positions.

Sec. 1010. Interagency research on aviation and the environment

Section 1010 permits the FAA, in coordination with NASA, to continue in its discretion a research program to assess the effect of aviation on the environment, and if warranted, to evaluate approaches to mitigate it. Requires a research plan and stipulates that the plan include an inventory of current interagency research being conducted in this area, future research objectives, proposed tasks, milestones, and a five year budget profile. The plan is to be delivered to Congress within one year after enactment.

Sec. 1011. Aviation Fuel Research and Development Program

Section 1011 requires the FAA, in coordination with NASA, to continue research and development activities to qualify an unleaded aviation fuel for piston engine aircraft, and to safely transition this technology. Not later than 120 days following enactment, FAA is to develop a research plan including objectives, timetable, and recommended policies and guidelines needed to facilitate a transition to unleaded fuel. Directs the FAA to work with aviation fuel consumers, fuel producers, and industry. Requires FAA to re-

port to Congress within 270 days of enactment on the plan and recommended policies and guidelines.

Sec. 1012. Research program on alternative jet fuel technology for civil aircraft

This section requires the Secretary of Transportation to conduct research related to developing and certifying jet fuel from alternative sources (such as coal, natural gas, biomass, ethanol, butanol, and hydrogen) through grants or other arrangements, including reimbursable agreements with other government agencies. Directs the Secretary to provide for participation by educational and research institutions.

Sec. 1013. Review of FAA's energy- and environment-related research programs

This section requires the FAA to conduct a review of the agency's energy- and environment-related research programs, and to provide Congress with a report on the review within 18 months of enactment.

Sec. 1014. Review of FAA's aviation safety-related research programs

This section directs the FAA to review all of the agency's aviation-safety related research programs as well as assess the usefulness of safety surveys. A report of the review is due within 14 months of enactment.

XIX. Changes in Existing Law Made by the Bill, as Reported

In compliance with clause 3(e) of rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman):

TITLE 49, UNITED STATES CODE

* * * * * * *

SUBTITLE VII—AVIATION PROGRAMS

* * * * * * *

PART A—AIR COMMERCE AND SAFETY

* * * * * * *

SUBPART III—SAFETY

* * * * * * *

CHAPTER 445—FACILITIES, PERSONNEL, AND RESEARCH

* * * * * * *

§ 44504. Improved aircraft, aircraft engines, propellers, and appliances

(a) * * *

(b) RESEARCH.—The Administrator shall conduct or supervise research—

(1) * * *

* * * * * * *

(6) to develop advanced aircraft fuels with low flammability and technologies that will contain aircraft fuels to minimize post-crash fire hazards; **[**and**]**

(7) to develop 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*

(8) in conjunction with other Federal agencies, as appropriate, to develop technologies and methods to assess the risk of and prevent defects, failures, and malfunctions of products, parts, and processes for use in all classes of unmanned aircraft systems that could result in a catastrophic failure of the unmanned aircraft that would endanger other aircraft in the national airspace system.

* * * * * * *

§ 44505. Systems, procedures, facilities, and devices

(a) * * *

(b) RESEARCH ON HUMAN FACTORS AND SIMULATION MODELS.—The Administrator shall conduct or supervise research—

(1) * * *

* * * * * * *

(4) to identify innovative and effective corrective measures for human errors that adversely affect air safety; **[**and**]**

(5) to develop dynamic simulation models of the air traffic control system and airport design and operating procedures that will provide analytical technology—

(A) * * *

* * * * * * *

(C) to test proposed revisions in airport and air traffic control operations programs**[**.**]***;*

(6) to develop a better understanding of the relationship between human factors and unmanned aircraft system safety; and

(7) to develop dynamic simulation models for integrating all classes of unmanned aircraft systems into the national airspace system without any degradation of existing levels of safety for all national airspace system users.

(c) RESEARCH ON DEVELOPING AND MAINTAINING A SAFE AND EFFICIENT SYSTEM.—The Administrator shall conduct or supervise research on—

(1) * * *

* * * * * * *

(3) improved runway surfaces;

(4) engineered material restraining systems for runways at both general aviation airports and airports with commercial air carrier operations;

[(3)**]** *(5)* human performance in the air transportation environment;

[(4)**]** *(6)* aviation safety and security;

[(5)**]** *(7)* the supply of trained air transportation personnel, including pilots and mechanics; and

[(6)**]** *(8)* other aviation issues related to developing and maintaining a safe and efficient air transportation system.

(d) RESEARCH ON DESIGN FOR CERTIFICATION.—

(1) RESEARCH.—Not later than 1 year after the date of enactment of the Federal Aviation Research and Development Reauthorization Act of 2011, the Administrator shall conduct research on methods and procedures to improve both confidence in and the timeliness of certification of new technologies for their introduction into the national airspace system.

(2) RESEARCH PLAN.—Not later than 6 months after the date of enactment of the Federal Aviation Research and Development Reauthorization Act of 2011, the Administrator shall develop a plan for the research under paragraph (1) that contains the objectives, proposed tasks, milestones, and 5-year budgetary profile.

(3) REVIEW.—The Administrator shall enter into an arrangement with the National Research Council to conduct an independent review of the plan developed under paragraph (2) and shall provide the results of that review to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than 18 months after the date of enactment of the Federal Aviation Research and Development Reauthorization Act of 2011.

[(d)**]** *(e)* COOPERATIVE AGREEMENTS.—The Administrator may enter into cooperative agreements on a cost-shared basis with Federal and non-Federal entities that the Administrator may select in order to conduct, encourage, and promote aviation research, engineering, and development, including the development of prototypes and demonstration models.

* * * * * * *

§ 44511. Aviation research grants

(a) * * *

* * * * * * *

(f) AIRPORT COOPERATIVE RESEARCH PROGRAM.—

(1) ESTABLISHMENT.—The Secretary of Transportation shall **[**establish a 4-year pilot**]** *maintain an* airport cooperative research program to—

(A) * * *

* * * * * * *

(4) REPORT.—[Not later than 6 months after the expiration of the program under this subsection,] *Not later than September 30, 2012,* the Secretary shall transmit to the Congress a report on the [program, including recommendations as to the need for establishing a permanent airport cooperative research program] *program*.

* * * * * * *

§ 44513. Regional centers of air transportation excellence

(a) * * *

* * * * * * *

[(f) GOVERNMENT'S SHARE OF COSTS.—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.]

(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 any 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.

* * * * * * *

(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 project and their shares of the overall funding for each research project; and

(4) the level of cost-sharing for each research project.

* * * * * * *

PART C—FINANCING

* * * * * * *

CHAPTER 481—AIRPORT AND AIRWAY TRUST FUND AUTHORIZATIONS

* * * * * * *

§ 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 sec-

tions 44504, 44505, 44507, 44509, and 44511–44513 [of this title] *of this title and, for each of fiscal years 2011 through 2014, under subsection (g)*:

(1) * * *

* * * * * * *

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

(A) * * *

* * * * * * *

(K) $9,862,000 for Airports Technology-Safety; *and*

(L) $7,906,000 for Airports Technology-Efficiency; [and]

* * * * * * *

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

(14) $190,500,000 for fiscal year 2010[.]*;*

(15) for fiscal year 2011, $165,020,000; and

(16) for each of the fiscal years 2012 through 2014, $146,827,000.

* * * * * * *

(g) SPECIFIC AUTHORIZATIONS.—The following programs described in the research, engineering, and development account of the national aviation research plan required under section 44501(c) are authorized:

(1) Fire Research and Safety.

(2) Propulsion and Fuel Systems.

(3) Advanced Materials/Structural Safety.

(4) Atmospheric Hazards—Aircraft Icing/Digital System Safety.

(5) Continued Airworthiness.

(6) Aircraft Catastrophic Failure Prevention Research.

(7) Flightdeck/Maintenance/System Integration Human Factors.

(8) System Safety Management.

(9) Air Traffic Control/Technical Operations Human Factors.

(10) Aeromedical Research.

(11) Weather Program.

(12) Unmanned Aircraft Systems Research.

(13) NextGen—Alternative Fuels for General Aviation.

(14) Joint Planning and Development Office.

(15) NextGen—Wake Turbulence Research.

(16) NextGen—Air Ground Integration Human Factors.

(17) NextGen—Self Separation Human Factors.

(18) NextGen—Weather Technology in the Cockpit.

(19) Environment and Energy Research.

(20) NextGen Environmental Research—Aircraft Technologies, Fuels, and Metrics.

(21) System Planning and Resource Management.

(22) The William J. Hughes Technical Center Laboratory Facility.

* * * * * * *

XX. Dissenting Views

The need for a long term Federal Aviation Administration (FAA) reauthorization act is clear. The lack of one makes long term planning at the agency difficult at a time when the agency is working to implement substantial changes to the nation's air traffic control system. While H.R. 970 reauthorizes the FAA's research and development programs for four years. the arbitrary spending cuts that our Republican colleagues have imposed on the agency in H.R. 970 will devastate FAA's ability to improve flying safety and modernize the air traffic control system. For this reason we cannot support the bill.

H.R. 970 makes a 23% cut to FAA's research, engineering, and development accounts from the funding levels enacted by Congress for fiscal year 2010. These cuts are made simply to conform to an arbitrary and poorly considered level of spending reductions, and are not related in any way to a lack of need for the research. The reality is that in multiple hearings before this Congress in both the Science, Space, and Technology Committee and the Transportation and Infrastructure Committee, expert witnesses have stressed the importance of investing in both R&D and in the NextGen modernization initiative and have warned of the negative impact that cuts will have on the nation's air traffic control system and the flying public.

Former Bush Administration FAA Administrator Marion Blakey noted that:

> *"The civil aviation industry is an economic engine directly and indirectly contributing more than 1.3 trillion dollars—or 5.6 percent of gross domestic product—to the U.S. economy. It supports nearly 11 million jobs with a payroll of 369 billion dollars."*

However she also cautioned that:

> *"Safely expanding the capacity of our national airspace system and addressing growing environmental and energy concerns are two of the most significant challenges facing the U.S. civil aviation industry."*

In short, it is an industry that faces serious challenges to continued growth that must be addressed through research and development. To cut these R&D efforts so drastically while we are trying to recover from a recession, and while oil prices climb ever higher, risks stifling the aviation industry and the millions of jobs it supports.

Equally importantly, the research and development work that is done at FAA also helps to protect everyone who flies. The cuts to aviation safety-related research made in H.R. 970 will undoubtedly reduce the safety of our air transportation system if enacted into law. These effects may not be felt today or tomorrow, but they will be felt and will have serious consequences for the safety of the fly-

ing public. Democratic Members of the Committee attempted to prevent cuts to three key safety research initiatives at the Committee's markup of H.R. 970. These amendments, if adopted, would have increased the four year authorization amount by a total of $16 million, or less than 3% of the $600 million authorized in the bill. As noted in the Committee markup, these costs pale in comparison to the costs of even a single major aircraft accident, both in terms of money and in the loss of life. The amendments would have:

Prevented cuts to atmospheric hazards and aircraft icing research in order to provide FAA with the level of resources needed to perform research to reduce the number of accidents or potential accidents associated with aircraft icing. *(Miller amendment failed by a party-line recorded vote, 16–13)*;

Prevented cuts to fire research and safety work in order to provide FAA with the funding necessary to perform research to reduce the number of accidents associated with aircraft fires, to mitigate the effects of a post-crash ground fire, and to help people survive an aircraft fire. *(McNerney amendment failed by a party-line recorded vote, 17–11); and,*

Prevented cuts to crew and maintenance human factors research in order to provide FAA with the necessary funds to carry out research to reduce errors by pilots, inspectors, and maintenance technicians. *(Edwards amendment failed by a party-line recorded vote 17–13)*.

It is unfortunate that all of our Republican colleagues at the markup voted to reject these amendments. The choice before the Committee could not have been clearer: invest in needed safety R&D or embrace cuts to that research that will wind up making the flying public less safe simply to meet an arbitrary goal for cutting federal spending. The Democratic Members of the Committee share our colleagues' concern about the nation's deficit, but we reject the notion that addressing the nation's deficit requires us to make our nation's transportation system less safe.

As we move forward to negotiations with the Senate over a final FAA reauthorization, we remain committed to ensuring the safety of our nation's air transportation system, and we hope that our Republican colleagues ultimately will join us in that effort.

EDDIE BERNICE JOHNSON.
JERRY F. COSTELLO.
ZOE LOFGREN.
DAVID WU.
BRAD MILLER.
DANIEL LIPINSKI.
DONNA F. EDWARDS.
MARCIA FUDGE.
JERRY MCNERNEY.
FREDERICA WILSON.

XXI: PROCEEDINGS OF THE FULL COMMITTEE MARKUP ON H.R. 970, THE FEDERAL AVIATION RESEARCH AND DEVELOPMENT REAUTHORIZATION ACT OF 2011

THURSDAY, MARCH 17, 2011

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY,
Washington, DC.

The Committee met, pursuant to call, at 10:02 a.m., in Room 2318 of the Rayburn House Office Building, Hon. Ralph Hall [Chairman of the Committee] presiding.

Chairman HALL. Good morning. The Committee on Science, Space, and Technology will come to order. Pursuant to notice, the Committee on Science, Space, and Technology meets today to consider the following measures: H.R. 970, the *Federal Aviation Research and Development Act of 2011*.

As it is a tradition on this Committee, without objection, I ask unanimous consent for the authority to recess the Committee at any point during consideration of these matters. It is so ordered.

We will now proceed with a markup, again, with opening statements, and I will begin to take as much time as I require, so long as it is not over five minutes.

Today our committee is going to consider H.R. 970, the *Federal Aviation Research and Development Reauthorization Act of 2011*. The bill was introduced on March 9th and referred to our Committee.

H.R. 970 authorizes Federal Aviation Administration's Research and Development programs for fiscal years 2011 through 2014. For fiscal year 2011, the authorization amount is a hybrid of the current R&D spending level and the fiscal year 2008 enacted. For fiscal years 2012 through 2014, the bill authorizes at the 2008 enacted level.

Many of the provisions in H.R. 970 have been adapted from FAA R&D bills considered during the previous two Congresses and should be well known to FAA and the aviation community. They are focused and essential policy initiatives that will sustain the excellent research now underway at FAA, including research on unmanned aircraft systems, design for certification, alternative jet fuel technologies, and aviation's effect on the environment.

Last month, under the leadership of Chairman Palazzo, the Space and Aeronautics Subcommittee held an oversight hearing on FAA's research and development program. Witnesses from FAA, industry, an external advisory committee to FAA, and the Inspector

General of the Department of Transportation, testified about ongoing research activities and their effectiveness in supporting the agency's diverse missions.

It should not come as a surprise to anyone that frequent mention was made of the Next Generation Air Transportation System program, which is by far the largest development program underway at FAA as it endeavors to modernize the air traffic control system. Discussions were also heard about research that is very important to the general aviation community and the operation of unmanned aircraft systems in our national airspace.

As Members are aware, once H.R. 970 is reported by our Committee, it is our expectation that our bill will be included as part of the larger FAA reauthorization bill, H.R. 658, which was recently reported by the Transportation and Infrastructure Committee. As the Committee with the expertise in civil aviation research and development activities, it is important that we develop this piece of the larger package.

H.R. 658 reauthorizes the Federal Aviation Administration except for the R&D programs. It covers the same four-year period and holds the agency's budget to the fiscal year 2008 spending level. By reporting the bill before us this morning, we will ensure that the broader FAA reauthorization bill will include an R&D title, thus enabling the agency's goals of increasing the capacity, efficiency, safety and reliability of our nation's civil aviation system through a robust research and development program.

I strongly urge my colleagues to support H.R. 970.

[The prepared statement of Chairman Hall follows:]

PREPARED STATEMENT OF CHAIRMAN RALPH M. HALL

Today our committee will consider H.R. 970, The Federal Aviation Research and Development Reauthorization Act of 2011. The bill was introduced on March 9 and referred to our Committee.

H.R. 970 authorizes Federal Aviation Administration's (FAA) Research and Development (R&D) programs for fiscal years 2011 through 2014. For Fiscal Year 2011, the authorization amount is a hybrid of the current R&D spending level and the Fiscal Year 2008 enacted. For Fiscal Years 2012 through 2014, the bill authorizes at the 2008 enacted level.

Many of the provisions in H.R. 970 have been adapted from FAA R&D bills considered during the previous two Congresses and should be well known to FAA and the aviation community. They are focused and essential policy initiatives that will sustain the excellent research now underway at FAA, including research on unmanned aircraft systems, design for certification, alternative jet fuel technologies, and aviation's effect on the environment.

Last month, under the leadership of Chairman Palazzo, the Space and Aeronautics Subcommittee held an oversight hearing on FAA's research and development program. Witnesses from FAA, industry, an external advisory committee to FAA, and the Inspector General of the Department of Transportation, testified about ongoing research activities and their effectiveness in supporting the agency's diverse missions.

It should not come as a surprise that frequent mention was made of the Next Generation Air Transportation System program, which is by far the largest development program underway at FAA as it endeavors to modernize the air traffic control system. Discussions were also heard about research important to the general aviation community and the operation of unmanned aircraft systems in our national airspace.

As Members are aware, once H.R. 970 is reported by our Committee, it is our expectation our bill will be included as part of the larger FAA reauthorization bill, H.R. 658, which was recently reported by the Transportation and Infrastructure Committee.

As the Committee with the expertise in civil aviation research and development activities, it is important that we develop this piece of the larger package.

H.R. 658 reauthorizes the Federal Aviation Administration except for the R&D programs. It covers the same four year period and holds the agency's budget to the FY08 spending level. By reporting the bill before us this morning, we will ensure that the broader FAA reauthorization bill will include an R&D title, thus enabling the agency's goals of increasing the capacity, efficiency, safety and reliability of our nation's civil aviation system through a robust research and development program.

I strongly urge my colleagues to support H.R. 970, and I now recognize the gentlelady from Texas for an opening statement.

Chairman HALL. I now recognize the gentlelady from Texas for her opening statement, Ms. Johnson.

Ms. JOHNSON. Thank you very much, Mr. Chairman, and good morning to everyone.

As we prepare to mark up legislation to reauthorize the Federal Aviation Administration's research and development programs, I think we do need to keep in mind what is at stake. Aviation is one of the cornerstones of modern commerce and vital to both our economy and our quality of life. As a result, research tools have improved aviation safety and modernized our air transportation system and are critical to the continued health of the Nation's economy and to creating and keeping good jobs in America.

