

Unmanned Aircraft Systems

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[House]
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CONFERENCE REPORT ON H.R. 658, FAA REAUTHORIZATION AND REFORM ACT OF 2012

Mr. Mica submitted the following conference report and statement on the bill (H.R. 658) to amend title 49, United States Code, to authorize appropriations for the Federal Aviation Administration for fiscal years 2011 through 2014, to streamline programs, create efficiencies, reduce waste, and improve aviation safety and capacity, to provide stable funding for the national aviation system, and for other purposes:

Conference Report (H. Rept. 112-381)

[...]

Subtitle B--Unmanned Aircraft Systems

SEC. 331. DEFINITIONS.

In this subtitle, the following definitions apply:

(1) Arctic.--The term "Arctic" means the United States zone of the Chukchi Sea, Beaufort Sea, and Bering Sea north of the Aleutian chain.

(2) Certificate of waiver; certificate of authorization.--The terms "certificate of waiver" and "certificate of authorization" mean a Federal Aviation Administration grant of approval for a specific flight operation.

(3) Permanent areas.--The term "permanent areas" means areas on land or water that provide for launch, recovery, and operation of small unmanned aircraft.

(4) Public unmanned aircraft system.--The term "public unmanned aircraft system" means an unmanned aircraft system that meets the qualifications and conditions required for operation of a public aircraft (as defined in section 40102 of title 49, United States Code).

(5) Sense and avoid capability.--The term "sense and avoid capability" means the capability of an unmanned aircraft to remain a safe distance from and to avoid collisions with other airborne aircraft.

(6) Small unmanned aircraft.--The term "small unmanned aircraft" means an unmanned aircraft weighing less than 55 pounds.

(7) Test range.--The term "test range" means a defined geographic area where research and development are conducted.

(8) Unmanned aircraft.--The term "unmanned aircraft" means an aircraft that is operated without the possibility of direct human intervention from within or on the aircraft.

(9) Unmanned aircraft system.--The term "unmanned aircraft system" means an unmanned aircraft and associated elements (including communication links and the components that control the unmanned aircraft) that are required for the pilot in command to operate safely and efficiently in the national airspace system.

SEC. 332. INTEGRATION OF CIVIL UNMANNED AIRCRAFT SYSTEMS INTO NATIONAL AIRSPACE SYSTEM.

(a) Required Planning for Integration.--

(1) Comprehensive plan.--Not later than 270 days after the date of enactment of this Act, the Secretary of Transportation, in consultation with representatives of the aviation industry, Federal agencies that employ unmanned

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aircraft systems technology in the national airspace system, and the unmanned aircraft systems industry, shall develop a comprehensive plan to safely accelerate the integration of civil unmanned aircraft systems into the national airspace system.

(2) Contents of plan.--The plan required under paragraph (1) shall contain, at a minimum, recommendations or projections on--

(A) the rulemaking to be conducted under subsection (b), with specific recommendations on how the rulemaking will--

(i) define the acceptable standards for operation and certification of civil unmanned aircraft systems;

(ii) ensure that any civil unmanned aircraft system includes a sense and avoid capability; and

(iii) establish standards and requirements for the operator and pilot of a civil unmanned aircraft system, including standards and requirements for registration and licensing;

(B) the best methods to enhance the technologies and subsystems necessary to achieve the safe and routine operation of civil unmanned aircraft systems in the national airspace system;

(C) a phased-in approach to the integration of civil unmanned aircraft systems into the national airspace system;

(D) a timeline for the phased-in approach described under subparagraph (C);

(E) creation of a safe

(F) airspace designation for cooperative manned and unmanned flight operations in the national airspace system;

(G) establishment of a process to develop certification, flight standards, and air traffic requirements for civil unmanned aircraft systems at test ranges where such systems are subject to testing;

(H) the best methods to ensure the safe operation of civil unmanned aircraft systems and public unmanned aircraft systems simultaneously in the national airspace system; and

(I) incorporation of the plan into the annual NextGen Implementation Plan document (or any successor document) of the Federal Aviation Administration.

(3) Deadline.--The plan required under paragraph (1) shall provide for the safe integration of civil unmanned aircraft systems into the national airspace system as soon as practicable, but not later than September 30, 2015.

(4) Report to congress.--Not later than 1 year after the date of enactment of this Act, the Secretary shall submit to Congress a copy of the plan required under paragraph (1).

