

House Science, Space, and Technology Committee

Chairman Frank Lucas

FAA Research and Development Act of 2023

Section-by-Section

Section 1. Short Title; Table of Contents

This section establishes a table of contents for the bill and establishes the short title of the bill as the “FAA Research and Development Act of 2023.”

Section 2. Definitions.

This section provides the meaning of terms used throughout the legislative text.

Section 3. Authorization of Appropriations.

This section lists the funds authorized to be appropriated to the Federal Aviation Administration to carry out FAA research and development activities from 2024-2028.

Title I – FAA RESEARCH AND DEVELOPMENT ORGANIZATION

Section 101. Report on Implementation; Funding for Safety Research and Development.

This section directs the Comptroller General of the United States to submit a report to determine whether at least 70 percent of such funding amounts appropriated supports safety research and development projects.

Title II – FAA RESEARCH AND DEVELOPMENT ACTIVITIES

Section 201. Aviation Fuel Research, Development, and Usage.

This section authorizes the Administrator of the FAA to continue to conduct R&D and service testing activities by developing a roadmap and partnering with industry on accelerating the development, testing, and certification of safe and lead-free fuel for general aviation aircraft. It also authorizes the Administrator to consider the feasibility of widespread use of lead-free fuel by not later than 2028.

Section 202. Continuous Lower Energy, Emission, and Noise (CLEEN)

This section authorizes the Administrator to expand the Continuous, Lower Energy, Emission, and Noise (CLEEN) program and broadens eligibility to allow new entrants to the aviation system.

Section 203. Strategy on Hydrogen Aviation Fuel Research and Development.

This section directs the FAA administrator, in consultation with the Administrator of NASA and other relevant agencies, to develop a research and development strategy for the future use of hydrogen in aviation. The Administrator is required to transmit a report on specific research and development strategy, activities, and plans on safe use of hydrogen as part of a sustainable future for aviation. Based on the results of the strategy, the Administrator may then begin research on integrating hydrogen as an aviation fuel.

Section 204. Air Traffic Surveillance and Tracking Over Oceans and Other Remote Locations.

This section directs the Administrator, in consultation with the Administrator of NASA, to continue research for civilian air traffic surveillance over the oceans and to establish a pilot program to test and evaluate air traffic surveillance and tracking equipment over U.S.-controlled oceanic airspace and other remote locations. The section directs FAA to transmit a report to Congress on the activities conducted under this section.

Section 205. Utilizing Space-Based Assets to Improve Air Traffic Control and Aviation Safety.

This section directs the Administrator, in coordination with the Administrator of NASA, to carry out a program for research and development of air traffic control and aviation safety technologies utilizing space-based platforms and space-based automatic dependent surveillance-broadcast data on monitoring and reporting air turbulence events, space-based multilaterate surveillance, and identifying GPS and Navigation system interference on air traffic services.

This section directs the Administrator, in coordination with the Administrator of NASA, and in consultation with industry stakeholders, to carry out research, development, and testing of Automatic Dependent Surveillance-Broadcast (ADS-B) data. The research, development, and testing should focus on monitoring and reporting air turbulence events, understanding disruptions to GPS and other navigation systems, and evaluating the potential effectiveness is using space-based data on future aircraft. The Administrator shall issue a report to Congress on the results of the research performed under this section.

Section 206. Aviation weather technology review.

This section directs the Administrator, in consultation with the NOAA Administrator, to conduct a review of current and planned technologies that can more accurately detect and predict weather impacts to aviation, inform how advanced predictive models can enhance aviation operations, and increase national airspace system safety and efficiency.

Section 207. Air Traffic Surface Operations Safety.

This section directs the Administrator to carry out a research program and report to Congress on technologies to enhance air traffic surface operations and safety and to identify ground hazards and reduce near-misses at airports. It directs the Administrator to include research to enhance situational awareness of pilots and controllers and to consider data from diverse advanced air mobility operations to inform current safety programs.

Section 208. Airport and Airfield Pavement Technology Research Program.

This section authorizes the Administrator to continue the competitive grant program to support Airfield Pavement Technology Program to deploy innovative technologies for airfield pavements, taxiways, and aprons for safer, more cost-effective, and more durable airfield pavements.

Section 209. Technology Review of Artificial Intelligence and Machine Learning Technologies.

This section directs the Administrator to conduct a review of current and planned artificial intelligence/machine learning technologies to improve airport safety and efficiencies, and to report to Congress on the results of the findings.

Section 210. Research plan for commercial supersonic research.

This section directs the Administrator, in consultation with the Administrator of NASA and industry, to produce a comprehensive plan to identify research needed to support the establishment of Federal and international policies, regulations, standards, and recommended practices relating to the certification and safe and efficient operation of civil supersonic aircraft.

Section 211. Electromagnetic spectrum research and development.

This section directs the Administrator to conduct research and transmit a report on findings related to the effective and efficient use and management of radio frequency spectrum, including for aircraft, unmanned aircraft systems, and advanced air mobility. The research will include the impact on civil aviation safety when reallocating radio frequency spectrum adjacent to spectrum allocated for aviation communication, navigation, and surveillance. The research will include mitigation strategies and will consider the implication of new emerging technologies on spectrum interference.

Section 212. Aviation Structures, Materials, and Advanced Manufacturing Research and Development.

This section directs the Administrator to carry out a program for research and development of advanced additive manufacturing. The research will be conducted in partnership with commercial entities and will address the safety of aviation structures, materials, and additive manufacturing for safe use in and on aircraft. This section directs the Administrator to report on the findings of this research to Congress.

Section. 213. Research plan on the remote tower program.

This section directs the Administrator to submit a comprehensive plan for additional research and development needed to mature remote tower technology and to provide a strategic roadmap for research needed to inform operational certification of remote towers in the National Airspace System (NAS).

Section 214. Air Traffic Control Training.

This section directs the FAA Administrator to carry out a research program and transmit a report on the use of advanced technologies to reduce Certified Professional Controller training time to certification while maintaining or improving current levels of safety. The research will enable increased staffing and pipeline of air traffic control workforce.

Section 215. Report on Aviation Cybersecurity Directives.

This section directs the Administrator to provide a report to congress on the status of the FAA's implementation of the directive outlined in section 2111 of the FAA Extension, Safety, and Security Act. The report should include FAA's progress in developing and implementing a strategic cybersecurity framework, and a description of prioritized research and development activities for the most needed improvements to safeguard the NAS.