As former President Bush Administration FAA Administrator Marion Blakey said when she testified before the House Transportation Committee last month, the civil aviation industry is an economic engine directly and indirectly contributing more than $1.3 trillion or 5.6 percent of gross domestic product to the U.S. economy. It supports nearly 11 million jobs with a payroll of $369 billion. She also testified that safely expanding the capacity of our national air space system and addressing growing environmental and energy concerns are two of the most significant challenges facing the U.S. civil aviation industry today. So we are not talking about nice-to-haves here. We are talking about investments that are essential to the continued health of our nation's aviation system.

In short, today's markup is about ensuring safety, creating jobs and protecting the flying public. Mr. Chairman, while I certainly appreciate your good faith in attempting to reauthorize these important R&D programs, I cannot agree with the level of funding provided in H.R. 970 for these important R&D activities.

Members need to be clear about what is being proposed in this bill. Namely this bill proposes a 23 percent reduction to the FAA's research, engineering, and development accounts from the funding enacted by Congress in fiscal year 2010. Twenty-three percent. That cut is being proposed despite clear testimony from witnesses before the Space and Aeronautics Subcommittee at last month's hearing on FAA's R&D and NextGen programs, that the level of funding currently being invested in R&D by FAA is appropriate. Certainly no one at that hearing advocated cutting the R&D.

Mr. Chairman, I am very concerned that the cuts contained in this legislation are going to wind up jeopardizing the safety of the flying public and the continued viability of our aviation system. It may not happen today or next week, but sooner or later we are going to see the bad consequences of neglecting these critically important investments. When that day comes, I do not want to be on that plane with you headed to Dallas because we will stop somewhere in Tennessee.

Chairman HALL. Memphis.

Ms. JOHNSON. Memphis? Okay. So I stood by while Congress cut the research that is vital to the continued well-being of this important sector of our economy and to the continued safe operation of the Nation's aviation system. I can't believe any of my colleagues want to do that, either. Yet, we are being told that we must cut these programs simply to meet an arbitrary budget-cutting target, not a target that is based on any detailed and thoughtful review of the programs in question, funding reductions that cut critically important research on fire safety, aircraft icing, weight turbulence, aviation noise and emissions, human factors and weather monitoring technology in the cockpit, as well as research required for NextGen. The most needed modernization of the Nation's air traffic control system really does not make much sense. Yet, that is what is being proposed in this bill. All of us in this room depend on our aviation system, and we need to understand what the impact of these cuts will be. They will hurt our airlines that are seeking increased efficiencies to help cope with jet fuel expenses that increase the annual bill by $175 million for every penny increase per gallon in jet fuel costs, and they will hurt our airports. They will hurt the environment by limiting work to lessen the impact of our air transportation noise on our communities and harmful aircraft emissions into the atmosphere. They will hurt America's aviation-related workforce. They will impede research to improve the safety of the flying public, and they will slow efforts to reduce congestion and improve the efficiency of the Nation's air transportation system.

That said, I know that a number of my democratic colleagues intend to offer amendments to try to limit the damage that would be done by this bill if it were to become law, and I intend to support these amendments. I hope that Members on both sides of the aisle will give the amendments serious consideration so that we can stand up for the flying public, for safety and for jobs.

And finally, Mr. Chairman, I must express my disappointment in the Committee's very first markup of the 112th Congress. A decision was made to abandon regular order and by pass subcommittee consideration of this legislation. It is clear to all of us that the FAA bill that passed the House Transportation Committee is not going to be embraced anytime soon by the Senate, even if it is voted out of the House at the end of the month. So there is no reason that the Committee had to deviate from the regular order that we have been assured the Committee would follow in the 112th Congress. I hope that this will not be a continued practice by the Committee when future legislation comes for consideration.

Thank you, Mr. Chairman. I love you, and I yield back the balance of my time.

[The prepared statement of Ms. Johnson follows:]

PREPARED STATEMENT OF REPRESENTATIVE EDDIE BERNICE JOHNSON

Thank you, Mr. Hall, and good morning. As we prepare to mark up legislation to reauthorize the Federal Aviation Administration's research and development programs, I think that we need to keep in mind what is at stake.

Aviation is one of the cornerstones of modern commerce and vital to both our economy and our quality of life.

As a result, research tools to improve aviation safety and modernize our air transportation system are critical to the continued health of the nation's economy and to creating and keeping good jobs in America.

As former Bush Administration FAA Administrator Marion Blakey said when she testified before the House Transportation Committee last month:

"The civil aviation industry is an economic engine directly and indirectly contributing more than 1.3 trillion dollars—or 5.6 percent of gross domestic product—to the U.S. economy. It supports nearly 11 million jobs with a payroll of 369 billion dollars."

She also testified that:

"Safely expanding the capacity of our national airspace system and addressing growing environmental and energy concerns are two of the most significant challenges facing the U.S. civil aviation industry today."

So we are not talking about "nice-to-haves", here. We are talking about investments that are essential to the continued health of our nation's aviation system.

In short, today's markup is about ensuring safety, creating jobs, and protecting the flying public.

Mr. Chairman, while I certainly appreciate your good faith in attempting to reauthorize these important R&D programs, I cannot agree with the level of funding provided in H.R. 970 for these important R&D activities.

Members need to be clear about what is being proposed in this bill. Namely, this bill proposes a *23%* reduction to FAA's research, engineering, and development accounts from the funding enacted by Congress for FY 2010.

Twenty-three percent . . .

That cut is being proposed despite clear testimony from witnesses before the Space and Aeronautics subcommittee at last month's hearing on FAA's R&D and NextGen programs that the level of funding currently being invested in R&D by FAA is appropriate—certainly no one at that hearing advocated cutting R&D.

Mr. Chairman, I am very concerned that the cuts contained in this legislation are going to wind up jeopardizing the safety of the flying public and the continued viability of our aviation system.

It may not happen today or next week, but sooner or later we are going to see the bad consequences of neglecting these critically important investments.

When that day comes, I do not want to have to look back and say that I stood by while Congress cut the research that is vital to the continued wellbeing of this important sector of our economy and to the continued safe operation of the nation's aviation system. I can't believe any of my colleagues want to do so either.

Yet we are being told we must cut these programs simply to meet an *arbitrary* budget-cutting target—not a target that is based on any detailed or thoughtful review of the programs in question.

Funding reductions that cut critically important research on fire safety, aircraft icing, wake turbulence, aviation noise and emissions, human factors, and weather monitoring technology in the cockpit—as well as research required for NextGen, the much-needed modernization of the nation's air traffic control system—make no sense.

Yet that is what is being proposed in this bill.

All of us in this room depend on our aviation system, and we need to understand what the impact of these cuts will be:

- They will hurt our airlines that are seeking increased efficiencies to help cope with jet fuel expenses that increase their annual bill by $175 million for every penny increase per gallon in jet fuel costs; and they will hurt our airports;
- They will hurt the environment by limiting work to lessen the impact of air transportation noise on our communities and harmful aircraft emissions into the atmosphere;
- They will hurt America's aviation-related workforce.
- They will impede research to improve the safety of the flying public; and
- They will slow efforts to reduce congestion and improve the efficiency of the nation's air transportation system.

That said, I know that a number of my Democratic colleagues intend to offer amendments to try to limit the damage that would be done by this bill if it were to become law, and I intend to support those amendments.

I hope that Members on both sides of the aisle will give the amendments serious consideration so that we can stand up for the flying public, for safety, and for jobs.

Finally, Mr. Chairman, I must express disappointment that in this Committee's very first markup of the 112th Congress, a decision was made to abandon regular order and bypass subcommittee consideration of this legislation.

It is clear to all of us that the FAA bill that passed the House Transportation Committee is not going to be embraced anytime soon by the Senate even if it is voted out of the House at the end of this month, so there is no reason that this

Committee had to deviate from the regular order that we had been assured the Committee would follow in the 112th Congress.

I hope that this will not be a continued practice by the Committee when future legislation comes up for consideration.

Thank you, and I yield back the balance of my time.

Chairman HALL. I thank you, Ms. Johnson, for that. Without objection, all Member opening statements will be placed in the record at this point.

[The prepared statement of Mr. Costello follows:]

PREPARED STATEMENT OF REPRESENTATIVE JERRY F. COSTELLO

- Thank you, Mr. Chairman, for calling today's markup to consider H.R. 970, the FAA Research and Development Reauthorization Act of 2011.
- This legislation will reauthorize research and development (R&D) programs at the Federal Aviation Administration (FAA) that are vital to the safety, security, and efficiency of the civil aviation industry and the flying public. FAA's researchers and engineers work in collaboration with industry and colleges and universities around the country to develop new materials, technology, and practices to ensure civil aviation continues to create jobs and keep the flying public safe.
- While I am pleased H.R. 970 will provide a long-term reauthorization of these programs, I am deeply concerned about the funding levels authorized by the legislation.
- As I have said before, I believe every federal agency can afford to make cuts in certain areas. But we must make certain those cuts do not affect the safety and security of the flying public. In a hearing before the House Transportation and Infrastructure Committee, FAA Administrator Randy Babbit and members of the aviation industry testified on the impact of these cuts. Their message was simple; cutting funding to 2008 levels will harm essential safety programs and hinder the aviation industry.
- Despite those warnings, this measure arbitrarily cuts FAA R&D funding back to 2008 and provides no authorized funding levels for specific research programs. The cuts contained in this bill will take us backwards, negatively affect safety and security, and halt job creation at a time when jobs are needed most.
- In 2007, 2009, and 2010, the House passed an FAA Reauthorization bill with bipartisan support that funded R&D programs at reasonable levels that allowed them to move forward with their research and improve the safety and security of aviation. These levels were carefully considered and reflect the priorities and plans laid out by FAA in the 2010 National Aviation Research Plan.
- Several of my colleagues will offer amendments to return key safety and security R&D programs to reasonable FY10 funding levels. If we want to keep the flying public safe and prevent tragic crashes and other incidents, restoring this funding is imperative. I encourage my colleagues to support these amendments.
- As I have said before, a long-term FAA Reauthorization, including reauthorization of these R&D programs, is necessary to provide certainty to the aviation industry and keep the industry moving forward. The funding levels in this bill will not meet that goal.
- I am hopeful we can work together to improve this legislation as it moves to the floor. Thank you, Mr. Chairman.

Chairman HALL. And I have listened carefully, Ms. Johnson, to what you said, and senior members of this Committee can well remember some mistakes that have been made when you cut the budget too much or too little.

I remember at a time, oh, back in the last century—it is hard to say that—when the Vice President told us we had to cut 25 percent out of the NASA program, and at that time I was a Democrat. I was a conservative Democrat, and the chairman was a guy from New York who was a fairly liberal Republican. And the book on us

at that time was that I would keep him from spending all the money on the whales, and he would keep me from drilling on cemetery lots. But there was a difference in us.

And we called in, I believe Mr. Goldin who was head then, and told him pursuant to the Vice President who was kind of guiding us then and that was in charge of space and things like that, that we had to cut it 25 percent. And we told Mr. Goldin that we could cut it, but we didn't know how to cut it where safety was involved as much as it is, and that he could cut it skillfully or we would cut it with a baseball bat. He skillfully cut it, but he cut 34 percent out of it and that was the beginning of the end of NASA. That was the beginning of our downward trend. He cut it way too much, and that can happen. I am aware of that.

We will now consider H.R. 970.

Without objection, I ask unanimous consent that the bill is considered as read and open to amendment at any point, that the reading of the amendment in the nature of a substitute which was noticed along with the bill be dispensed with and that the Members proceed with the amendments in the order of the roster, and it is so ordered.

The first amendment on the roster is an amendment in the nature of a substitute offered by me.

The Clerk shall read the amendment.

The CLERK. Amendment number 342, amendment in the nature of a substitute to H.R. 970 offered by Mr. Hall of Texas.

Chairman HALL. The reading, having already been dispensed with, now as I recognize myself for five minutes to explain the amendment in the nature of a substitute.

The amendment in the nature of a substitute is very simple. It includes a new Title 10 designation and renumbers the sections of H.R. 970 accordingly. Making these changes will allow our bill to be easily incorporated if necessary as a research title into a larger FAA reauthorization package. In every other respect, the amendment in the nature of a substitute is identical to the introduced bill.

By taking this step, we will make it easier for the House to move efficiently to include the Committee's language in an FAA reauthorization packet.

I urge all Members to support this amendment. I now recognize Ms. Johnson for any comments she may have on the amendment in the nature of a substitute.

Ms. JOHNSON. Thank you, Mr. Chairman. I do not support the substitute, but I think that after we consider the next amendments, I might have a change of heart.

Chairman HALL. Before we change Ms. Johnson's heart, does anybody else want to——

Mr. NEUGEBAUER. Mr. Chairman?

Chairman HALL. The gentleman from Texas.

Mr. NEUGEBAUER. I don't recall changing anybody's heart, but my heart is in the right place.

Thank you, Mr. Chairman, for holding this hearing, and you know, this Congress has been working on FAA reauthorization for an extremely long period of time, and hopefully we are going to finally get that ball across the line. But I think it is important and

I think that this bill that we are considering today funds the FAA at 2008 levels. And of course, what this is going to do, and that is an okay process, is going to force all of these agencies to do more with less. But quite honestly, that is what the American people and families all across this country are having to do. They are having to make choices. They are having to make their money go further. And so certainly, they have a right to expect that from government as well.

I had planned to offer an amendment with this bill on a project that I have been working on for the last four years, and that has to do with safety. What we do know in our country is that there are towers and other obstacles out there that can impact air safety. And in my particular Congressional district, we now enjoy being the Congressional district in the country that has the largest wind farm I think now in the world, in my Congressional district. And it is providing an additional source of power for America. But there are other obstacles—we have radio towers and cell towers and all of these. And so what I have been working on is a piece of legislation that would ask the FAA to conduct a study on the feasibility of FAA maintaining a database in the FAA if it is available to the aviation industry but also, not only just to the aviation industry, but also to those people that are developing infrastructure that has some potential impact of having influence on flight patterns or radar locations so that people can know where these objects are before they begin to develop those projects.

I just think it makes sense and with the technology that we have today, if that database was being maintained with the actual GPS location of each one of those, a lot of the software that people in aviation and others use would be able to be downloaded and be able to be used and make our airways safer. But also from the development standpoint of people planning projects, they would know in advance where there are sensitive sites that a location of a particular tower or structure might impede safety. Not only are we talking about radar for air traffic control, but we are also talking about weather radar where some of these objects could impede the ability for people in the weather business to give advanced notice of storms and so forth.

And I think this is an important piece of legislation. It really probably fits within the purview of this Committee because it is basically about research. But we have been working with the T&I committee on this piece of legislation, and so we have out of respect to the work we are doing with them, we are not going to offer this amendment today.

But I did want the Committee as a whole to be aware of that, and as this bill hopefully moves forward in the house, that you would be supportive of that particular initiative because I think long term, it has a real benefit not only to the aviation industry but also to the industries that are planning structures that could impede and cause hazards for the aviation industry.

And so with that, Mr. Chairman, thank you for allowing me a little bit of time here this morning, and I yield back.

Chairman HALL. Thank you. You used exactly five minutes. Very good, well-planned, and I agree with you and I know you have a particular problem in West Texas with the wind mills and all that.

I am told that the hairdressers there are complaining that T. Boone Pickens' windmills are blowing their clients' hair once they get outside. I don't know if you have that much or not.

Mr. NEUGEBAUER. That much hair or what?

Chairman HALL. This amendment is——

Ms. EDWARDS. Mr. Chairman, I don't have that problem.

Chairman HALL. You don't need any help. You are one of my favorites, and you know it, don't you?

This simply includes a new title to make it fit into the big bill that we are having to work with. Thank you, Mr. Neugebauer, for your statement. I agree that the FAA has the responsibility to provide for the safety of all users in all of the U.S. airspace, including West Texas. And I would be interested in further pursuing this topic of potential aviation obstructions for low-flying aircraft and their related safety concerns because we are going to have to have that if we ever write an immigration bill. That is something that needs to be worked into it, and I thank you for your—we will have a vote on.

Is there anyone else who cares to be heard?

Mr. BROUN. Mr. Chairman?

Chairman HALL. The gentleman from where? The gentleman not from California but from Georgia, I recognize you for five minutes.

Mr. BROUN. Thank you, Mr. Chairman. I just wanted to take a moment or two. Part of this bill is to get the FAA to do research in alternative fuel, both for piston-powered aircraft as well as jet aircraft.

I am a good southern boy, Mr. Chairman, and I love my grits and cornbread. It makes no sense to me to drive down the road burning up my groceries, and I hope the FAA, as they do that research and development, as we do need to find alternative fuels, will not focus on corn-based ethanol because as the government has done so, it has raised the cost of all groceries for everybody in this country, rich and poor alike. In fact, I have got a producer, a chicken processor in my district, and he is having to up the price of his chickens for folks markedly because of the cost of corn being so high because this government is subsidizing corn-based ethanol fuels. And it makes no sense. It has been a total disaster as an alternative fuel, and I hope we will get away from that, Mr. Chairman, and I appreciate your giving me a minute or two to express my opinion on this. And I hope the FAA will look at other forms of fuel as we go forward with this research, and thank you, Mr. Chairman. I yield back.

Chairman HALL. The gentleman yields back, and I thank you for that. Anyone else care to be heard? There being no more discussion, are there any amendments to the amendment? Does anyone have—Mr. Miller? The gentleman from——

Mr. MILLER. I have a couple of amendments at the desk, the one on icing.

Chairman HALL. Is your amendment number 346?

Mr. MILLER. Actually, it doesn't—yes.

Chairman HALL. All right. Second amendment is offered by the gentleman from North Carolina, Mr. Miller. Are you ready to proceed with your amendment?

Mr. MILLER. I am. I move to dispense with the reading of the amendment. Does everyone have it?

Chairman HALL. You have an amendment at the desk, do you not?

Mr. MILLER. I have an amendment at the desk.

Chairman HALL. All right. The Clerk will report the amendment.

The CLERK. Amendment number 346, amendment to the amendment in the nature of a substitute to H.R. 970 offered by Mr. Miller of North Carolina.

Chairman HALL. All right. I would ask unanimous consent to dispense with the reading. Without objection, so ordered.

Mr. MILLER. Thank you.

Chairman HALL. The gentleman is recognized for five minutes to explain the amendment.

Mr. MILLER. Thank you, Mr. Chairman. This amendment assures that FAA's research into atmospheric hazards, including icing, is not cut below the fiscal year 2010 levels. The amendment adds money to the overall research account to ensure that the amendment does not harm other important research accounts.