(5) Roadmap.--Not later than 1 year after the date of enactment of this Act, the Secretary shall approve and make available in print and on the Administration's Internet web site a 5-year roadmap for the introduction of civil unmanned aircraft systems into the national airspace system, as coordinated by the Unmanned Aircraft Program Office of the Administration. The Secretary shall update the roadmap annually.

(b) Rulemaking.--Not later than 18 months after the date on which the plan required under subsection (a)(1) is submitted to Congress under subsection (a)(4), the Secretary shall publish in the Federal Register--

(1) a final rule on small unmanned aircraft systems that will allow for civil operation of such systems in the national airspace system, to the extent the systems do not meet the requirements for expedited operational authorization under section 333 of this Act;

(2) a notice of proposed rulemaking to implement the recommendations of the plan required under subsection (a)(1), with the final rule to be published not later than 16 months after the date of publication of the notice; and

(3) an update to the Administration's most recent policy statement on unmanned aircraft systems, contained in Docket

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No. FAA-2006-25714.

(c) Pilot Projects.--

(1) Establishment.--Not later than 180 days after the date of enactment of this Act, the Administrator shall establish a program to integrate unmanned aircraft systems into the national airspace system at 6 test ranges. The program shall terminate 5 years after the date of enactment of this Act.

(2) Program requirements.--In establishing the program under paragraph (1), the Administrator shall--

(A) safely designate airspace for integrated manned and unmanned flight operations in the national airspace system;

(B) develop certification standards and air traffic requirements for unmanned flight operations at test ranges;

(C) coordinate with and leverage the resources of the National Aeronautics and Space Administration and the Department of Defense;

(D) address both civil and public unmanned aircraft systems;

(E) ensure that the program is coordinated with the Next Generation Air Transportation System; and

(F) provide for verification of the safety of unmanned aircraft systems and related navigation procedures before integration into the national airspace system.

(3) Test range locations.--In determining the location of the 6 test ranges of the program under paragraph (1), the Administrator shall--

(A) take into consideration geographic and climatic diversity;

(B) take into consideration the location of ground infrastructure and research needs; and

(C) consult with the National Aeronautics and Space Administration and the Department of Defense.

(4) Test range operation.--A project at a test range shall be operational not later than 180 days after the date on which the project is established.

(5) Report to congress.--

(A) In general.--Not later than 90 days after the date of the termination of the program under paragraph (1), the Administrator shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure and the Committee on Science, Space, and Technology of the House of Representatives a report setting forth the Administrator's findings and conclusions concerning the projects.

(B) Additional contents.--The report under subparagraph (A) shall include a description and assessment of the progress being made in establishing special use airspace to fill the immediate need of the Department of Defense--

(i) to develop detection techniques for small unmanned aircraft systems; and

(ii) to validate the sense and avoid capability and operation of unmanned aircraft systems.

(d) Expanding Use of Unmanned Aircraft Systems in Arctic.--

(1) In general.--Not later than 180 days after the date of enactment of this Act, the Secretary shall develop a plan and initiate a process to work with relevant Federal agencies and national and international communities to designate permanent areas in the Arctic where small unmanned aircraft may operate 24 hours per day for research and commercial purposes. The plan for operations in these permanent areas shall include the development of processes to facilitate the safe operation of unmanned aircraft beyond line of sight. Such areas shall enable over-water flights from the surface to at least 2,000 feet in altitude, with ingress and egress routes from selected coastal launch sites.

(2) Agreements.--To implement the plan under paragraph (1), the Secretary may enter into an agreement with relevant national and international communities.

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(3) Aircraft approval.--Not later than 1 year after the entry into force of an agreement necessary to effectuate the purposes of this subsection, the Secretary shall work with relevant national and international communities to establish and implement a process, or may apply an applicable process already established, for approving the use of unmanned aircraft in the designated permanent areas in the Arctic without regard to whether an unmanned aircraft is used as a public aircraft, a civil aircraft, or a model aircraft.

SEC. 333. SPECIAL RULES FOR CERTAIN UNMANNED AIRCRAFT SYSTEMS.

(a) In General.--Notwithstanding any other requirement of this subtitle, and not later than 180 days after the date of enactment of this Act, the Secretary of Transportation shall determine if certain unmanned aircraft systems may operate safely in the national airspace system before completion of the plan and rulemaking required

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by section 332 of this Act or the guidance required by section 334 of this Act.