Anyone who has followed the news in the last couple of years, actually in the last generation or more, that aircraft icing has played a critical role in many catastrophic air crashes. The last couple years, a Colgan air flight bound for Buffalo, New York, crashed on approach killing all 49 on board and one person on the ground. Aircraft icing was found to be a contributing cause of that, and the Air France flight bound for Paris that plunged into the Atlantic in 2009, killing all 228 people on board, the investigation there is not complete, but icing also appears to have been a critical factor in that accident.

Those are the highest profile aviation accidents in the last couple of years, and both involved aircraft icing. The Air France disaster, in particular, show that equipment icing issues really calls for increased icing research. So I think it makes sense in the aftermath of those tragedies and many more before them that we make sure that FAA's funding for aircraft icing and atmospheric hazards research remain in place. And if you are only concerned about the cost of programs, this saves money regardless. Just on the Air France crash, we lost hundreds of millions of dollars. The search and rescue cost alone topped $40 million.

So this makes economic sense. It is $1 million a year to make sure that we can avoid must greater costs, not just cost to the government but human cost. I urge support for the amendment, and I yield back.

[The prepared statement of Mr. Miller follows:]

PREPARED STATEMENT OF REPRESENTATIVE BRAD MILLER

My amendment is pretty straightforward. It ensures that FAA's research into Atmospheric Hazards, including Icing, is not cut below FY 2010 levels. The first part of the amendment adds money to the overall Research account to ensure that this adjustment does not negatively impact the other important research accounts.

As folks who have watched the news over the past few years should know, aircraft icing has played a critical role in several catastrophic air crashes. In 2009 a Colgan Air flight bound for Buffalo, NY, crashed on approach, killing all 49 on board and one additional person on the ground. Aircraft icing was a contributing cause to this horrible tragedy.

People should also remember the Air France flight bound for Paris which plunged into the Atlantic Ocean in 2009, killing all 228 people on board. While the investigation is ongoing, icing appears to have been a critical factor in this accident.

These are perhaps the most high profile aviation accidents in recent years, and both involved aircraft icing. Moreover, the Air France disaster revealed equipment icing issues which call for the need for increased icing research. So I think it is appropriate that in the aftermath of these tragedies we maintain FAA's critical funding for aircraft icing and atmospheric hazards research.

I'll also note to those on the other side of the aisle who are concerned about cost, that the monetary cost of the Air France crash alone will likely run into the hundreds of millions of dollars. The search and rescue costs alone have already topped $40 million dollars. A crash involving hundreds of millions of dollars in financial losses and hundreds of lives lost is not a very good way to learn lessons about aircraft icing.

The prudent way to improve flying safety is to invest these modest amounts on research, so we don't have to learn our lessons only through tragedy. This is precisely what my amendment does. And it does it at a cost of only one million dollars a year. This is a good investment, and a necessary one to ensure the safety of the American flying public.

I urge support for my amendment.

Chairman HALL. I thank you, Mr. Miller, and while I appreciate your argument that your amendment restores a modest amount of funding to the FAA's Atmospheric Hazards program, I have to oppose the amendment and I do so for two reasons. First, as Members are keenly aware, this bill seeks to reduce federal spending by returning FAA's budget, including R&D funding, to the fiscal year 2008 funding level. It hurts, it is painful but it is also necessary if Congress is really serious about reducing the size of our deficit. I acknowledge that FAA research programs could do more if given more, but we simply don't have the money, and if we go down that slippery path, we are making an exception here. So where do we stop?

Does anyone else care to be heard? I am sorry. I recognize, and I can't see your name. Ms. Fudge.

Ms. FUDGE. Thank you very much, Mr. Chairman. Mr. Chairman, I support this amendment because it increases safety within our nation's aviation systems. Ice formation on aircraft can disrupt the smooth flow of air over wings and prevent the aircraft from taking off. Most importantly, it can decrease the pilot's ability to maintain control of the aircraft. This could lead to a fatal flight event as Mr. Miller has just described.

NASA Glen Research Center, located just outside of my district in Cleveland, Ohio, is a leader in aircraft icing research. In fact, the icing research tunnel at Glen is the world's largest refrigerated wind tunnel and has been ensuring flight safety for icing conditions since 1944.

In addition to the tunnel, Glen is home to the icing research aircraft which allows for full-scale iced aircraft aerodynamic studies and the development of icing protection systems. Icing research means increased safety for the flying public. Yes, we are in tough fiscal times, but cutting icing research, like the research being performed at Glen, is not the answer. We cannot tighten our belts by compromising the safety of our citizens. I urge my colleagues to support this amendment, and I yield back.

[The prepared statement of Ms. Fudge follows:]

PREPARED STATEMENT OF REPRESENTATIVE MARCIA L. FUDGE

I support this amendment because it increases safety within our country's aviation systems. Ice formation on aircraft can disrupt the smooth flow of air over the wings and prevent the aircraft from taking off. Most importantly, it can decrease the pilot's ability to maintain control of the aircraft.

NASA Glenn Research Center, which is located just outside my district in Cleveland, Ohio, specializes in aircraft icing research. Glenn specializes in three capacities: Design analysis and tools, Aircraft ice protection, and Education & training.

Design & Analysis Tools: A comprehensive, multi-disciplinary research effort aimed at development of tools that can aid aircraft manufacturers, sub system manufacturers, certification authorities, the military, and other government agencies in assessing the behavior of aircraft systems in an icing environment.

Aircraft Ice Protection: This program element focuses on two main areas. The first is the development of remote sensing technologies to measure nearby icing conditions, improve current forecast capabilities, and develop systems to transfer and display information to flight crews, flight controllers, and dispatchers. Second is the development of systems to monitor and assess aircraft performance, notify the cockpit crew about the state of the aircraft, and/or automatically alter the aircraft controlling systems to prevent stall or loss of control in the icing environment.

Education & Training: This program aims to develop materials that support knowledge about in-flight icing on the basics of icing weather, icing operations, and the impact of ice on the aircraft.

Chairman HALL. Thank you. The gentlelady from Ohio yields back and states her position very well. We are trying to get this vote off before we have to go to the floor and vote.

Is there anyone else who cares to be recognized?

Mr. COSTELLO. Mr. Chairman? Thirty seconds.

Chairman HALL. I recognize the gentleman from Illinois.

Mr. COSTELLO. Mr. Chairman, I support the gentleman's amendment. As you know, I chaired the aviation subcommittee in the last Congress and am Ranking Member of the subcommittee in this Congress. So the program is working, it is working well. Both Mr. Petri and I and Mr. Mica held a roundtable discussion last year concerning this icing issue. The National Transportation and Safety Board has put it on their most wanted safety list in 1997. A lot of progress has been made, and in fact, there was testimony before the subcommittee in a hearing that we held from the Deputy Administrator for Safety at the FAA and also the head of the GAO that in fact the program was working, and more research and development are needed to determine exactly how to properly address the issue.

So it is a safety issue, and I support the gentleman's amendment.

Chairman HALL. Hopefully there are no more, but if anyone else wants to be heard we will take the time. We won't cut anybody off. But if there are no more, the vote occurs on the amendment. All in favor say aye, those opposed. And all of you say no.

Ms. JOHNSON. Can we have a record vote?

Chairman HALL. Record vote requested. The clerk will call the roll.

The CLERK. Chairman Hall?

Chairman HALL. Aye.

The CLERK. Chairman Hall votes aye.

Chairman HALL. Oh, no. Is this on their objection? Yes. I am a Republican now.

The CLERK. Chairman Hall?

Chairman HALL. No.

The CLERK. No.

Mr. Sensenbrenner?

[No response.]
The CLERK. Mr. Smith?
[No response.]
The CLERK. Mr. Rohrabacher?
Mr. ROHRABACHER. No.
The CLERK. Mr. Rohrabacher votes no.
Mr. Bartlett?
[No response.]
The CLERK. Mr. Lucas?
Mr. LUCAS. No.
The CLERK. Mr. Lucas votes no.
Mrs. Biggert?
Mrs. BIGGERT. No.
The CLERK. Mrs. Biggert votes no.
Mr. Akin?
[No response.]
The CLERK. Mr. Neugebauer?
Mr. NEUGEBAUER. No.
The CLERK. Mr. Neugebauer votes no.
Mr. McCaul?
Mr. MCCAUL. No.
The CLERK. Mr. McCaul votes no.
Mr. Broun?
Mr. BROUN. No.
The CLERK. Mr. Broun votes no.
Mrs. Adams?
Mrs. ADAMS. No.
The CLERK. Mrs. Adams votes no.
Mr. Quayle?
Mr. QUAYLE. No.
The CLERK. Mr. Quayle votes no.
Mr. Fleischmann?
Mr. FLEISCHMANN. No.
The CLERK. Mr. Fleischmann votes no.
Mr. Rigell?
Mr. RIGELL. No.
The CLERK. Mr. Rigell votes no.
Mr. Palazzo?
Mr. PALAZZO. No.
The CLERK. Mr. Palazzo votes no.
Mr. Brooks?
Mr. BROOKS. No.
The CLERK. Mr. Brooks votes no.
Mr. Harris?
Mr. HARRIS. No.
The CLERK. Mr. Harris votes no.
Mr. Hultgren?
Mr. HULTGREN. No.
The CLERK. Mr. Hultgren votes no.
Mr. Cravaack?
Mr. CRAVAACK. No.
The CLERK. Mr. Cravaack votes no.
Mr. Bucshon?
[No response.]

The CLERK. Mr. Benishek?
[No response.]
The CLERK. Ms. Johnson?
Ms. JOHNSON. Aye.
The CLERK. Ms. Johnson votes aye.
Mr. Costello?
Mr. COSTELLO. Aye.
The CLERK. Mr. Costello votes aye.
Ms. Woolsey? Did someone say aye?
[VOICE.] No, Woolsey is not here.
The CLERK. Ms. Lofgren?
Ms. LOFGREN. Aye.
The CLERK. Ms. Lofgren votes aye.
Mr. Wu?
Mr. WU. Aye.
The CLERK. Mr. Wu votes aye.
Mr. Miller?
Mr. MILLER. Aye.
The CLERK. Mr. Miller votes aye.
Mr. Lipinski?
Mr. LIPINSKI. Aye.
The CLERK. Mr. Lipinski votes aye.
Ms. Giffords?
[No response.]
The CLERK. Ms. Edwards?
Ms. EDWARDS. Aye.
The CLERK. Ms. Edwards votes aye.
Ms. Fudge?
Ms. FUDGE. Aye.
The CLERK. Ms. Fudge votes aye.
Mr. Luján?
Mr. LUJÁN. Aye.
The CLERK. Mr. Luján votes aye.
Mr. Tonko?
Mr. TONKO. Aye.
The CLERK. Mr. Tonko votes aye.
Mr. McNerney?
Mr. MCNERNEY. Yes.
The CLERK. Mr. McNerney votes aye.
Mr. Sarbanes?
[No response.]
The CLERK. Ms. Sewell?
Ms. SEWELL. Aye.
The CLERK. Ms. Sewell votes aye.
Ms. Wilson?
Ms. WILSON. Aye.
The CLERK. Ms. Wilson votes aye.
Mr. Clarke?
[No response.]
Chairman HALL. The clerk will report the vote.
The CLERK. Mr. Chairman, 13 Members vote aye and 16 Members vote no.

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY - 112th

DATE: 3/17/2011 AMENDMENT NO. 2 ROLL CALL NO. 1

Bill: H.R. 970

SPONSOR of AMEND: Mr. Miller, NC (346)

DEFEATED 13-16

MEMBER	AYE	NO	PRESENT	NOT VOTING
1 Mr. HALL, *Chair* - TX		X		
2 Mr. SENSENBRENNER - WI				
3 Mr. SMITH - TX				
4 Mr. ROHRABACHER - CA		X		
5 Mr. BARTLETT - MD				
6 Mr. LUCAS - OK		X		
7 Mrs. BIGGERT - IL		X		
8 Mr. AKIN - MO				
9 Mr. NEUGEBAUER - TX		X		
10 Mr. McCAUL - TX		X		
11 Mr. BROUN - GA		X		
12 Mrs. ADAMS - FL		X		
13 Mr. QUAYLE - AZ		X		
14 Mr. FLEISCHMANN - TN		X		
15 Mr. RIGELL - VA		X		
16 Mr. PALAZZO - MS		X		
17 Mr. BROOKS - AL		X		
18 Mr. HARRIS - MD		X		
19 Mr. HULTGREN - IL		X		
20 Mr. CRAVAACK - MN		X		
21 Mr. BUCSHON - IN				
22 Mr. BENISHEK - MI				
23 Vacancy				
1 Ms. JOHNSON, *Ranking* - TX	X			
2 Mr. COSTELLO - IL	X			
3 Ms. WOOLSEY - CA				
4 Ms. LOFGREN - CA	X			
5 Mr. WU - OR	X			
6 Mr. MILLER - NC	X			
7 Mr. LIPINSKI - IL	X			
8 Ms. GIFFORDS - AZ				
9 Ms. EDWARDS - MD	X			
10 Ms. FUDGE - OH	X			
11 Mr. LUJÁN - NM	X			
12 Mr. TONKO - NY	X			
13 Mr. McNERNEY - CA	X			
14 Mr. SARBANES - MD				
15 Ms. SEWELL - AL	X			
16 Ms. WILSON - FL	X			
17 Mr. CLARKE - MI				
TOTALS	13	16		

Chairman HALL. On this vote, there are 13 ayes and how many no's? Sixteen no's. The amendment is not agreed to.

Okay. Now we will recess until 10 minutes after the votes, the last vote. Thank you, Ms. Johnson.

[Recess.]

Chairman HALL. Come to order. Are there other amendments to the amendment?

Mr. MCNERNEY. Mr. Chairman?

Chairman HALL. For what purpose does the gentleman seek recognition?

Mr. MCNERNEY. Mr. Chairman, I have an amendment at the desk.

Chairman HALL. Mr. McNerney. The clerk will report the amendment.

The CLERK. Amendment number 347, amendment to the amendment in the nature of a substitute to H.R. 970 offered by Mr. McNerney of California.

Chairman HALL. All right. I would ask unanimous consent to dispense with the reading. Without objection, so ordered. The gentleman is recognized for five minutes to explain the amendment.

Mr. MCNERNEY. Thank you, Mr. Chairman. I would like to explain my amendment. Although many people may not fully appreciate this fact, the FAA is a major force behind much of the research and development that makes sure that aviation safety programs are up to date and able to deal with the constantly evolving technologies and practices. Specifically fire safety is vitally important in the aviation industry both to passengers and to people employed in the industry. With so much potential for combustion, both in the air and on the ground, it is important that strong measures are in place to ensure the safety of both passengers and those who work on the aircraft.

That is why I am introducing an amendment that will maintain funding for the fire safety research at 2010 levels. The language of this amendment adds money to the overall research account to ensure that this adjustment does not affect any other important research accounts.

If anyone has any doubts about why we need to preserve funding for this integral research, let me provide you with two examples. In 1998, a Swiss Air flight from New York to Geneva crashed into the Atlantic Ocean killing all 229 people on board. The cause of the accident was an in-flight fire which started above cockpit and ultimately led to a loss of control of the aircraft.

The accident investigation to find the cause of the crash cost $38 million, but the total economic cost of the tragedy was much higher, and of course, this pales in comparison to the lives lost.

You may also remember the TWA flight 800 which exploded off the coast of New York shortly after takeoff. This terrible accident which occurred in 1996 killed at 236 persons on board. The cause of the accident was determined most likely to be a short circuit which ignited the vapors in the fuel tank. As a result of the NTSB investigation into this accident, new FAA requirements were issued to prevent similar types of accidents in the future. Responding to such tragedies is of course necessary, but it is also a costly way to make up aircraft improvements. We should instead focus on making these improvements proactively to prevent accidents, and this can be achieved by investigations into fire safety research at the FAA.

I know all of us want to keep the American public safe, and I urge you to support my amendment. Thank you, Mr. Chairman, and I yield back.

[The prepared statement of Mr. McNerney follows:]

PREPARED STATEMENT OF REPRESENTATIVE JERRY MCNERNEY

Mr. Chairman, I have an amendment at the desk.

Mr. Chairman, I'd like to explain the important amendment I'm offering to H.R. 970, the Federal Aviation Research and Development Reauthorization Act of 2011. Although many people may not fully appreciate this fact, the FAA is a major force behind much of the research and development that makes sure that the aviation safety programs are up to date and able to deal with constantly evolving technologies and practices.

Specifically, fire safety is vitally important in the aviation industry, both to passengers and to people employed in the industry. With so much potential for combustion, both in the air and on the ground, it is important that strong measures are in place to ensure the safety of both passengers and those who work on the aircraft.

That is why I am introducing an amendment that will maintain funding for fire safety research at 2010 levels. The language of this amendment adds money to the overall research account to ensure that this adjustment does not affect any other important research accounts. If anyone has any doubts about why we need to preserve funding for this integral research, let me provide a few examples.

In 1998, a Swissair Flight from New York to Geneva crashed into the Atlantic Ocean, tragically killing all 229 people on board. The cause of the accident was an in-flight fire which started above the cockpit and ultimately led to a loss of control of the aircraft. The accident investigation to find the cause of the crash cost 38 million dollars. The total economic cost of the tragedy was much higher, and of course this total pales in comparison to the precious lives lost.

You may also remember TWA Flight 800, which exploded off the coast of New York shortly after takeoff. This terrible accident, which occurred in 1996, killed all 230 persons on board. The cause of the accident was determined most likely to be a short circuit which ignited the vapors in the fuel tank. As a result of the NTSB investigation into this incident, new FAA requirements were issued to prevent similar types of accidents in the future. Responding after such tragedies is of course necessary, but it's also a costly way to make aircraft improvements.

We should instead focus on making these improvements in advance of an accident, which can be achieved by investing in fire safety research at the FAA. I know all of us want to keep the American public safe, and I urge you to support my amendment.

Thank you Mr. Chairman, and I yield back.

Chairman HALL. I thank the gentleman. I oppose the amendment. I recognize that the FAA's fire research program has led to very significant safety improvements in the commercial aviation industry here and abroad as the gentleman stated. Most recently their research on the cause of TWA flight 800 tank explosion led to the development of technology that will make modern jet aircraft much more immune to these types of accidents in the future. Having said that, the bill really does nothing to force FAA to reduce funding for fire research and safety activities. What the bill does is authorize FAA's research, engineering and development account at the fiscal year 2008 level. It does not authorize or cap specific funding for any of the underlying R&D activities, thus allowing FAA to direct resources to its highest priority programs or wherever they want to direct them. I urge Members to oppose the amendment.

I will thank the Member for the amendment. Is there further discussion of the amendment? All right. A vote occurs on the amendment. All in favor say aye, no. The no's have it.

Mr. MCNERNEY. Mr. Chairman, I would call for a recorded vote.

Chairman HALL. A recorded vote is called for. The clerk will call the roll.

The CLERK. Chairman Hall?

Chairman HALL. No.

The CLERK. Chairman Hall votes no.

Mr. Sensenbrenner?

[No response.]

The CLERK. Mr. Smith?

[No response.]

The CLERK. Mr. Rohrabacher?

Mr. ROHRABACHER. No.

The CLERK. Mr. Rohrabacher votes no.

Mr. Bartlett?

[No response.]

The CLERK. Mr. Lucas?

[No response.]

The CLERK. Mrs. Biggert?

[No response.]

The CLERK. Mr. Akin?

[No response.]

The CLERK. Mr. Neugebauer?

Mr. NEUGEBAUER. No.

The CLERK. Mr. Neugebauer votes no.

Mr. McCaul?

Mr. MCCAUL. No.

The CLERK. Mr. McCaul votes no.

Mr. Broun?

Mr. BROUN. No.

The CLERK. Mr. Broun votes no.

Mrs. Adams?

Mrs. ADAMS. No.

The CLERK. Mrs. Adams votes no.

Mr. Quayle?

Mr. QUAYLE. No.

The CLERK. Mr. Quayle votes no.

Mr. Fleischmann?

Mr. FLEISCHMANN. No.

The CLERK. Mr. Fleischmann votes no.

Mr. Rigell?

Mr. RIGELL. No.

The CLERK. Mr. Rigell votes no.

Mr. Palazzo?

[No response.]

The CLERK. Mr. Brooks?

Mr. BROOKS. No.

The CLERK. Mr. Brooks votes no.

Mr. Harris?

Mr. HARRIS. No.

The CLERK. Mr. Harris votes no.

Mr. Hultgren?

[No response.]

The CLERK. Mr. Cravaack?

Mr. CRAVAACK. No.

The CLERK. Mr. Cravaack votes no.

Mr. Bucshon?
Mr. BUCSHON. No.
The CLERK. Mr. Bucshon votes no.
Mr. Benishek?
[No response.]
The CLERK. Ms. Johnson?
Ms. JOHNSON. Aye.
The CLERK. Ms. Johnson votes aye.
Mr. Costello?
Mr. COSTELLO. Aye.
The CLERK. Mr. Costello votes aye.
Ms. Woolsey?
[No response.]
The CLERK. Ms. Lofgren?
Ms. LOFGREN. Aye.
The CLERK. Ms. Lofgren votes aye.
Mr. Wu?
[No response.]
The CLERK. Mr. Miller?
Mr. MILLER. Aye.
The CLERK. Mr. Miller votes aye.
Mr. Lipinski?
[No response.]
The CLERK. Ms. Giffords?
[No response.]
The CLERK. Ms. Edwards?
Ms. EDWARDS. Aye.
The CLERK. Ms. Edwards votes aye.
Ms. Fudge?
Ms. FUDGE. Aye.
The CLERK. Ms. Fudge votes aye.
Mr. Luján?
Mr. LUJÁN. Aye.
The CLERK. Mr. Luján votes aye.
Mr. Tonko?
Mr. TONKO. Aye.
The CLERK. Mr. Tonko votes aye.
Mr. McNerney?
Mr. MCNERNEY. Aye.
The CLERK. Mr. McNerney votes aye.
Mr. Sarbanes?
[No response.]
The CLERK. Ms. Sewell?
[No response.]
The CLERK. Ms. Wilson?
Ms. WILSON. Aye.
The CLERK. Ms. Wilson votes aye.
Mr. Clarke?
[No response.]
Mr. LUCAS. Mr. Chairman?
Chairman HALL. Who seeks recognition?
Mr. LUCAS. Mr. Chairman, Lucas, Oklahoma. Can I be recorded as no?
The CLERK. Mr. Lucas votes no.

Mrs. BIGGERT. Mr. Chairman?

Chairman HALL. All right. Are there other Members who wish to vote?

Mrs. BIGGERT. Mr. Chairman?

Chairman HALL. State your name and give your service number.

Mr. LIPINSKI. Mr. Lipinski votes aye.

The CLERK. Mr. Lipinski votes aye.

Mrs. BIGGERT. Mr. Chairman, how am I recorded?

Chairman HALL. You are not recorded.

The CLERK. Mrs. Biggert is not recorded.

Mrs. BIGGERT. I vote no.

The CLERK. Mrs. Biggert votes no.

Mr. PALAZZO. Mr. Chairman, how have I voted?

Chairman HALL. You are not recorded.

The CLERK. Mr. Palazzo is not recorded.

Mr. PALAZZO. No.

The CLERK. Mr. Palazzo votes no.

Chairman HALL. Are there others coming in the room at this time who surely want to vote no? Mr. Hultgren votes——

Mr. HULTGREN. Hultgren votes no.

Chairman HALL. —no.

The CLERK. Mr. Hultgren votes no.

Chairman HALL. Are there others who wish to be recorded? The clerk will report the vote, please.

The CLERK. Mr. Chairman, 11 Members vote aye and 17 Members vote no.

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY - 112th

DATE: 3/17/2011 AMENDMENT NO. 3 ROLL CALL NO. 2

Bill: H.R. 970

SPONSOR of AMEND: Mr. McNerney, CA (347)

DEFEATED 11-17

MEMBER	AYE	NO	PRESENT	NOT VOTING
1 Mr. HALL, *Chair* - TX		X		
2 Mr. SENSENBRENNER - WI				
3 Mr. SMITH - TX				
4 Mr. ROHRABACHER - CA		X		
5 Mr. BARTLETT - MD				
6 Mr. LUCAS - OK		X		
7 Mrs. BIGGERT - IL		X		
8 Mr. AKIN - MO				
9 Mr. NEUGEBAUER - TX		X		
10 Mr. McCAUL - TX		X		
11 Mr. BROUN - GA		X		
12 Mrs. ADAMS - FL		X		
13 Mr. QUAYLE - AZ		X		
14 Mr. FLEISCHMANN - TN		X		
15 Mr. RIGELL - VA		X		
16 Mr. PALAZZO - MS		X		
17 Mr. BROOKS - AL		X		
18 Mr. HARRIS - MD		X		
19 Mr. HULTGREN - IL		X		
20 Mr. CRAVAACK - MN		X		
21 Mr. BUCSHON - IN		x		
22 Mr. BENISHEK - MI				
23 Vacancy				
1 Ms. JOHNSON, *Ranking* - TX	X			
2 Mr. COSTELLO - IL	X			
3 Ms. WOOLSEY - CA				
4 Ms. LOFGREN - CA	X			
5 Mr. WU - OR				
6 Mr. MILLER - NC	X			
7 Mr. LIPINSKI - IL	X			
8 Ms. GIFFORDS - AZ				
9 Ms. EDWARDS - MD	X			
10 Ms. FUDGE - OH	X			
11 Mr. LUJÁN - NM	X			
12 Mr. TONKO - NY	X			
13 Mr. McNERNEY - CA	X			
14 Mr. SARBANES - MD				
15 Ms. SEWELL - AL				
16 Ms. WILSON - FL	X			
17 Mr. CLARKE - MI				
TOTALS	11	17		

Chairman HALL. On this vote, the amendment is not agreed to by a vote of 11 ayes to 17 no's. Mr. Costello asks recognition.

Mr. COSTELLO. Mr. Chairman, a unanimous consent that we go out of order and take my amendment up next pursuant to our conversation?

Chairman HALL. Is there objection? The Chair hears none. The Chair recognizes the gentleman from Illinois.

Mr. COSTELLO. I thank you very much. We have had a discussion, and my understanding is you have agreed to accept this amendment, so I won't mess it up, and I will be very brief. I will ask unanimous consent to distribute a revised amendment to the Committee to ensure funding from my amendment comes out of existing funds and does not increase the cost of the bill. I have made a technical correction to the amendment, and I would ask the clerk to pass it out as I explain the amendment.

Chairman HALL. I thank the gentleman. I understand that he would like to see more research by the Centers of Excellence into the human factors affecting aviation safety, and I believe this amendment will help the FAA to develop methods to enhance aviation safety and efficiency. I also note that the gentleman's amendment with the slight tweak he made to it does not add any additional spending and that the center authorized here is within the discretion of the administrator so that the FAA would use existing funds to perform this research. I support this amendment. I urge my colleagues to support it.

Mr. COSTELLO. Mr. Chairman, I thank you and urge our colleagues to support it as well.

Chairman HALL. Okay. I want to thank the Member for his amendment. If there is further discussion on the amendment, if no the vote occurs on the amendment. All in favor say aye, those opposed say no. The ayes have it. The amendment is accepted.

Okay. Are there other amendments?

Ms. EDWARDS. Mr. Chairman?

Chairman HALL. What purpose does the gentlelady——

Ms. EDWARDS. Mr. Chairman, I have an amendment at the desk.

Chairman HALL. All right. The clerk will report the amendment.

The CLERK. Amendment number 348, amendment to the amendment in the nature of a substitute to H.R. 970 offered by Ms. Edwards of Maryland.

Chairman HALL. All right. I ask unanimous consent to dispense with the reading. Without objection, it is so ordered. The gentlewoman is recognized for five minutes to explain the amendment.

Ms. EDWARDS. Thank you, Mr. Chairman. This amendment is not terribly complicated. It prevents cuts from being made to FAA's flight deck maintenance, system integration, human factors, activities within the research account by continuing these activities not at the fiscal year 2008 levels but the 2010 levels. It is a two-part amendment. The first portion of the amendment adds money to the overall research account to ensure that this adjustment does not negatively impact the other important research accounts, and the second part specifies fiscal year 2010 funding levels be maintained for these activities for the life of the bill.

First of all, let me put it into layman's terms what types of research occur within the flight deck maintenance, system integration, human factors account. This research at its core aims to reduce pilot and maintenance errors that lead to accidents. It is really that simple, and it is also critically important. Pilot and crew error remains the single largest cause of fatal aircraft accidents. Human errors in general constitute the primary cause of fatal air-

craft accidents, and this includes non-flight deck personnel. A prime recent example that has been cited before is the 2009 Colgan air flight which crashed on approach to Buffalo. While icing was a factor in the accident as we have heard, the NTSB also found that crew actions were the primary cause of this crash that killed 50 people, and sometimes we are talking about catastrophic accidents, but near-misses on runways, takeoff, landing where crew actions really are so important are of particular concern. And this is true for smaller airlines, for rural areas and for underserved areas where training and design of the flight deck and those things are really important in making determinations as to whether the crew in those critical moments can make the right decisions.

Now, I understand the urge to address the federal deficit, but choosing rather arbitrary budget targets without consideration of the effects of the specific cuts being considered I think is pretty reckless and not very responsible. My amendment attempts to undo some of this by maintaining vital safety research at the agency. If you just actually look at the amount of money that is spent on investigations alone, it is a pittance of the cost of just investing in the research that would actually lead to better decision making.

I want to thank Ranking Member Johnson and Mr. Costello and our work also on Transportation and Infrastructure Committee that intersects here for their leadership and for working with me on this important amendment. And Mr. Chairman, thank you for your consideration. It is really a small price to pay for safety of the flying public, and I urge support for my amendment. And with that, I yield back.

[The prepared statement of Ms. Edwards follows:]

PREPARED STATEMENT OF REPRESENTATIVE DONNA F. EDWARDS

My amendment is not complicated. It prevents cuts from being made to FAA's "Flightdeck/Maintenance/System Integration Human Factors" activities within the Research account, by continuing these activities at FY 2010 levels. It is a two part amendment. The first portion of the amendment adds money to the overall Research account to ensure that this adjustment does not negatively impact the other important research accounts, and the second part specifies FY 2010 funding levels be maintained for these activities for the life of the bill.

First of all, let me put into laymen's terms what types of research occurs within the "Flightdeck/Maintenance/System Integration Human Factors" account. This research, at its core, aims to reduce pilot and maintenance errors which lead to accidents. It's that simple.

It is also critically important. Pilot and crew error remains the single largest cause of fatal aircraft accidents. Human errors in general constitute the primary cause of fatal aircraft accidents, and this includes non-flightdeck personnel.

A prime recent example is the 2009 Colgan Air flight which crashed on approach to Buffalo. While icing was a factor in the accident, the NTSB found that the crew's actions were the primary cause of this crash, which killed 50 people.

I understand the urge to address the Federal deficit. But choosing arbitrary budget targets without any consideration of the effects of the specific cuts being considered is reckless and irresponsible. My amendment attempts to undo some of this recklessness by maintaining vital safety research at the agency.

Make no mistake, this research saves lives. This research prevents deadly accidents from happening. Cutting this research will result in lives being lost. The effects may not be felt tomorrow, or the next day, but they will happen.

I want to thank Ranking Member Johnson and Congressman Costello for their leadership and working with me on this important amendment. Thank you for your consideration Mr. Chairman. I urge support for my amendment and yield back.

Chairman HALL. The gentlelady yields back. I oppose the amendment. I do so for the very same reason that I raised against the

amendment offered by the gentlemen from North Carolina and from California.

Congress simply has to accept the fact that federal spending has to be cut. By restraining FAA R&D funding at the fiscal year 2008 level, this bill does not choke off research but it does force FAA to be more selective in the types of research it conducts. And to repeat what I said a minute ago, our legislation gives FAA the latitude to invest its research funding in programs it deems to have priority.

I urge Members to oppose the amendment.

Ms. EDWARDS. Mr. Chairman?

Chairman HALL. For what purpose does the gentlelady ask recognition?

Ms. EDWARDS. At the conclusion, if other Members haven't spoken, I would ask for a record——

Chairman HALL. Let me give them a chance.

Ms. EDWARDS. Thank you.

Chairman HALL. Are there others who want to be heard?

Mr. BROOKS. Mr. Chairman, if I might?

Chairman HALL. Mel, are you first?

Mr. BROOKS. Mo.

Chairman HALL. Mr. Brooks.

Mr. BROOKS. Yes, sir. Mel is the movie producer.

Chairman HALL. It is Mo.

Mr. BROOKS. Yes, sir. I am a freshman. You all can tell. I am one of many freshman who came here looking at the budget situation that our nation faces, and quite frankly, we were provoked into running, not that we desired it but felt that we had to in order to save our nation from fiscal peril.

During the first six years of the Bush Administration, we averaged $300 billion a year in budget deficits. Those are bad. Since the change in the elections of November of 2006, over the four succeeding years, those budget deficits have multiplied by a factor of four to an average of $1.2 trillion a year. It is one year to have bad budget deficits. It is another thing to have deficits that threaten the very survival of our Federal Government, and that is what these do. $1.2 trillion-a-year deficits are unsustainable, absolutely unsustainable. They risk a federal bankruptcy, they risk a federal insolvency. If the Federal Government goes bankrupt, and that is the path that it is headed on, then there will not be money to fund any of the programs that these amendments purport to assist. Quite frankly, given that kind of economic environment, I would submit that it is irresponsible for us as a government to continue to spend money that we don't have no matter how much we would like to spend it.

The responsible thing to do I would submit would be to suggest cuts elsewhere in the funding so that we have a comparison point between item A and item B, and we can decide which is the higher priority. But that does not seem to be the path promoted by any of these amendments that have been supported so far or thrust upon us, and as such faced with a Federal Government bankruptcy with the hardship that would result from a Federal Government bankruptcy, faced with the fact that there is a risk that all of the programs that go through Science, Space, and Technology would

get zero money if there is a Federal Government insolvency and bankruptcy. I would submit that the very responsible thing to do, no matter how much we don't like it, is to maintain the Chairman's position to not increase this spending beyond our means and to vote against each and every one of these amendments that propose no alternative sources for funding and cut no place else in the budget.

So I want the record to reflect why I so strongly oppose each one of these fiscally irresponsible endeavors to amend this budget to spend money that we don't have. And as a caveat, I would add one other thing. In the month of February, the deficit was $223 billion. That is for one month. Now, keep in mind that the White House's projection for this fiscal year is $1.65 trillion deficit. Well, if that February number turns out to be a trend rather than an aberration, then we are looking at a budget deficit, if it is a trend, of $2.5 trillion in this one year alone.

Folks, we have to start understanding that no matter how much we want to spend other people's money, no matter how much we may want to risk bankrupting our Federal Government, we can't do it if we are going to save America as a great nation.

And so with that, Mr. Chairman, I yield the remainder of my time.

Chairman HALL. I thank the gentleman from——

Ms. LOFGREN. Mr. Chairman?

Chairman HALL. For what purpose does the lady from California?

Ms. LOFGREN. To strike the last word.

Chairman HALL. I recognize you for five minutes.

Ms. LOFGREN. Thank you, Mr. Chairman. I just want to make a couple of brief comments, and I have no doubt that the gentleman is sincere, but I think it is important to note that the United States is not bankrupt and is not going bankrupt. We have a fiscal challenge. When President Clinton left office, as you know, we were running a surplus. Right after that we borrowed about $4 trillion for two wars and encountered a recession that has severely impacted our revenues.

No one disagrees that there is a need to get spending under control as well as improve the revenue picture. But I just would note that there are areas where if you cut, you actually end up paying more. And when it comes to research and prevention of disaster, that is one of those things where it is penny-wise and pound-foolish. And I think this is one of those instance. I hope that the gentleman will be voting for the resolution to end the war later today, if he is as concerned about the deficit as he says that he is, and I would yield the balance of my time to Mr. Miller.

Mr. MILLER. Thank you, Ms. Lofgren. I want to concede that the comments that we just heard were sincere, but it certainly shows amnesia and it is hard to imagine it is not willful amnesia.

Just a decade ago, Congress was debating what to do with the surplus. We paid off $400 billion of the national debt. Alan Greenspan, then the Chairman of the Federal Reserve Board, was worried that we would pay off the national debt too quickly and would be unsettling for the economy. That was a Republican President and a Republican Congress that addressed that important problem,

what to do with the surplus, how to avoid paying off the national debt too quickly, and I must compliment the Republicans, you did a spectacular job of solving that problem. We really do not have a problem of paying off the national debt too quickly now.