(b) Assessment of Unmanned Aircraft Systems.--In making the determination under subsection (a), the Secretary shall determine, at a minimum--

(1) which types of unmanned aircraft systems, if any, as a result of their size, weight, speed, operational capability, proximity to airports and populated areas, and operation within visual line of sight do not create a hazard to users of the national airspace system or the public or pose a threat to national security; and

(2) whether a certificate of waiver, certificate of authorization, or airworthiness certification under section 44704 of title 49, United States Code, is required for the operation of unmanned aircraft systems identified under paragraph (1).

(c) Requirements for Safe Operation.--If the Secretary determines under this section that certain unmanned aircraft systems may operate safely in the national airspace system, the Secretary shall establish requirements for the safe operation of such aircraft systems in the national airspace system.

SEC. 334. PUBLIC UNMANNED AIRCRAFT SYSTEMS.

(a) Guidance.--Not later than 270 days after the date of enactment of this Act, the Secretary of Transportation shall issue guidance regarding the operation of public unmanned aircraft systems to--

(1) expedite the issuance of a certificate of authorization process;

(2) provide for a collaborative process with public agencies to allow for an incremental expansion of access to the national airspace system as technology matures and the necessary safety analysis and data become available, and until standards are completed and technology issues are resolved;

(3) facilitate the capability of public agencies to develop and use test ranges, subject to operating restrictions required by the Federal Aviation Administration, to test and operate unmanned aircraft systems; and

(4) provide guidance on a public entity's responsibility when operating an unmanned aircraft without a civil airworthiness certificate issued by the Administration.

(b) Standards for Operation and Certification.--Not later than December 31, 2015, the Administrator shall develop and

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implement operational and certification requirements for the operation of public unmanned aircraft systems in the national airspace system.

(c) Agreements with Government Agencies.--

(1) In general.--Not later than 90 days after the date of enactment of this Act, the Secretary shall enter into agreements with appropriate government agencies to simplify the process for issuing certificates of waiver or authorization with respect to applications seeking authorization to operate public unmanned aircraft systems in the national airspace system.

(2) Contents.--The agreements shall--

(A) with respect to an application described in paragraph (1)--

(i) provide for an expedited review of the application;

(ii) require a decision by the Administrator on approval or disapproval within 60 business days of the date of submission of the application; and

(iii) allow for an expedited appeal if the application is disapproved;

(B) allow for a one-time approval of similar operations carried out during a fixed period of time; and

(C) allow a government public safety agency to operate unmanned aircraft weighing 4.4 pounds or less, if operated--

(i) within the line of sight of the operator;

(ii) less than 400 feet above the ground;

(iii) during daylight conditions;

(iv) within Class G airspace; and

(v) outside of 5 statute miles from any airport, heliport, seaplane base, spaceport, or other location with aviation activities.

SEC. 335. SAFETY STUDIES.

The Administrator of the Federal Aviation Administration shall carry out all safety studies necessary to support the integration of unmanned aircraft systems into the national airspace system.

SEC. 336. SPECIAL RULE FOR MODEL AIRCRAFT.

(a) In General.--Notwithstanding any other provision of law relating to the incorporation of unmanned aircraft systems into Federal Aviation Administration plans and policies, including this subtitle, the Administrator of the Federal Aviation Administration may not promulgate any rule or regulation regarding a model aircraft, or an aircraft being developed as a model aircraft, if--

(1) the aircraft is flown strictly for hobby or recreational use;

(2) the aircraft is operated in accordance with a community-based set of safety guidelines and within the programming of a nationwide community-based organization;

(3) the aircraft is limited to not more than 55 pounds unless otherwise certified through a design, construction, inspection, flight test, and operational safety program administered by a community-based organization;

(4) the aircraft is operated in a manner that does not interfere with and gives way to any manned aircraft; and

(5) when flown within 5 miles of an airport, the operator of the aircraft provides the airport operator and the airport air traffic control tower (when an air traffic facility is located at the airport) with prior notice of the operation (model aircraft operators flying from a permanent location within 5 miles of an airport should establish a mutually-agreed upon operating procedure with the airport operator and the airport air traffic control tower (when an air traffic facility is located at the airport)).

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(b) Statutory Construction.--Nothing in this section shall be construed to limit the authority of the Administrator to pursue enforcement action against persons operating model aircraft who endanger the safety of the national airspace system.

(c) Model Aircraft Defined.--In this section, the term "model aircraft" means an unmanned aircraft that is--

- (1) capable of sustained flight in the atmosphere;
- (2) flown within visual line of sight of the person operating the aircraft; and
- (3) flown for hobby or recreational purposes.