But we are seeing what the consequences of that are. In order to give tax cuts to people who have their own jets, their own private jets, we are making commercial aviation, which the middle class has to rely upon, much more dangerous. We are cutting funding for icing. We are cutting funding for research into human errors. We are cutting funding for research into on-board fires, all of which we know have cost hundreds of people's, thousands of people's lives over the years, and it is remarkably shortsighted because we know every time there is a crash, we spend tens of millions of dollars in search and recovery, in investigations into what caused the crash and on and on.

And I am sure that just as we now have willful amnesia about why we have a deficit, when those crashes occur in the future because of icing or because of an on-board fire or because of human error, we will again hear willful amnesia that these cuts that could have avoided it, they will not be remembered at all. I yield back.

Chairman HALL. The gentleman yields back. Who else seeks recognition? Mr. Cravaack from Minnesota, I recognize you for five minutes.

Mr. CRAVAACK. Thank you, Mr. Chairman.

Chairman HALL. And Mr. Cravaack, I would like to—would you yield for a question?

Mr. CRAVAACK. Yes, sir, I would.

Chairman HALL. Do you believe Mr. Miller was talking about the surplus that Obama did away with?

Mr. CRAVAACK. Sir, all I can tell you is the last four years we have had $3 trillion in deficit——

Chairman HALL. The deficit of the next two or three generations of our children?

Mr. CRAVAACK. Yes, sir. That is why I am here.

Chairman HALL. I yield back my time.

Mr. CRAVAACK. Yes, sir. I am hearing from the other side of the aisle here, and I got to be honest with you, I am wondering what country you are in because the only reason I am here is because of the debt that is being transferred to our children and our grandchildren. I was very happy being a stay-at-home dad, and all the amount of debt that is being transferred on our kids is the only reason why I decided to stand up and basically run for Congress.

So we are reaching quickly 100 percent GDP. All we need to do is take a look at what has happened in countries such as Iceland, Spain, now losing Moody's rating. These are things that we need to take a look at because the course is set before us. Now, if you want to continue going on this course and going toward this cliff, that is up to you. But I am here to change that course and bring this carrier back around again.

Also, as a background, I am a Navy pilot and I am also a commercial airline pilot with thousands of hours in different types of aircraft. And I can tell you that a lot of the accidents we hear about here today were definitely combination errors. There is never one single thing that creates an aircraft accident. It is a combination

of things. We learned a lot. I was actually an instructor at Northwest Airlines.

In Iceland, one of the decision-making factors in taking a look at this fire was making sure that the pilots knew that they needed to get to an airport quickly. This is all part of a decision-making factor. TWA, I was actually a flight engineer on a 747. There are some things that you just can't plan for, and aviation is an unusual industry. When you are flying aircraft, you cannot plan for everything.

As a Navy pilot, one of the most orchestrated places you will ever see is the flight deck of a carrier. But you know what? Sometimes things go wrong, and people get killed. That is just the nature of the beast.

Now, no matter how much money you dump on this, you are not going to be able to solve those problems, and you have got to remember, too, it is also incumbent upon the airlines themselves to research their own methods, make sure that their methods are up to par, in how their cockpit coordination goes, their CRM.

So dumping money on a problem isn't solving the problem. So we need to take a look in making sure that we have the funding that is available. I believe that the funding appropriated in this bill is enough, and I think that the pilots also realize that it is incumbent upon them, the airlines, it is incumbent upon them, to make sure that their procedures are in place to learn from these very valuable lessons.

In the Navy we had, it is called NATOPS, Naval Aviation Training Operation Procedure Manual, and parts of that manual were written in red. And the reason why they were written in red is because they were written in blood because something that wasn't planned for, happened. And that is unfortunately the nature of the beast, and that is the nature of aviation.

Mr. ROHRABACHER. Would the gentleman yield for a question?

Mr. CRAVAACK. Yes, sir, I would yield.

Mr. ROHRABACHER. Are you a freshman this year I take it?

Mr. CRAVAACK. Can't you tell?

Mr. ROHRABACHER. Well, first, let me ask you, are you fully aware that if these folks were really concerned about what they are complaining about, if there was a lack of money, that they could shift money from somewhere else in this bill and in the budget to handle that specific objection? Are you aware of that?

Mr. CRAVAACK. No, sir, I am not, but thank you for that information.

Mr. ROHRABACHER. So you will understand that when someone there is saying how horrible this is, if they are willing to prioritize on something else that they consider less important, they can shift that over.

Are you aware that when the gentleman was talking about the balanced budget that Bill Clinton gave us that it was a Republican Congress that was in place at that time?

Mr. CRAVAACK. Yes, sir. I am aware of that.

Mr. ROHRABACHER. Are you aware that the Democrats took over the House of Representatives two years into the last term of the Bush Administration, and at that time the budget deficit was I

think $120 billion and that now has been turned into $1.5 trillion with a Democrat president and a Democrat Congress?

Mr. CRAVAACK. Yes, sir, I am, but thank you for emphasizing it.

Mr. ROHRABACHER. All right. I just thought you might not know that as a freshman, but I am glad to have this opportunity to talk to you about it.

Mr. CRAVAACK. Thank you very much, and I will yield back my time. And again, dumping money on a problem doesn't necessarily solve the problem. And I do not think that increased funding in this area is what is needed at this time and that we need to make sure that the airlines also own this and they update their procedures as well.

So I speak against the amendment. Thank you, sir. I yield back my time.

Chairman HALL. The gentleman yields back his time. Were there others who wish to be heard? Mr. Palazzo, I believe you were asking to be recognized. I recognize you for five minutes.

Mr. PALAZZO. Sir, I just have an amendment at the desk at the proper time but not to be recognized. Thank you.

Chairman HALL. Okay.

Mr. HARRIS. Mr. Chairman?

Chairman HALL. Who——

Mr. HARRIS. This way. The freshman side.

Chairman HALL. Mr. Harris.

Mr. HARRIS. If I could just be recognized for 30 seconds.

Chairman HALL. I recognize you for five minutes——

Mr. HARRIS. I will only take 30 seconds, Mr. Chairman.

Chairman HALL. —no matter what state you are from.

Mr. HARRIS. Maryland, the wonderful Eastern Shore of Maryland. As a physician, you know, amnesia requires that a fact has to be present first if you are going to forget it. The fact of the matter is, we haven't had a unified budget surplus in decades. The myth that the budget was balanced under the Clinton Administration is a myth. We borrowed billions of dollars from Social Security, robbing all the folks in that room who are not at retirement age from the possibility of having a fiscally sound Social Security system. It is a myth. It is something that has been perpetuated in Washington for decades. We have not had a balanced budget. It hasn't been balanced for decades, and Mr. Chairman, I applaud your efforts to try to bring this budget into balance.

I yield back the balance of my time.

Chairman HALL. The gentleman yields back the balance of his time. Is there further discussion on the amendment? If no, the vote occurs on the amendment. All in favor say aye, opposed say no. In the Chair's opinion, the no's have it. The no's have it.

Ms. EDWARDS. And now, Mr. Chairman, I do want to ask for that recorded vote.

Chairman HALL. Recorded vote is requested. The clerk will call the roll.

The CLERK. Chairman Hall?

Chairman HALL. No.

The CLERK. Chairman Hall votes no.

Mr. Sensenbrenner?

[No response.]

The CLERK. Mr. Smith?
[No response.]
The CLERK. Mr. Rohrabacher?
Mr. ROHRABACHER. No.
The CLERK. Mr. Rohrabacher votes no.
Mr. Bartlett?
[No response.]
The CLERK. Mr. Lucas?
[No response.]
The CLERK. Mrs. Biggert?
Mrs. BIGGERT. No.
The CLERK. Mrs. Biggert votes no.
Mr. Akin?
[No response.]
The CLERK. Mr. Neugebauer?
Mr. NEUGEBAUER. No.
The CLERK. Mr. Neugebauer votes no.
Mr. McCaul?
Mr. MCCAUL. No.
The CLERK. Mr. McCaul votes no.
Mr. Broun?
Mr. BROUN. No.
The CLERK. Mr. Broun votes no.
Mrs. Adams?
Mrs. ADAMS. No.
The CLERK. Mrs. Adams votes no.
Mr. Quayle?
Mr. QUAYLE. No.
The CLERK. Mr. Quayle votes no.
Mr. Fleischmann?
Mr. FLEISCHMANN. No.
The CLERK. Mr. Fleischmann votes no.
Mr. Rigell?
Mr. RIGELL. No.
The CLERK. Mr. Rigell votes no.
Mr. Palazzo?
Mr. PALAZZO. No.
The CLERK. Mr. Palazzo votes no.
Mr. Brooks?
Mr. BROOKS. No.
The CLERK. Mr. Brooks votes no.
Mr. Harris?
Mr. HARRIS. No.
The CLERK. Mr. Harris votes no.
Mr. Hultgren?
Mr. HULTGREN. No.
The CLERK. Mr. Hultgren votes no.
Mr. Cravaack?
Mr. CRAVAACK. No.
The CLERK. Mr. Cravaack votes no.
Mr. Bucshon?
Mr. BUCSHON. No.
The CLERK. Mr. Bucshon votes no.
Mr. Benishek?

[No response.]
The CLERK. Ms. Johnson?
Ms. JOHNSON. Aye.
The CLERK. Ms. Johnson votes aye.
Mr. Costello?
[No response.]
The CLERK. Ms. Woolsey?
Ms. WOOLSEY. Aye.
The CLERK. Ms. Woolsey votes aye.
Ms. Lofgren?
Ms. LOFGREN. Aye.
The CLERK. Ms. Lofgren votes aye.
Mr. Wu?
Mr. WU. Aye.
The CLERK. Mr. Wu votes aye.
Mr. Miller?
Mr. MILLER. Aye.
The CLERK. Mr. Miller votes aye.
Mr. Lipinski?
Mr. LIPINSKI. Aye.
The CLERK. Mr. Lipinski votes aye.
Ms. Giffords?
[No response.]
The CLERK. Ms. Edwards?
Ms. EDWARDS. Aye.
The CLERK. Ms. Edwards votes aye.
Ms. Fudge?
Ms. FUDGE. Aye.
The CLERK. Ms. Fudge votes aye.
Mr. Luján?
[No response.]
The CLERK. Mr. Tonko?
Mr. TONKO. Aye.
The CLERK. Mr. Tonko votes no.
Mr. McNerney?
Mr. Tonko votes aye. Sorry. I wrote aye, I just said no. Excuse me.
Mr. McNerney?
Mr. MCNERNEY. Aye.
The CLERK. Mr. McNerney votes aye.
Mr. Sarbanes?
[No response.]
The CLERK. Ms. Sewell?
[No response.]
The CLERK. Ms. Wilson?
Ms. WILSON. Aye.
The CLERK. Ms. Wilson votes aye.
Mr. Clarke?
Mr. CLARKE. Aye.
The CLERK. Mr. Clarke votes aye.
Mr. LUJÁN. Mr. Chairman?
Chairman HALL. Who seeks recognition?
Mr. LUJÁN. Mr. Luján of New Mexico.

Chairman HALL. Mr. Luján is recognized. How is Mr. Luján recorded?

The CLERK. Mr. Luján is not recorded.

Mr. LUJÁN. I would like to record as aye.

The CLERK. Mr. Luján votes aye.

Mr. LUCAS. Mr. Chairman? Mr. Lucas of Oklahoma.

Chairman HALL. Mr. Lucas of Oklahoma, not recorded.

Mr. LUCAS. No.

The CLERK. Mr. Lucas votes no.

Chairman HALL. Are there others? Anyone else? Okay. The clerk—are you ready to report the vote?

The CLERK. Mr. Chairman, 13 Members vote aye and 17 Members vote no.

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY - 112th

DATE: 3/17/2011 AMENDMENT NO. 5 ROLL CALL NO. 3

Bill: H.R. 970

SPONSOR of AMEND: Ms. Edwards, MD (348)

DEFEATED 13-17

MEMBER	AYE	NO	PRESENT	NOT VOTING
1 Mr. HALL, *Chair* - TX		X		
2 Mr. SENSENBRENNER - WI				
3 Mr. SMITH - TX				
4 Mr. ROHRABACHER - CA		X		
5 Mr. BARTLETT - MD				
6 Mr. LUCAS - OK		X		
7 Mrs. BIGGERT - IL		X		
8 Mr. AKIN - MO				
9 Mr. NEUGEBAUER - TX		X		
10 Mr. McCAUL - TX		X		
11 Mr. BROUN - GA		X		
12 Mrs. ADAMS - FL		X		
13 Mr. QUAYLE - AZ		X		
14 Mr. FLEISCHMANN - TN		X		
15 Mr. RIGELL - VA		X		
16 Mr. PALAZZO - MS		X		
17 Mr. BROOKS - AL		X		
18 Mr. HARRIS - MD		X		
19 Mr. HULTGREN - IL		X		
20 Mr. CRAVAACK - MN		X		
21 Mr. BUCSHON - IN		X		
22 Mr. BENISHEK - MI				
23 Vacancy				
1 Ms. JOHNSON, *Ranking* - TX	X			
2 Mr. COSTELLO - IL				
3 Ms. WOOLSEY - CA	X			
4 Ms. LOFGREN - CA	X			
5 Mr. WU - OR	X			
6 Mr. MILLER - NC	X			
7 Mr. LIPINSKI - IL	X			
8 Ms. GIFFORDS - AZ				
9 Ms. EDWARDS - MD	X			
10 Ms. FUDGE - OH	X			
11 Mr. LUJÁN - NM	X			
12 Mr. TONKO - NY	X			
13 Mr. McNERNEY - CA	X			
14 Mr. SARBANES - MD				
15 Ms. SEWELL - AL				
16 Ms. WILSON - FL	X			
17 Mr. CLARKE - MI	X			
TOTALS	13	17		

Chairman HALL. All right. The no's are 17, the ayes are 13. The amendment is not agreed to.

Are there other amendments to the amendment?

Mr. PALAZZO. Mr. Chairman, I have an amendment at the desk.

Chairman HALL. All right. The clerk will report the amendment.

The CLERK. Amendment number 003, amendment to the amendment in the nature of a substitute to H.R. 970 offered by Mr. Palazzo of Mississippi.

Chairman HALL. I would ask unanimous consent to dispense with the reading. Without objection, it is so ordered.

The gentleman is recognized for five minutes to explain his amendment.

Mr. PALAZZO. Thank you, Mr. Chairman. This amendment does not in any way alter the intention of this section or the bill which is to recognize the importance of these research and development provisions. What it does is prevent the CBO from counting these programs as being funded both in this bill and in the larger FAA bill. We have run this by CBO and have been told that this minor change should address this double accounting problem.

I urge its adoption, and with that I yield back my time.

Chairman HALL. The gentleman yields back his time. Are there others who wish to be recognized? All right. If no other one wants to be recognized, a vote occurs on the amendment. All in favor say aye, all opposed no. The ayes have it.

Mr. BROUN. Mr. Chairman.

Chairman HALL. The amendment is agreed to. Are there other amendments to the amendment?

Mr. BROUN. Mr. Chairman?

Chairman HALL. The gentleman from Alabama.

Mr. BROUN. Georgia.

Chairman HALL. Georgia. Close. For the mistake I made, I will grant you 10 minutes.

Mr. BROUN. Mr. Chairman, I don't need 10 minutes. Can I take a rain check and get that later on? Mr. Chairman, I have an amendment at the desk.

Chairman HALL. All right. The clerk will report the amendment.

The CLERK. Amendment number 345, amendment to the amendment in the nature of a substitute to H.R. 970 offered by Mr. Broun of Georgia.

Chairman HALL. I would ask unanimous consent to dispense with the reading. Without objection, it is so ordered.

The gentleman will be recognized for as much time as he needs to explain the amendment.

Mr. BROUN. Thank you, Mr. Chairman. My amendment is intended to ensure that we are not increasing the costs of the bill above fiscal year 2008 levels. This amendment would ensure that the funding for the specified sections comes out of the funds authorized for research in the bill.

Additionally, my amendment would require that the administrator perform the assessments in Sections 1012 and 1013 in house rather than requiring a contract with an outside group. This would reduce the cost of the assessment and would allow more funds to be devoted to research and development in other areas. It is a very simple amendment. Mr. Chairman, I thank the Chairman and urge my colleagues to support this very simple amendment, and I yield back.

Chairman HALL. The gentleman yields back. Is there further discussion on the amendment?

Ms. JOHNSON. I have.

Chairman HALL. The Chair recognizes Mr. Johnson for as much time as she requires.

Ms. JOHNSON. Thank you very much, Mr. Chairman. Unfortunately, I oppose this amendment offered by the gentleman from Georgia.

This amendment would eliminate the good government conduct of having independent reviews, in this case, of two FAA programs, energy and environment-related research programs and aviation safety-related research programs and direct the agency to take on that function.

While federal agencies routinely carry out their own internal problematic reviews, that function cannot replace the need of external, independent assessments by individuals who are not involved in the management or decision making on the agency's programs being reviewed.

We have had lots of problems in that area, and we hope we have straightened out a lot of them. The advice of experts serving an independent, nongovernmental body provides a critical checks and balance on the agency programs. As stewards of the taxpayers' dollars, we need to ensure our direction on agency program benefits from the external, independent analysis. I cannot see how this amendment serves the best interest of the important FAA research on energy and environment programs and aviation safety.

So I would urge my colleagues to vote no on this amendment. Thank you.

[The prepared statement of Ms. Johnson follows:]

PREPARED STATEMENT OF REPRESENTATIVE EDDIE BERNICE JOHNSON

- Mr. Chairman, I oppose the Amendment offered by the gentleman from Georgia, Mr. Broun.
- This amendment would eliminate the "good government" conduct of having independent reviews, in this case, of two FAA programs—energy and environment-related research programs and aviation safety-related research programs—and direct the agency to take on that function.
- While Federal agencies routinely carry out their own internal programmatic reviews, that function cannot replace the need for external, independent assessments by individuals who are not involved in the management of or decision making on the agency programs being reviewed.
- The advice of experts serving an independent, non-governmental body provides a critical check-and-balance on agency programs.
- As stewards of taxpayer dollars, we need to ensure our direction on agency programs benefits from in external, independent analysis.
- I can't see how this Amendment serves the best interests of important FAA research on energy and environmental programs and aviation safety.
- I urge my colleagues to **vote *NO*** on this Amendment.

Chairman HALL. The gentlelady gives back her time. Anyone want to be heard?

Mr. MILLER. Mr. Chairman?

Chairman HALL. Yes.

Mr. MILLER. To your right. Mr. Miller of North Carolina.

Chairman HALL. Oh, Mr. Miller. Mr. Miller, I recognize you for as much time as you need as long as you don't need over five minutes. No, we owe you some time because you didn't use your time last time.

Mr. MILLER. That is fine, Mr. Chairman. It won't take——

Chairman HALL. Go ahead.

Mr. MILLER. —that long. I oppose this amendment also. I have dealt with the FAA for four years as Chairman of the Oversight Subcommittee of this Committee, and the FAA is very much given to that tendency of government officials we now know around the world, including Japan, to say everything is fine. Don't worry, we have got everything under control. My own view and I think the view of the American people is we would rather you let us know if something is wrong or let us know the truth and we will decide ourselves whether or not we should worry, but don't just tell us not to worry and keep from us the facts.

And they also don't like anybody looking over their shoulder. It is very important that we have another set of eyes on FAA and that we not just count on them.

So I very much support having this research done independently, this assessment done independently, and oppose the amendment. I yield back.

Chairman HALL. The gentleman yields back. Are there others who want to speak for or against the amendment? I reserve three minutes on this amendment.

I thank the gentleman for his amendment. I think his amendment is very helpful in ensuring that the new programs created by the bill be funded as part of research and development of the FAA. Additionally, I am pleased that the gentleman is allowing FAA to do these assessments in-house as a way to conserve limited resources, and I am hopeful that this is going to help the Administrator to be able to stretch the funds even further. And I thank the gentleman for his amendment. If there is no further discussion on the amendment, the vote occurs on the amendment. All in favor say aye, opposed say no. In the opinion of the chair, the ayes have it.

Mr. MILLER. Mr. Chairman?

Chairman HALL. Who seeks recognition?

Mr. MILLER. Mr. Miller of North Carolina again.

Chairman HALL. Mr. Miller of North Carolina, you have an amendment, sir?

Mr. MILLER. I do.

Chairman HALL. All right. The clerk will report the amendment.

The CLERK. Amendment number 003, amendment to the amendment in the nature of a substitute to H.R. 970 offered by Mr. Miller of North Carolina.

Chairman HALL. All right. I ask unanimous consent to dispense with the reading. Without objection, it is so ordered.

The Chair recognizes the gentleman on his amendment.

Mr. MILLER. Thank you. This amendment is also aimed at addressing safety issues within the aviation system, and again, the FAA, like government officials around the world, and now we know including Japan, are very much inclined to say don't worry, we have got everything under control when what I think all of us would prefer is that they just tell us the truth and let us decide whether to worry or not.

The FAA did not much like NASA doing the survey or pilots and others involved in aviation, but the pilots were quite eager to tell what they were seeing because they were concerned. The GAO looked at the survey and decided that the information, because of

a variety of reasons, most notably that there were such extraordinary efforts to protect anonymity that it made the information somewhat useless, that the initial survey did not provide usable data but that a survey made a lot of sense. And the conduct of the survey showed that a survey could be conducted successfully. It would be very useful in identifying problems in aviation, safety problems in aviation. One is to identify precursor events. That is not hard to figure out. Precursor event for in-air collisions are near-misses. If you have a whole lot of near-misses, you should worry that one time they're not going to miss.

This amendment will make it clear, will ask them to look at whether a survey can be used and will be useful in assessing aviation safety. I yield back.

[The prepared statement of Mr. Miller follows:]

PREPARED STATEMENT OF REPRESENTATIVE BRAD MILLER

Mr Chairman, like my other amendment, this amendment is aimed at addressing safety issues within the aviation system. My amendment would ensure that any analysis of FAA R&D programs (whether carried it out by NRC or FFAA) to consider whether a survey of participants across the air transportation system is an appropriate way to study safety risks within the air transportation system.

In 1997, The National Aviation Operations Monitoring Service (NAOMS) project was conceived in order to develop a survey methodology that would identify *accident precursors* and *trends* within the aviation system. This survey was to cover everyone within the aviation system from pilots, to ground control to baggage handlers. The thought was that if you actually asked people what they were seeing, what near misses they had discovered you might be able to identify risks in the system more quickly and accurately than if you only collected data on failures or near-failures within the system.

Limitations in the survey methodology and data entry ultimately led to the end of the NAOMS project, and data collected from the survey was never analyzed.

With the demise of the NAOMS project, it appears that FAA and NASA have given up on the idea of using a survey to identify risks within the aviation system.

But I believe strongly in the utility of a survey, something that actually asks people what they are seeing rather than relying on "incidents" to occur. Both the GAO and NAS found that as a research and development tool, NAOMS was largely successful, that we can still use the lessons learned from this project as a step to develop and implement a survey that will work. The taxpayer money that went into the NAOMS project doesn't have to be wasted.

The survey was not ready for prime time, and there are still challenges to be overcome in both the methodology and making sure that survey data could be integrated with other safe-data collection systems, specifically the Aviation Safety Information Analysis and Sharing System (ASIAS).

I believe that the development of a workable survey should be part of the FAA's Aviation Safety Related Research Programs. The purpose of my amendment is to draw attention to this aspect of aviation safety research, and to prompt the FAA to include surveys as part of safety programs in the future.

Chairman HALL. The gentleman yields back. Does anyone else want to be heard? You may not believe it, but I support the gentleman's amendment. It adds a provision that directs FAA to assess the usefulness of surveys used to measure safety trends in the aviation industry itself. So Mr. Miller's interest in surveys conducted both by FAA and NASA is well-founded given the Committee's history on this issue.

Mr. Cravaack wishes to be recognized. The gentleman is recognized for five minutes.

Mr. CRAVAACK. Yes, sir. I speak in favor of the amendment as well. I think it is an excellent opportunity for pilots and those that are on the ground floor to be able to provide input. It is valuable input as long as the anonymity of the participant of the survey is

protected. I think it is an excellent way to provide information and to be able to prevent any future accidents or incidents in the future.

So I speak in favor of the amendment.

Chairman HALL. And I thank you.

Mr. CRAVAACK. I yield back.

Chairman HALL. Mr. Cravaack is a wonderful Member of this Committee with his background and his expertise at this level is very, very valuable to this Committee and to this Congress. I know Mr. Miller appreciates his support.

Is there further discussion on the amendment? If no, the vote occurs on the amendment. All in favor say aye, those opposed no. The ayes have it. The amendment is accepted.

Are there any other amendments? If there are no further amendments, the question is on agreeing to the amendment in the nature of a substitute as amended. All those in favor will say aye, all those opposed will say no. In the opinion of the Chair, the ayes have it.

The question now occurs on agreeing to the bill, H.R. 970 as amended. All those in favor will say aye, all those opposed say no. In the opinion of the Chair, the ayes have it.

Ms. JOHNSON. I would like to ask for a record vote on it.

Chairman HALL. Record vote is requested. Is there objection? The Chair hears none. The clerk will call the roll.

The CLERK. Chairman Hall?

Chairman HALL. Aye.

The CLERK. Chairman Hall votes aye.

Mr. Sensenbrenner?

[No response.]

The CLERK. Mr. Smith?

[No response.]

The CLERK. Mr. Rohrabacher?

[No response.]

The CLERK. Mr. Bartlett?

[No response.]

The CLERK. Mr. Lucas?

Mr. LUCAS. Yes.

The CLERK. Mr. Lucas votes aye.

Mrs. Biggert?

Mrs. BIGGERT. Aye.

The CLERK. Mrs. Biggert votes aye.

Mr. Akin?

[No response.]

The CLERK. Mr. Neugebauer?

Mr. NEUGEBAUER. Aye.

The CLERK. Mr. Neugebauer votes aye.

Mr. McCaul?

Mr. MCCAUL. Aye.

The CLERK. Mr. McCaul votes aye.

Mr. Broun?

Mr. BROUN. Aye.

The CLERK. Mr. Broun votes aye.

Mrs. Adams?

Mrs. ADAMS. Aye.

The CLERK. Mrs. Adams votes aye.

Mr. Quayle?
Mr. QUAYLE. Aye.
The CLERK. Mr. Quayle votes aye.
Mr. Fleischmann?
Mr. FLEISCHMANN. Aye.
The CLERK. Mr. Fleischmann votes aye.
Mr. Rigell?
Mr. RIGELL. Aye.
The CLERK. Mr. Rigell votes aye.
Mr. Palazzo?
Mr. PALAZZO. Aye.
The CLERK. Mr. Palazzo votes aye.
Mr. Brooks?
Mr. BROOKS. Aye.
The CLERK. Mr. Brooks votes aye.
Mr. Harris?
Mr. HARRIS. Aye.
The CLERK. Mr. Harris votes aye.
Mr. Hultgren?
Mr. HULTGREN. Aye.
The CLERK. Mr. Hultgren votes aye.
Mr. Cravaack?
Mr. CRAVAACK. Aye.
The CLERK. Mr. Cravaack votes aye.
Mr. Bucshon?
Mr. MR. BUCSHON. Aye.
The CLERK. Mr. Bucshon votes aye.
Mr. Benishek?
[No response.]
The CLERK. Ms. Johnson?
Ms. JOHNSON. No.
The CLERK. Ms. Johnson votes no.
Mr. Costello?
[No response.]
The CLERK. Ms. Woolsey?
Ms. WOOLSEY. No.
The CLERK. Ms. Woolsey votes no.
Ms. Lofgren?
Ms. LOFGREN. No.
The CLERK. Ms. Lofgren votes no.
Mr. Wu?
[No response.]
The CLERK. Mr. Miller?
Mr. MILLER. No.
The CLERK. Mr. Miller votes no.
Mr. Lipinski?
Mr. LIPINSKI. No.
The CLERK. Mr. Lipinski votes no.
Ms. Giffords?
[No response.]
The CLERK. Ms. Edwards?
Ms. EDWARDS. No.
The CLERK. Ms. Edwards votes no.
Ms. Fudge?

Ms. FUDGE. No.
The CLERK. Ms. Fudge votes no.
Mr. Luján?
Mr. LUJÁN. No.
The CLERK. Mr. Luján votes no.
Mr. Tonko?
Mr. TONKO. No.
The CLERK. Mr. Tonko votes no.
Mr. McNerney?
Mr. MCNERNEY. No.
The CLERK. Mr. McNerney votes no.
Mr. Sarbanes?
[No response.]
The CLERK. Ms. Sewell?
[No response.]
The CLERK. Ms. Wilson?
Ms. WILSON. No.
The CLERK. Ms. Wilson votes no.
Mr. Clarke?
Mr. CLARKE. No.
The CLERK. Mr. Clarke votes no.

Chairman HALL. The clerk will report the vote. Is there anyone else who wishes to vote, who wants to be recognized. Mr. Wu?

Mr. WU. No.

The CLERK. Mr. Wu is not recorded. Mr. Wu votes no.

Chairman HALL. Is there anyone else. Mr. Akin would like to be recorded as yes.

The CLERK. Mr. Akin votes aye.

Chairman HALL. Thank you, Mr. Akin. Anyone else? The clerk will report the vote.

The CLERK. Mr. Chairman, 17 Members vote aye and 13 Members vote no.

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY - 112th

DATE: 3/17/2011 AMENDMENT NO. ROLL CALL NO. 4

Bill: H.R. 970

Final Passage of H.R. 970

the " Federal Aviation Research and Development Reauthorization Act of 2011"

Passed 17-13

MEMBER	AYE	NO	PRESENT	NOT VOTING
1 Mr. HALL, *Chair* - TX	X			
2 Mr. SENSENBRENNER - WI				
3 Mr. SMITH - TX				
4 Mr. ROHRABACHER - CA				
5 Mr. BARTLETT - MD				
6 Mr. LUCAS - OK	X			
7 Mrs. BIGGERT - IL	X			
8 Mr. AKIN - MO	X			
9 Mr. NEUGEBAUER - TX	X			
10 Mr. McCAUL - TX	X			
11 Mr. BROUN - GA	X			
12 Mrs. ADAMS - FL	X			
13 Mr. QUAYLE - AZ	X			
14 Mr. FLEISCHMANN - TN	X			
15 Mr. RIGELL - VA	X			
16 Mr. PALAZZO - MS	X			
17 Mr. BROOKS - AL	X			
18 Mr. HARRIS - MD	X			
19 Mr. HULTGREN - IL	X			
20 Mr. CRAVAACK - MN	X			
21 Mr. BUCSHON - IN	X			
22 Mr. BENISHEK - MI				
23 Vacancy				
1 Ms. JOHNSON, *Ranking* - TX		X		
2 Mr. COSTELLO - IL				
3 Ms. WOOLSEY - CA		X		
4 Ms. LOFGREN - CA		X		
5 Mr. WU - OR		X		
6 Mr. MILLER - NC		X		
7 Mr. LIPINSKI - IL		X		
8 Ms. GIFFORDS - AZ				
9 Ms. EDWARDS - MD		X		
10 Ms. FUDGE - OH		X		
11 Mr. LUJÁN - NM		X		
12 Mr. TONKO - NY		X		
13 Mr. McNERNEY - CA		X		
14 Mr. SARBANES - MD				
15 Ms. SEWELL - AL				
16 Ms. WILSON - FL		X		
17 Mr. CLARKE - MI		X		
TOTALS	17	13		

Chairman HALL. The amendment is agreed to, and the bill as amended is agreed to.

Before I recognize Mr. Palazzo to offer a motion, I want to recognize Mr. Wu who sent me a Happy Chinese New Year's Day from the Wu family, and he also has a picture of his darling daughter

and his fine-looking son on it. And he states that the Chinese year is 1709, and if that is true, I am 2,785 years old.

I thank you, Mr. Wu, for this beautiful card. Now, the Chair recognizes Mr. Palazzo to offer a motion.

Mr. PALAZZO. Thank you, Mr. Chairman. I move that the Committee favorably report H.R. 970 as amended to the House with the recommendation that the bill do pass. Furthermore, I move that staff be instructed to prepare the legislative report and make necessary technical and conforming changes and that the Chairman take all necessary steps to bring the bill before the House for consideration.

Chairman HALL. All right. The question now is on the motion to report the bill. Those in favor say aye, no opposed, those opposed say no. The ayes have it. The resolution is favorably reported. Without objection, the motion to reconsider is laid upon the table. Members may have two subsequent calendar days in which to submit supplemental, minority or additional views on the measure. I move pursuant to Clause 1 of Rule 22 of the Rules of the House of Representatives that the Committee authorize the Chairman to offer such motions as may be necessary in the House to adopt and pass H.R. 970, the *Federal Aviation Research Development Reauthorization Act of 2011* as amended. Without objection, it is so ordered.

This concludes our Full Committee markup. The Committee is adjourned.

[Whereupon, at 11:54 a.m., the Committee was adjourned.]

Appendix:

H.R. 970, Section-by-Section Analysis, Amendment Roster

AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

I

112TH CONGRESS
1ST SESSION

H. R. 970

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

IN THE HOUSE OF REPRESENTATIVES

MARCH 9, 2011

Mr. HALL (for himself and Mr. PALAZZO) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

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A BILL

To reauthorize 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; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the "Federal Aviation Research and Development Reauthorization Act of 2011".

(b) TABLE OF CONTENTS.—The table of contents for this Act is as follows:

Sec. 1. Short title; table of contents.
Sec. 2. Amendments to title 49, United States Code.
Sec. 3. Definitions.

TITLE I—AUTHORIZATIONS

Sec. 101. Authorization of appropriations.
Sec. 102. Unmanned aircraft systems.
Sec. 103. Research program on runways.
Sec. 104. Research on design for certification.
Sec. 105. Airport cooperative research program.
Sec. 106. Centers of excellence.
Sec. 107. Interagency research on aviation and the environment.
Sec. 108. Aviation fuel research and development program.
Sec. 109. Research program on alternative jet fuel technology for civil aircraft.
Sec. 110. Review of FAA's energy- and environment-related research programs.
Sec. 111. Review of FAA's aviation safety-related research programs.

SEC. 2. AMENDMENTS TO TITLE 49, UNITED STATES CODE.

Except as otherwise expressly provided, whenever in this Act an amendment or repeal is expressed in terms of an amendment to, or a repeal of, a section or other provision, the reference shall be considered to be made to a section or other provision of title 49, United States Code.

SEC. 3. DEFINITIONS.

As used in this Act, the following definition apply:

(1) ADMINISTRATOR.—The term "Administrator" means the Administrator of the Federal Aviation Administration.

(2) FAA.—The term "FAA" means the Federal Aviation Administration.

(3) INSTITUTION OF HIGHER EDUCATION.—The term "institution of higher education" has the same meaning given the term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(4) NASA.—The term ''NASA'' means the National Aeronautics and Space Administration.

(5) NATIONAL RESEARCH COUNCIL.—The term ''National Research Council'' means the National Research Council of the National Academies of Science and Engineering.

(6) NOAA.—The term ''NOAA'' means the National Oceanic and Atmospheric Administration.

(7) SECRETARY.—The term ''Secretary'' means the Secretary of Transportation.

TITLE I—AUTHORIZATIONS

SEC. 101. AUTHORIZATION OF APPROPRIATIONS.

(a) IN GENERAL.—Section 48102(a) is amended—

(1) in the matter before paragraph (1) by striking ''of this title'' and inserting ''of this title and, for each of fiscal years 2011 through 2014, under subsection (g)'';

(2) in paragraph (11)—

(A) in subparagraph (K) by inserting ''and'' at the end; and

(B) in subparagraph (L) by striking ''and'' at the end;

(3) in paragraph (12)(L) by striking ''and'' at the end;

(4) in paragraph (14) by striking the period at the end and inserting a semicolon; and

(5) by adding at the end the following:

"(15) for fiscal year 2011, $165,020,000; and

"(16) for each of the fiscal years 2012 through 2014, $146,827,000.".

(b) SPECIFIC PROGRAM LIMITATIONS.—Section 48102 is amended by inserting after subsection (f) the following:

"(g) SPECIFIC AUTHORIZATIONS.—The following programs described in the research, engineering, and development account of the national aviation research plan required under section 44501(c) are authorized:

"(1) Fire Research and Safety.

"(2) Propulsion and Fuel Systems.

"(3) Advanced Materials/Structural Safety.

"(4) Atmospheric Hazards—Aircraft Icing/Digital System Safety.

"(5) Continued Airworthiness.

"(6) Aircraft Catastrophic Failure Prevention Research.

"(7) Flightdeck/Maintenance/System Integration Human Factors.

"(8) System Safety Management.

"(9) Air Traffic Control/Technical Operations Human Factors.

"(10) Aeromedical Research.

"(11) Weather Program.

"(12) Unmanned Aircraft Systems Research.

"(13) NextGen—Alternative Fuels for General Aviation.