[...]

SEC. 903. 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.''

[...]

Subtitle B--Unmanned Aircraft Systems

DEFINITIONS

H321/S--

House bill

Section 321 defines the terms: "certificate of waiver", "sense and avoid capability", "public unmanned aircraft system", "small unmanned aircraft", "test range", "unmanned aircraft", and "unmanned aircraft system (UAS)."

Senate bill

No similar provision.

Conference Substitute

House and Senate bills merged to include all of House definitions and Senate definition of "Arctic".

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H322/S320, 607(a)(b)(d)(e)(f)

House bill

Section 322 requires the Secretary of Transportation to develop a plan, in consultation with aviation and Unmanned Aircraft Systems (UAS) industry representatives, within nine months of enactment, for the safe integration of civil UAS into the Nation Airspace (NAS). This plan must contain a review of technologies and research to assist in this goal, recommendations for a rulemaking on the definition of acceptable standards, ensure civil UAS have sense and avoid capability, develop standards and requirements for operator and pilots of UASs, and recommendations. The plan must include a realistic time frame for UAS integration into the NAS, but no later than September 30, 2015. The plan must be submitted to Congress within one year of enactment. The FAA is required to initiate a Notice of Proposed Rulemaking (NPRM) for site integration of UAS within 18 months of the date of enactment of the integration plan.

Senate bill

Section 320 requires the FAA to develop a plan within one year to accelerate the integration of UASs into the NAS. This plan must include: 1) a pilot project that includes the integration of UAS into six test sites, representing geographic and climate differences within the United States, by 2012; 2) development of certification, flight standards, and air traffic requirements for UAS; 3) the dedication of funding for research on UAS certification, flight standards, and air traffic control (ATC); 4) coordination of research between NASA and DOD; and 5) verification of the safety of UAS before their integration into the NAS. This section would allow the FAA Administrator to include testing at six test sites as part of the integration plan by 2012. The FAA is directed to work with DOD to certify and develop flight standards for military unmanned aerial systems and to integrate these systems into the NAS as part of the UAS integration plan. The FAA Administrator is required to submit a report describing and assessing the progress made in establishing special use airspace for DOD to develop detection techniques for small UASs.

Section 607 allows the FAA to conduct developmental research on UASs. It would direct the FAA and the National Academy of Sciences to create an assessment of UAS capabilities and would require the National Academy of Sciences to submit a report to Congress on the subject. It requires the FAA to issue a rule to update the most recent policy statement on UASs. The FAA is directed to identify permanent areas in the Arctic where UASs may operate 24 hours a day. The FAA is to take part in cost-share pilot projects designed to accelerate the safe integration of UASs into the NAS.

Conference Substitute

House and Senate bills merged. The conference committee directs the Secretary to develop a plan to accelerate the safe integration of unmanned aircraft systems (UAS) into the national airspace system. The Secretary is directed to develop the plan in consultation with the aviation industry, federal agencies using UASs, and the UAS industry as soon as practicable, but no later than September 30, 2015. Concurrent with the integration planning, the Secretary is directed to publish, and update annually, a five-year roadmap describing the activities of the FAA's Unmanned Aircraft Program Office, and its efforts to safely integrate UASs into the national airspace system. The conference committee also directs the Secretary to promulgate rules to allow for integration of small UASs into the national airspace system. The

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conference committee also directs the Administrator of the Federal Aviation Administration to establish six test ranges until September 30, 2020. Test range locations are not designated in the legislation.

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Instead, the Administrator is directed to coordinate with, and leverage resources from, the National Aeronautics and Space Administration and the Department of Defense to select the test ranges based on the criteria set forth in this section. This language is consistent with legislative direction in the National Defense Authorization Act for Fiscal Year 2012 (Public Law 112-81). The intent of the committee is for the Administrator to establish a total of six test ranges under both laws, and not six ranges to be established under each law for a total of twelve. The conference committee directs the Secretary to develop a plan for the use of UASs in the arctic, as defined in this subtitle. Finally, the term "non-exclusionary airspace" was removed as the FAA does not recognize that term. The conference committee intends that when the FAA establishes the program to integrate UASs into the national airspace system at six test ranges, the Administrator shall safely designate airspace for integrated manned and unmanned flight operations in the national airspace system.