"(14) Joint Planning and Development Office.

"(15) NextGen—Wake Turbulence research.

"(16) NextGen—Air Ground Integration Human Factors.

"(17) NextGen—Self Separation Human Factors.

"(18) NextGen—Weather Technology in the Cockpit.

"(19) Environment and Energy Research.

"(20) NextGen Environmental Research—Aircraft Technologies, Fuels, and Metrics.

"(21) System Planning and Resource Management.

"(22) The William J. Hughes Technical Center Laboratory Facility.".

(c) PROGRAM AUTHORIZATIONS.—From the other accounts described in the national aviation research plan required under section 44501(c) of title 49, United States

Code, for each of the fiscal years 2011 through 2014, the following research and development activities are authorized:

(1) Runway Incursion Reduction.

(2) Systems Capacity, Planning and Improvement.

(3) Operations Concept Validation.

(4) NAS Weather Requirements.

(5) Airspace Management Program.

(6) NextGen—Air Traffic Control/Technical Operations Human Factors.

(7) NextGen—Environment and Energy—Environmental Management System and Advanced Noise and Emissions reduction.

(8) NextGen—New Air Traffic Management Requirements.

(9) NextGen—Operations Concept Validation—Validation Modeling.

(10) NextGen—System Safety Management Transformation.

(11) NextGen—Wake Turbulence—Recategorization.

(12) NextGen—Operational Assessments.

(13) NextGen—Staffed NextGen Towers.

(14) Center for Advanced Aviation System Development.

(15) Airports Technology Research Program—Capacity.

(16) Airports Technology Research Program—Safety.

(17) Airports Technology Research Program—Environment.

(18) Airport Cooperative Research—Capacity.

(19) Airport Cooperative Research—Environment.

(20) Airport Cooperative Research—Safety.

SEC. 102. UNMANNED AIRCRAFT SYSTEMS.

(a) RESEARCH INITIATIVE.—Section 44504(b) is amended—

(1) in paragraph (6) by striking ''and'' after the semicolon;

(2) in paragraph (7) by striking the period at the end and inserting ''; and''; and

(3) by adding at the end the following:

''(8) in conjunction with other Federal agencies, as appropriate, to develop technologies and methods to assess the risk of and prevent defects, failures, and malfunctions of products, parts, and processes, for use in all classes of unmanned aircraft systems

that could result in a catastrophic failure of the unmanned aircraft that would endanger other aircraft in the national airspace system.''.

(b) SYSTEMS, PROCEDURES, FACILITIES, AND DEVICES.—Section 44505(b) is amended—

(1) in paragraph (4) by striking ''and'' after the semicolon;

(2) in paragraph (5)(C) by striking the period at the end and inserting a semicolon; and

(3) by adding at the end the following:

''(6) to develop a better understanding of the relationship between human factors and unmanned aircraft system safety; and

''(7) to develop dynamic simulation models for integrating all classes of unmanned aircraft systems into the national airspace system without any degradation of existing levels of safety for all national airspace system users.''.

SEC. 103. RESEARCH PROGRAM ON RUNWAYS.

Section 44505(c) is amended—

(1) by redesignating paragraphs (3) through (6) as paragraphs (5) through (8); and

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

''(3) improved runway surfaces;

"(4) engineered material restraining systems for runways at both general aviation airports and airports with commercial air carrier operations;".

SEC. 104. RESEARCH ON DESIGN FOR CERTIFICATION.

Section 44505 is amended—

(1) by redesignating subsection (d) as subsection (e); and

(2) by inserting after subsection (c) the following:

"(d) RESEARCH ON DESIGN FOR CERTIFICATION.—

"(1) RESEARCH.—Not later than 1 year after the date of enactment of the Federal Aviation Research and Development Reauthorization Act of 2011, the Administrator shall conduct research on methods and procedures to improve both confidence in and the timeliness of certification of new technologies for their introduction into the national airspace system.

"(2) RESEARCH PLAN.—Not later than 6 months after the date of enactment of the Federal Aviation Research and Development Reauthorization Act of 2011, the Administrator shall develop a plan for the research under subsection (a) that contains the objectives, proposed tasks, milestones, and 5-year budgetary profile.

"(3) REVIEW.—The Administrator shall enter into an arrangement with the National Research Council to conduct an independent review of the plan developed under subsection (b) and shall provide the results of that review to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than 18 months after the date of enactment of the Federal Aviation Research and Development Reauthorization Act of 2011.".

SEC. 105. AIRPORT COOPERATIVE RESEARCH PROGRAM.

Section 44511(f) is amended—

(1) in paragraph (1) by striking "establish a 4-year pilot" and inserting "maintain an"; and

(2) in paragraph (4)—

(A) by striking "Not later than 6 months after the expiration of the program under this subsection," and inserting "Not later than September 30, 2012,"; and

(B) by striking "program, including recommendations as to the need for establishing a permanent airport cooperative research program" and inserting "program".

SEC. 106. CENTERS OF EXCELLENCE.

(a) GOVERNMENT'S SHARE OF COSTS.—Section 44513(f) is amended to read as follows:

''(f) GOVERNMENT'S SHARE OF COSTS.—The United States Government's share of establishing and operating the 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 any 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.''.

(b) ANNUAL REPORT.—Section 44513 is amended by adding at the end the following:

''(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 of Excellence in the preceding year;

''(2) the amount of funding for each research project and the funding source;

"(3) the institutions participating in each project and their shares of the overall funding for each research project; and

"(4) the level of cost-sharing for each research project.".

SEC. 107. INTERAGENCY RESEARCH ON AVIATION AND THE ENVIRONMENT.

(a) IN GENERAL.—The Administrator, in coordination with NASA and after consultation with other relevant agencies, may maintain a research program to assess the potential effect of aviation on the environment and, if warranted, to evaluate approaches to address any such effect.

(b) RESEARCH PLAN.—

(1) IN GENERAL.—The Administrator, in coordination with NASA and after consultation with other relevant agencies, shall jointly develop a plan to carry out the research under subsection (a).

(2) CONTENTS.—Such plan shall contain an inventory of current interagency research being undertaken in this area, future research objectives, proposed tasks, milestones, and a 5-year budgetary profile.

(3) REQUIREMENTS.—Such plan—

(A) shall be completed not later than 1 year after the date of enactment of this Act;

(B) shall be submitted to Congress for review; and

(C) shall be updated, as appropriate, every 3 years after the initial submission.

SEC. 108. AVIATION FUEL RESEARCH AND DEVELOPMENT PROGRAM.

(a) IN GENERAL.—Using amounts made available under section 48102(a) of title 49, United States Code, the Administrator, in coordination with the NASA Administrator, shall continue research and development activities into the qualification of an unleaded aviation fuel and safe transition to this fuel for the fleet of piston engine aircraft.

(b) REQUIREMENTS.—In carrying out the program under subsection (a), the Administrator shall, at a minimum—

(1) not later than 120 days after the date of enactment of this Act, develop a research and development plan containing the specific research and development objectives, including consideration of aviation safety, technical feasibility, and other relevant factors, and the anticipated timetable for achieving the objectives;

(2) assess the methods and processes by which the FAA and industry may expeditiously certify and

1 approve new aircraft and recertify existing aircraft
2 with respect to unleaded aviation fuel;
3 (3) assess technologies that modify existing pis-
4 ton engine aircraft to enable safe operation of the
5 aircraft using unleaded aviation fuel and determine
6 the resources necessary to certify those technologies;
7 and
8 (4) develop recommendations for appropriate
9 policies and guidelines to facilitate a transition to
10 unleaded aviation fuel for piston engine aircraft.
11 (c) COLLABORATIONS.—In carrying out the program
12 under subsection (a), the Administrator shall collaborate
13 with—
14 (1) industry groups representing aviation con-
15 sumers, manufacturers, and fuel producers and dis-
16 tributors; and
17 (2) other appropriate Federal agencies.
18 (d) REPORT.—Not later than 270 days after the date
19 of enactment of this Act, the Administrator shall provide
20 a report to the Committee on Science, Space, and Tech-
21 nology of the House of Representatives and the Committee
22 on Commerce, Science, and Transportation of the Senate
23 on the plan, information obtained, and policies and guide-
24 lines developed pursuant to subsection (b).

SEC. 109. RESEARCH PROGRAM ON ALTERNATIVE JET FUEL TECHNOLOGY FOR CIVIL AIRCRAFT.

(a) RESEARCH PROGRAM.—Using amounts made available under section 48102(a) of title 49, United States Code, the Secretary shall conduct a research program related to developing and certifying jet fuel from alternative sources (such as coal, natural gas, biomass, ethanol, butanol, and hydrogen) through grants or other measures authorized under section 106(l)(6) of such title, including reimbursable agreements with other Federal agencies.

(b) PARTICIPATION BY STAKEHOLDERS.—In conducting the program, the Secretary shall provide for participation by educational and research institutions and by industry partners that have existing facilities and experience in the research and development of technology for alternative jet fuels.

(c) COLLABORATIONS.—In conducting the program, the Secretary may collaborate with existing interagency programs—

(1) to further the research and development of alternative jet fuel technology for civil aircraft, including feasibility studies; and

(2) to exchange information with the participants in the Commercial Aviation Alternative Fuels Initiative.

SEC. 110. REVIEW OF FAA'S ENERGY- AND ENVIRONMENT-RELATED RESEARCH PROGRAMS.

(a) REVIEW.—The Administrator shall enter into an arrangement with the National Research Council for a review of FAA energy-related and environment-related research programs. The review shall assess whether—

(1) the programs have well-defined, prioritized, and appropriate research objectives;

(2) the programs are properly coordinated with the energy- and environment-related research programs at NASA, NOAA, and other relevant agencies;

(3) the programs have allocated appropriate resources to each of the research objectives; and

(4) there exist suitable mechanisms for transitioning the research results into FAA's operational technologies and procedures and certification activities.

(b) REPORT.—A report containing the results of such review shall be provided to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than 18 months after the date of enactment of this Act.

SEC. 111. REVIEW OF FAA'S AVIATION SAFETY-RELATED RESEARCH PROGRAMS.

(a) REVIEW.—The Administrator shall enter into an arrangement with the National Research Council for an independent review of the FAA's aviation safety-related research programs. The review shall assess whether—

(1) the programs have well-defined, prioritized, and appropriate research objectives;

(2) the programs are properly coordinated with the safety research programs of NASA and other relevant Federal agencies;

(3) the programs have allocated appropriate resources to each of the research objectives; and

(4) there exist suitable mechanisms for transitioning the research results from the programs into the FAA's operational technologies and procedures and certification activities in a timely manner.

(b) AVIATION SAFETY-RELATED RESEARCH PROGRAMS TO BE ASSESSED.—The FAA aviation safety-related research programs to be assessed under the review shall include, at a minimum, the following:

(1) Air traffic control/technical operations human factors.

(2) Runway incursion reduction.

(3) Flightdeck/maintenance system integration human factors.

(4) Airports technology research—safety.

(5) Airport Cooperative Research Program—safety.

(6) Weather Program.

(7) Atmospheric hazards/digital system safety.

(8) Fire research and safety.

(9) Propulsion and fuel systems.

(10) Advanced materials/structural safety.

(11) Aging aircraft.

(12) Aircraft catastrophic failure prevention research.

(13) Aeromedical research.

(14) Aviation safety risk analysis.

(15) Unmanned aircraft systems research.

(c) REPORT.—Not later than 14 months after the date of enactment of this Act, the Administrator shall submit to Congress a report on the results of such review.

○

SECTION-BY-SECTION ANALYSIS OF
H.R. 970, THE FEDERAL AVIATION RESEARCH AND
DEVELOPMENT REAUTHORIZATION ACT OF 2011

Sec. 1. Short Title; Table of Contents

"Federal Aviation Research and Development Reauthorization Act of 2011".

Sec. 2. Amendments to Title 49, United States Code

Stipulates that all references to amending or repealing a provision, the reference shall be considered to be made to title 49, United States Code.

Sec. 3. Definitions

Defines terms used in the bill.

TITLE I—AUTHORIZATIONS

Sec. 101. Authorization of Appropriations

Amends existing law and authorizes $165,020,000 for FY2011; and $146,827,000 for each of the fiscal years 2012, 2013, and 2014. The section also authorizes all programs included in the National Aviation Research Plan.

Sec. 102. Unmanned Aircraft Systems

Requires FAA to conduct research on technologies and methods to assess the risk of, and prevent the failure of, products, parts and processes used in any unmanned aircraft systems that operates in the national airspace system. Also requires human factors research on operating unmanned aircraft systems, and development of simulation models that realistically emulate the national airspace system for research on operating a UAS with general aviation and commercial aircraft.

Sec. 103. Research Program on Runways

Authorizes the FAA to maintain a program of research and technology related to improved runway surfaces and engineered material restraining systems for runways at both general aviation airports and airports with commercial air carriers.

Sec. 104. Research on Design for Certification

Requires the FAA to conduct research on methods to improve the timeliness of certification for new national airspace system technologies. Within 6 months following the date of enactment, requires the development of a research plan that contains the research objectives, proposed tasks, milestones, and a 5-year budgetary profile. Directs the FAA to engage the National Research Council for an independent review of the plan, and to provide their results to the House and Senate committees of jurisdiction.

Sec. 105. Airport Cooperative Research Program

Amends existing law to extend the program.

Sec. 106. Centers of Excellence

Amends existing law, stating that the U.S. Government's share of establishing and operating a center and associated research activities shall not exceed 50 percent and further provides that only if the Administrator determines that without additional funds the center would be unable to carry out the authorized activities such share may be increased to a maximum of 75 percent. Requires an annual report to Congress that lists the research projects carried out by each Center of Excellence, amounts and sources of funding, and the institutions participating in each project.

Sec. 107. Interagency Research on Aviation and the Environment

Permits the FAA, in coordination with NASA, to continue in its discretion a research program to assess the effect of aviation on the environment, and if warranted, to evaluate approaches to mitigate it. Requires a research plan and stipulates that the plan include an inventory of current interagency research being conducted in this area, future research objectives, proposed tasks, milestones, and a five year budget profile. The plan is to be delivered to Congress within 1 year after enactment.

Sec. 108. Aviation Fuel Research and Development Program

Requires the FAA, in conjunction with NASA, to continue research and development activities to qualify an unleaded aviation fuel for piston engine aircraft, and to safely transition this technology. Not later than 120 days following enactment, FAA is to develop a research plan including objectives, timetable, and recommended policies and guidelines needed to facilitate a transition to unleaded fuel. Directs the FAA to work with aviation consumers, fuel producers, and industry. Requires FAA to report to Congress within 270 days of enactment on the plan and recommended policies and guidelines.

Sec. 109. Research Program on Alternative Jet Fuel Technology for Civil Aircraft

Requires the Secretary of Transportation to conduct research related to developing and certifying jet fuel from alternative sources (such as coal, natural gas, biomass, ethanol, butanol, and hydrogen) through grants or other arrangements, including reimbursable agreements with other government agencies. Directs the Secretary to provide for participation by educational and research institutions.

Sec. 110. Review of FAA's Energy- and Environment-Related Research Programs

Requires the Administrator to engage the National Research Council to conduct a review of the FAA's energy- and environment-related research programs, and to provide the Congress with a report on the review within 18 months of enactment.

Sec. 111. Review of FAA's Aviation Safety-Related Research Programs

Same as Sec. 110, but directing the National Research Council to review all FAA aviation-safety related research programs. The NRC's report is due within 14 months of enactment.

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
Full Committee Markup
March 17, 2011

AMENDMENT ROSTER

H. R. 970, the "Federal Aviation Research and Development Reauthorization Act of 2011"

No.	Amendment	Summary	Results
1	Mr. Hall (ANS) (342)	Makes technical changes to the bill providing for incorporation of text into larger legislative vehicle.	Agreed to by voice vote
2	Mr. Miller (346)	Increases the funding in FY 2011 by $601,000 and in each of fiscal years 2012-2014 by $1.026 million. Sets the level of funding for research on Atmospheric Hazards-Aircraft Icing/Digital Safety Systems at $4.482 million for each fiscal year 2011-2014	Defeated by roll call vote 13Yeas and 16Nays
3	Mr. McNerney (347)	Increases the funding in FY 2011 by $1.043 million and in each of fiscal years 2012-2014 by $1.788 million. Sets the level of funding for fire research and safety at $7.799 million for each fiscal year 2011-2014	Defeated by roll call vote 11Yeas and 17Nays.
4	Mr. Costello (004)	Allows the Administrator to set up a Center of Excellence to perform research and development on issues related to aviation human resources	Agreed to by voice vote
5	Ms. Edwards (348)	Increases the overall funding in FY 2011 by $955,000 and in each of fiscal years 2012-2014 by $1.632 million. Sets the level of funding for research on Flightdeck/ Maintenance/System Integration Human Factors at $7.128 million for each fiscal year 2011-2014	Defeated by roll call vote 13 Yeas and 17Nays
6	Mr. Palazzo (003)	Amends Section 1003 to state that if the other accounts described in the National Aviation Research Plan are authorized then these activities are authorized.	Agreed to by voice vote
7	Dr. Broun (345)	Amends Sections 1009, 1012 and 1013 to ensure the funding comes from the authorized amounts in the bill. Amends Section 1012 and 1013 to require the FAA Administrator to perform an assessment of activities rather than the National Research Council.	Agreed to by voice vote
8	Mr. Miller (003)	Amends Sec. 1013 to require the assessment to include a determination about whether a survey of participants across the air transportation system is an appropriate way to study safety risks	Agreed to by voice vote

AMENDMENT IN THE NATURE OF A SUBSTITUTE

TO H.R. 970

OFFERED BY MR. HALL OF TEXAS

Strike all after the enacting clause and insert the following:

SECTION 1. AMENDMENTS TO TITLE 49, UNITED STATES CODE.

Except as otherwise expressly provided, whenever in this Act an amendment or repeal is expressed in terms of an amendment to, or a repeal of, a section or other provision, the reference shall be considered to be made to a section or other provision of title 49, United States Code.

TITLE X—FEDERAL AVIATION RESEARCH AND DEVELOPMENT REAUTHORIZATION ACT OF 2011

SEC. 1001. SHORT TITLE.

This title may be cited as the ''Federal Aviation Research and Development Reauthorization Act of 2011''.

SEC. 1002. DEFINITIONS.

In this title, the following definitions apply:

(1) ADMINISTRATOR.—The term ''Administrator'' means the Administrator of the Federal Aviation Administration.

(2) FAA.—The term ''FAA'' means the Federal Aviation Administration.