SPECIAL RULES FOR CERTAIN UNMANNED AIRCRAFT SYSTEMS

H323/S--

House bill

Section 323 directs that within 180 days the Secretary of Transportation, prior to completing of the Commercial UAS integration plan, will determine if certain UAS may operate in the NAS. Assessment of the UASs will determine which types of UAS do not create hazard to users of NAS or national security, and whether a certificate of waiver or authorization of airworthiness is required. If the Secretary determines UAS may operate safely in the NAS, the Secretary shall establish requirements of the safe operation of such systems.

Senate bill

No similar provision.

Conference Substitute

House bill.

PUBLIC UNMANNED AIRCRAFT SYSTEMS

H324/S--

House bill

Section 324 directs that within 270 days the Secretary of Transportation will issue guidance on the operation of public UASs to expedite the certificate of authorization process, provide a collaborative process for expansion of access to the NAS, and provide guidance on public entities responsible when operating UASs. By December 31, 2015, the Secretary is required to implement operational and certification standards. The Secretary is directed to enter in agreements, within 90 days, with appropriate government agencies to simplify and expedite the process for issuing certificates of waiver or authorization regarding applications seeking authorization to operate public UAS in the NAS.

Senate bill

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No similar provision.
Conference Substitute
House bill.

SAFETY STUDIES

H325/S--

House bill

Section 325 directs the Administrator to conduct all safety studies necessary to support integration of UAS into the NAS.

Senate bill

No similar provision.
Conference Substitute
House bill.

SPECIAL RULE FOR MODEL AIRCRAFT

H--/S607(g)

House bill

No similar provision.

Senate bill

Section 607(g) exempts most model airplanes used for recreational or academic use from any UAS regulations established by the FAA.

Conference Substitute

Senate bill with modifications. Language including model aircraft for the purposes of sports, competitions and academic purposes is removed and replaced with ``hobby''. The modified section includes language requiring that the model aircraft must be operated in a manner that does not interfere with and gives way, to all manned aircraft. In addition, language that requires that model aircraft flown within five miles of an airport will give prior notification to the airport and the air traffic control (ATC), and that model aircraft that are flown consistently within five miles of the ATC will do so under standing agreements with the airports and ATC. Lastly, language is added that will ensure that nothing in this provision will interfere with the Administrator's authority to pursue enforcement action against persons operating model aircraft who endanger the safety of the national airspace system. In this section the term ``nationwide community-based organization'' is intended to mean a membership based association that represents the aeromodeling community within the United States; provides its members a comprehensive set of safety guidelines that underscores safe aeromodeling operations within the National Airspace System and the protection and safety of the general public on the ground; develops and maintains mutually supportive programming with educational institutions, government entities and other aviation associations; and acts as a liaison with government agencies as an advocate for its members.

UNMANNED AIRCRAFT SYSTEMS TEST RANGE

H326/S607(c)

House bill

Section 326 directs the Administrator no later than one year after enactment to establish a program to integrate UASs into the national airspace system at no fewer than four test ranges. The program will include safely designating nonexclusionary airspace for integrated unmanned flight

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operations, develop certification standards and air traffic requirements, coordinate and leverage the resources of National Air and Space Administration and Department of Defense, address both civil and public UAS, ensure the program is coordinated with NextGen, and provide for verification of safety of UASs. In determining test range locations the Administrator shall consider geographic and climate diversity and consult with NASA and the Air Force.
Senate bill

Section 607(c) is a similar provision, but it allows the Administrator to include testing at three test sites as part of the integration plan by 2012. It directs the FAA to work with DOD to certify and develop flight standards for military UASs and to integrate these systems into the NAS as part of the UAS integration plan.

Section 320 establishes a test range program for 10 sites.
Conference Substitute

House and Senate bills merged into language that is included in Section 332 ``Integration of civil unmanned aircraft into the national airspace system''.

[...]

UNMANNED AIRCRAFT SYSTEMS

H1004/S607(a)

House bill

Section 1004 requires the Administrator in conjunction with other appropriate federal agencies to develop technologies and methods to assess the risk and prevent defects, failures, and malfunctions of products, parts and processes for use in all classes of Unmanned Aircraft Systems (UAS) that could result in catastrophic failure of UAS or endanger other aircraft in the NAS. The Administrator is required to supervise research which will develop better understanding of the relationship between human factors and UAS safety and develop simulation models for integration of all UASs into the NAS without degrading safety for current users.

Senate bill

Section 607(a) permits the FAA to conduct developmental research on UASs. It authorizes the FAA, 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.

Conference Substitute

House bill.