(3) INSTITUTION OF HIGHER EDUCATION.—The term ''institution of higher education'' has the same meaning given the term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(4) NASA.—The term ''NASA'' means the National Aeronautics and Space Administration.

(5) NATIONAL RESEARCH COUNCIL.—The term ''National Research Council'' means the National Research Council of the National Academies of Science and Engineering.

(6) NOAA.—The term ''NOAA'' means the National Oceanic and Atmospheric Administration.

(7) SECRETARY.—The term ''Secretary'' means the Secretary of Transportation.

SEC. 1003. AUTHORIZATION OF APPROPRIATIONS.

(a) IN GENERAL.—Section 48102(a) is amended—

(1) in the matter before paragraph (1) by striking ''of this title'' and inserting ''of this title and, for each of fiscal years 2011 through 2014, under subsection (g)'';

(2) in paragraph (11)—

(A) in subparagraph (K) by inserting "and" at the end; and

(B) in subparagraph (L) by striking "and" at the end;

(3) in paragraph (13) by striking "and" at the end;

(4) in paragraph (14) by striking the period at the end and inserting a semicolon; and

(5) by adding at the end the following:

"(15) for fiscal year 2011, $165,020,000; and

"(16) for each of the fiscal years 2012 through 2014, $146,827,000.".

(b) SPECIFIC PROGRAM LIMITATIONS.—Section 48102 is amended by inserting after subsection (f) the following:

"(g) SPECIFIC AUTHORIZATIONS.—The following programs described in the research, engineering, and development account of the national aviation research plan required under section 44501(c) are authorized:

"(1) Fire Research and Safety.

"(2) Propulsion and Fuel Systems.

"(3) Advanced Materials/Structural Safety.

"(4) Atmospheric Hazards—Aircraft Icing/Digital System Safety.

1 "(5) Continued Airworthiness.

2 "(6) Aircraft Catastrophic Failure Prevention
3 Research.

4 "(7) Flightdeck/Maintenance/System Integra-
5 tion Human Factors.

6 "(8) System Safety Management.

7 "(9) Air Traffic Control/Technical Operations
8 Human Factors.

9 "(10) Aeromedical Research.

10 "(11) Weather Program.

11 "(12) Unmanned Aircraft Systems Research.

12 "(13) NextGen—Alternative Fuels for General
13 Aviation.

14 "(14) Joint Planning and Development Office.

15 "(15) NextGen—Wake Turbulence Research.

16 "(16) NextGen—Air Ground Integration
17 Human Factors.

18 "(17) NextGen—Self Separation Human Fac-
19 tors.

20 "(18) NextGen—Weather Technology in the
21 Cockpit.

22 "(19) Environment and Energy Research.

23 "(20) NextGen Environmental Research—Air-
24 craft Technologies, Fuels, and Metrics.

"(21) System Planning and Resource Management.

"(22) The William J. Hughes Technical Center Laboratory Facility.".

(c) PROGRAM AUTHORIZATIONS.—From the other accounts described in the national aviation research plan required under section 44501(c) of title 49, United States Code, for each of the fiscal years 2011 through 2014, the following research and development activities are authorized:

(1) Runway Incursion Reduction.

(2) System Capacity, Planning, and Improvement.

(3) Operations Concept Validation.

(4) NAS Weather Requirements.

(5) Airspace Management Program.

(6) NextGen—Air Traffic Control/Technical Operations Human Factors.

(7) NextGen—Environment and Energy—Environmental Management System and Advanced Noise and Emissions reduction.

(8) NextGen—New Air Traffic Management Requirements.

(9) NextGen—Operations Concept Validation—Validation Modeling.

(10) NextGen—System Safety Management Transformation.

(11) NextGen—Wake Turbulence—Recategorization.

(12) NextGen—Operational Assessments.

(13) NextGen—Staffed NextGen Towers.

(14) Center for Advanced Aviation System Development.

(15) Airports Technology Research Program—Capacity.

(16) Airports Technology Research Program—Safety.

(17) Airports Technology Research Program—Environment.

(18) Airport Cooperative Research—Capacity.

(19) Airport Cooperative Research—Environment.

(20) Airport Cooperative Research—Safety.

SEC. 1004. UNMANNED AIRCRAFT SYSTEMS.

(a) RESEARCH INITIATIVE.—Section 44504(b) is amended—

(1) in paragraph (6) by striking ''and'' after the semicolon;

(2) in paragraph (7) by striking the period at the end and inserting ''; and''; and

(3) by adding at the end the following:

"(8) in conjunction with other Federal agencies, as appropriate, to develop technologies and methods to assess the risk of and prevent defects, failures, and malfunctions of products, parts, and processes for use in all classes of unmanned aircraft systems that could result in a catastrophic failure of the unmanned aircraft that would endanger other aircraft in the national airspace system.".

(b) SYSTEMS, PROCEDURES, FACILITIES, AND DEVICES.—Section 44505(b) is amended—

(1) in paragraph (4) by striking "and" after the semicolon;

(2) in paragraph (5)(C) by striking the period at the end and inserting a semicolon; and

(3) by adding at the end the following:

"(6) to develop a better understanding of the relationship between human factors and unmanned aircraft system safety; and

"(7) to develop dynamic simulation models for integrating all classes of unmanned aircraft systems into the national airspace system without any degradation of existing levels of safety for all national airspace system users.".

SEC. 1005. RESEARCH PROGRAM ON RUNWAYS.

Section 44505(c) is amended—

(1) by redesignating paragraphs (3) through (6) as paragraphs (5) through (8); and

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

''(3) improved runway surfaces;

''(4) engineered material restraining systems for runways at both general aviation airports and airports with commercial air carrier operations;''.

SEC. 1006. RESEARCH ON DESIGN FOR CERTIFICATION.

Section 44505 is amended—

(1) by redesignating subsection (d) as subsection (e); and

(2) by inserting after subsection (c) the following:

''(d) RESEARCH ON DESIGN FOR CERTIFICATION.—

''(1) RESEARCH.—Not later than 1 year after the date of enactment of the Federal Aviation Research and Development Reauthorization Act of 2011, the Administrator shall conduct research on methods and procedures to improve both confidence in and the timeliness of certification of new technologies for their introduction into the national airspace system.

"(2) RESEARCH PLAN.—Not later than 6 months after the date of enactment of the Federal Aviation Research and Development Reauthorization Act of 2011, the Administrator shall develop a plan for the research under paragraph (1) that contains the objectives, proposed tasks, milestones, and 5-year budgetary profile.

"(3) REVIEW.—The Administrator shall enter into an arrangement with the National Research Council to conduct an independent review of the plan developed under paragraph (2) and shall provide the results of that review to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than 18 months after the date of enactment of the Federal Aviation Research and Development Reauthorization Act of 2011.".

SEC. 1007. AIRPORT COOPERATIVE RESEARCH PROGRAM.

Section 44511(f) is amended—

(1) in paragraph (1) by striking "establish a 4-year pilot" and inserting "maintain an"; and

(2) in paragraph (4)—

(A) by striking "Not later than 6 months after the expiration of the program under this

1 subsection,'' and inserting ''Not later than Sep-
2 tember 30, 2012,''; and
3 (B) by striking ''program, including rec-
4 ommendations as to the need for establishing a
5 permanent airport cooperative research pro-
6 gram'' and inserting ''program''.

7 **SEC. 1008. CENTERS OF EXCELLENCE.**

8 (a) GOVERNMENT'S SHARE OF COSTS.—Section
9 44513(f) is amended to read as follows:
10 ''(f) GOVERNMENT'S SHARE OF COSTS.—The United
11 States Government's share of establishing and operating
12 a center and all related research activities that grant re-
13 cipients carry out shall not exceed 50 percent of the costs,
14 except that the Administrator may increase such share to
15 a maximum of 75 percent of the costs for any fiscal year
16 if the Administrator determines that a center would be
17 unable to carry out the authorized activities described in
18 this section without additional funds.''.
19 (b) ANNUAL REPORT.—Section 44513 is amended by
20 adding at the end the following:
21 ''(h) ANNUAL REPORT.—The Administrator shall
22 transmit annually to the Committee on Science, Space,
23 and Technology of the House of Representatives and the
24 Committee on Commerce, Science, and Transportation of

1 the Senate at the time of the President's budget request
2 a report that lists—
3 "(1) the research projects that have been initi-
4 ated by each center in the preceding year;
5 "(2) the amount of funding for each research
6 project and the funding source;
7 "(3) the institutions participating in each
8 project and their shares of the overall funding for
9 each research project; and
10 "(4) the level of cost-sharing for each research
11 project.".

12 **SEC. 1009. INTERAGENCY RESEARCH ON AVIATION AND**
13 **THE ENVIRONMENT.**

14 (a) IN GENERAL.—The Administrator, in coordina-
15 tion with NASA and after consultation with other relevant
16 agencies, may maintain a research program to assess the
17 potential effect of aviation on the environment and, if war-
18 ranted, to evaluate approaches to address any such effect.
19 (b) RESEARCH PLAN.—
20 (1) IN GENERAL.—The Administrator, in co-
21 ordination with NASA and after consultation with
22 other relevant agencies, shall jointly develop a plan
23 to carry out the research under subsection (a).
24 (2) CONTENTS.—Such plan shall contain an in-
25 ventory of current interagency research being under-

taken in this area, future research objectives, proposed tasks, milestones, and a 5-year budgetary profile.

(3) REQUIREMENTS.—Such plan—

(A) shall be completed not later than 1 year after the date of enactment of this Act;

(B) shall be submitted to Congress for review; and

(C) shall be updated, as appropriate, every 3 years after the initial submission.

SEC. 1010. AVIATION FUEL RESEARCH AND DEVELOPMENT PROGRAM.

(a) IN GENERAL.—Using amounts made available under section 48102(a) of title 49, United States Code, the Administrator, in coordination with the NASA Administrator, shall continue research and development activities into the qualification of an unleaded aviation fuel and safe transition to this fuel for the fleet of piston engine aircraft.

(b) REQUIREMENTS.—In carrying out the program under subsection (a), the Administrator shall, at a minimum—

(1) not later than 120 days after the date of enactment of this Act, develop a research and development plan containing the specific research and de-

1 velopment objectives, including consideration of avia-
2 tion safety, technical feasibility, and other relevant
3 factors, and the anticipated timetable for achieving
4 the objectives;
5 (2) assess the methods and processes by which
6 the FAA and industry may expeditiously certify and
7 approve new aircraft and recertify existing aircraft
8 with respect to unleaded aviation fuel;
9 (3) assess technologies that modify existing pis-
10 ton engine aircraft to enable safe operation of the
11 aircraft using unleaded aviation fuel and determine
12 the resources necessary to certify those technologies;
13 and
14 (4) develop recommendations for appropriate
15 policies and guidelines to facilitate a transition to
16 unleaded aviation fuel for piston engine aircraft.
17 (c) COLLABORATIONS.—In carrying out the program
18 under subsection (a), the Administrator shall collaborate
19 with—
20 (1) industry groups representing aviation con-
21 sumers, manufacturers, and fuel producers and dis-
22 tributors; and
23 (2) other appropriate Federal agencies.
24 (d) REPORT.—Not later than 270 days after the date
25 of enactment of this Act, the Administrator shall provide

1 a report to the Committee on Science, Space, and Tech-
2 nology of the House of Representatives and the Committee
3 on Commerce, Science, and Transportation of the Senate
4 on the plan, information obtained, and policies and guide-
5 lines developed pursuant to subsection (b).

6 **SEC. 1011. RESEARCH PROGRAM ON ALTERNATIVE JET**
7 **FUEL TECHNOLOGY FOR CIVIL AIRCRAFT.**

8 (a) RESEARCH PROGRAM.—Using amounts made
9 available under section 48102(a) of title 49, United States
10 Code, the Secretary shall conduct a research program re-
11 lated to developing and certifying jet fuel from alternative
12 sources (such as coal, natural gas, biomass, ethanol, buta-
13 nol, and hydrogen) through grants or other measures au-
14 thorized under section 106(l)(6) of such title, including re-
15 imbursable agreements with other Federal agencies.

16 (b) PARTICIPATION BY STAKEHOLDERS.—In con-
17 ducting the program, the Secretary shall provide for par-
18 ticipation by educational and research institutions and by
19 industry partners that have existing facilities and experi-
20 ence in the research and development of technology for
21 alternative jet fuels.

22 (c) COLLABORATIONS.—In conducting the program,
23 the Secretary may collaborate with existing interagency
24 programs—

(1) to further the research and development of alternative jet fuel technology for civil aircraft, including feasibility studies; and

(2) to exchange information with the participants in the Commercial Aviation Alternative Fuels Initiative.

SEC. 1012. REVIEW OF FAA'S ENERGY- AND ENVIRONMENT-RELATED RESEARCH PROGRAMS.

(a) REVIEW.—The Administrator shall enter into an arrangement with the National Research Council for a review of FAA energy-related and environment-related research programs. The review shall assess whether—

(1) the programs have well-defined, prioritized, and appropriate research objectives;

(2) the programs are properly coordinated with the energy- and environment-related research programs at NASA, NOAA, and other relevant agencies;

(3) the programs have allocated appropriate resources to each of the research objectives; and

(4) there exist suitable mechanisms for transitioning the research results into FAA's operational technologies and procedures and certification activities.

1 (b) REPORT.—A report containing the results of such
2 review shall be provided to the Committee on Science,
3 Space, and Technology of the House of Representatives
4 and the Committee on Commerce, Science, and Transpor-
5 tation of the Senate not later than 18 months after the
6 date of enactment of this Act.

7 **SEC. 1013. REVIEW OF FAA'S AVIATION SAFETY-RELATED**
8 **RESEARCH PROGRAMS.**

9 (a) REVIEW.—The Administrator shall enter into an
10 arrangement with the National Research Council for an
11 independent review of the FAA's aviation safety-related
12 research programs. The review shall assess whether—
13 (1) the programs have well-defined, prioritized,
14 and appropriate research objectives;
15 (2) the programs are properly coordinated with
16 the safety research programs of NASA and other
17 relevant Federal agencies;
18 (3) the programs have allocated appropriate re-
19 sources to each of the research objectives; and
20 (4) there exist suitable mechanisms for
21 transitioning the research results from the programs
22 into the FAA's operational technologies and proce-
23 dures and certification activities in a timely manner.
24 (b) AVIATION SAFETY-RELATED RESEARCH PRO-
25 GRAMS TO BE ASSESSED.—The FAA aviation safety-re-

1 lated research programs to be assessed under the review
2 shall include, at a minimum, the following:
3 (1) Air traffic control/technical operations
4 human factors.
5 (2) Runway incursion reduction.
6 (3) Flightdeck/maintenance system integration
7 human factors.
8 (4) Airports technology research—safety.
9 (5) Airport Cooperative Research Program—
10 safety.
11 (6) Weather Program.
12 (7) Atmospheric hazards/digital system safety.
13 (8) Fire research and safety.
14 (9) Propulsion and fuel systems.
15 (10) Advanced materials/structural safety.
16 (11) Aging aircraft.
17 (12) Aircraft catastrophic failure prevention re-
18 search.
19 (13) Aeromedical research.
20 (14) Aviation safety risk analysis.
21 (15) Unmanned aircraft systems research.
22 (c) REPORT.—Not later than 14 months after the
23 date of enactment of this Act, the Administrator shall sub-
24 mit to Congress a report on the results of such review.

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AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE TO H.R. 970

OFFERED BY Mr. Miller

Page 3, line 11, increase the dollar amount by $601,000.

Page 3, line 13, increase the dollar amount by $1,026,000.

Page 3, line 25, strike the period and insert ", for each of fiscal years 2011 through 2014, $4,482,000."

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AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE TO H.R. 970

OFFERED BY Mr. McNerney

Page 3, line 11, increase the dollar amount by $1,043,000.

Page 3, line 13, increase the dollar amount by $1,788,000.

Page 3, line 21, strike the period and insert ", for each of fiscal years 2011 through 2014, $7,799,000."

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AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE TO H.R. 970 OFFERED BY MR. COSTELLO OF ILLINOIS

Page 11, after line 11, insert the following (and redesignate subsequent sections accordingly):

1 **SEC. 1009. CENTER OF EXCELLENCE FOR AVIATION HUMAN**
2 **RESOURCE RESEARCH.**
3 (a) ESTABLISHMENT.—Using amounts made avail-
4 able under section 48102(a) of title 49, United States
5 Code, the Administrator may establish a center of excel-
6 lence to conduct research on—
7 (1) human performance in the air transpor-
8 tation environment, including among air transpor-
9 tation personnel such as air traffic controllers, pi-
10 lots, and technicians; and
11 (2) any other aviation human resource issues
12 pertinent to developing and maintaining a safe and
13 efficient air transportation system.
14 (b) ACTIVITIES.—Activities conducted under this sec-
15 tion may include the following:
16 (1) Research, development, and evaluation of
17 training programs for air traffic controllers, aviation

safety inspectors, airway transportation safety specialists, and engineers.

(2) Research and development of best practices for recruitment 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 powerplant 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.

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AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE TO H.R. 970

OFFERED BY MS. Edwards

Page 3, line 11, increase the dollar amount by $955,000.

Page 3, line 13, increase the dollar amount by $1,632,000.

Page 4, line 5, strike the period and insert ", for each of fiscal years 2011 through 2014, $7,128,000."

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AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE TO H.R. 970 OFFERED BY MR. PALAZZO OF MISSISSIPPI

Page 5, line 5, strike "From" and insert "If".

Page 5, line 8, strike "for each" and insert "are authorized for each".

☒

AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE TO H.R. 970

OFFERED BY MR. Brown

Page 11, line 14, strike "The Administrator" and insert "Using amounts made available under section 48102(a) of title 49, United States Code, the Administrator".

Page 15, line 9, strike "The Administrator" and all that follows through "Council for" and insert "Using amounts made available under section 48102(a) of title 49, United States Code, the Administrator shall conduct".

Page 16, line 9, strike "The Administrator" and all that follows through "for an independent" and insert "Using amounts made available under section 48102(a) of title 49, United States Code, the Administrator shall conduct a".

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AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE TO H.R. 970 OFFERED BY MR. MILLER OF NORTH CAROLINA

Page 16, line 19, strike "and".

Page 16, after line 19, insert the following:

1 (4) the programs should include a determina-
2 tion about whether a survey of participants across
3 the air transportation system is an appropriate way
4 to study safety risks within such system; and

Page 16, line 20, strike "(4)" and insert "(5)".