



**[4910-13]**

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Parts 121, 125, 135**

**[Docket No.: FAA-2012-1059; Notice No. 12-08]**

**RIN 2120-AK11**

**Minimum Altitudes for Use of Autopilots**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** The FAA proposes to amend and harmonize minimum altitudes for use of autopilots for transport category airplanes. The proposed rule would enable the operational use of advanced autopilot and navigation systems by incorporating the capabilities of new and future autopilots, flight guidance systems, and Global Navigation Satellite System (GNSS) guidance systems while protecting the continued use of legacy systems at current autopilot minimum use altitudes. The proposed rule would accomplish this through a performance-based approach, using the certified capabilities of autopilot systems as established by the Airplane Flight Manual (AFM) or as approved by the Administrator.

**DATES:** Send comments on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** Send comments identified by docket number Docket No.: FAA-2012-1059 using any of the following methods:

- **Federal eRulemaking Portal:** Go to <http://www.regulations.gov> and follow the online instructions for sending your comments electronically.

- Mail: Send comments to Docket Operations, M-30; U.S. Department of Transportation (DOT), 1200 New Jersey Avenue, SE, Room W12-140, West Building Ground Floor, Washington, DC 20590-0001.
- Hand Delivery or Courier: Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- Fax: Fax comments to Docket Operations at 202-493-2251.

*Privacy*: The FAA will post all comments it receives, without change, to <http://www.regulations.gov>, including any personal information the commenter provides. Using the search function of the docket Web site, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT's complete Privacy Act Statement can be found in the Federal Register published on April 11, 2000 (65 FR 19477-19478), as well as at <http://DocketsInfo.dot.gov>.

*Docket*: Background documents or comments received may be read at <http://www.regulations.gov> at any time. Follow the online instructions for accessing the docket or go to the Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

**FOR FURTHER INFORMATION CONTACT:** For technical questions concerning this action, contact Kel O. Christianson, FAA, Aviation Safety Inspector, Performance Based Flight Systems Branch (AFS-470), Flight Standards Service, Federal Aviation

Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone 202-385-4702; e-mail [Kel.christianson@faa.gov](mailto:Kel.christianson@faa.gov).

For legal questions concerning this action, contact Robert H. Frenzel, Manager, Operations Law Branch, Office of the Chief Counsel, Regulations Division (AGC-220), Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone 202-267-3073; e-mail [Robert.Frenzel@faa.gov](mailto:Robert.Frenzel@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Authority for this Rulemaking**

The FAA's authority to issue rules on aviation safety is found in Title 49 of the United States Code. This rulemaking is promulgated under the authority described in 49 U.S.C. 44701(a)(5), which requires the Administrator to promulgate regulations and minimum standards for other practices, methods, and procedures necessary for safety in air commerce and national security. This amendment to the regulation is within the scope of that authority because it prescribes an accepted method for ensuring the safe operation of aircraft while using autopilot systems.

### **I. Overview of Proposed Rule**

The FAA proposes to amend and harmonize minimum altitudes for use of autopilots for transport category airplanes in order to streamline and simplify these operational rules. The proposed rule would enable the operational use of advanced autopilot and navigation systems by incorporating the capabilities of new and future autopilots, flight guidance systems, and Global Navigation Satellite System (GNSS) guidance systems while protecting the continued use of legacy systems. This would allow the FAA to enable the benefits of Next Generation Air Transportation System (NextGen)

technologies and procedures (Optimized Profile Descents, Performance Based Navigation (PBN)) to enhance aviation safety in the National Airspace System (NAS). The rule would accomplish this through a performance-based approach, using the certified capabilities of autopilot systems as established by the Airplane Flight Manual (AFM). The proposal would also give the FAA Administrator the authorization to require an altitude higher than the AFM if the Administrator believes it to be in the interest of public safety.

Currently, operators have a choice whether or not to update their aircraft with new autopilots as they are developed and certified by equipment manufacturers. This rule would not affect that decision-making process and would protect operators who choose to continue to operate as they do today. As a result, the proposed rule would not impose any additional costs on certificate holders that operate under parts 121, 125, or 135. Also, by setting new minimum altitudes for each phase of flight that certified equipment may operate to, the proposed rule would give manufacturers more certainty that new products could be used as they are developed.

In response to Executive Order 13563 issued by President Obama on January 18, 2011, the proposed rule was first identified for inclusion in the Department of Transportation Retrospective Regulatory Review (May 2011), noting that the current minimum altitudes for use of autopilots were unduly restrictive and would limit the ability to use new technologies. On May 10, 2012, President Obama signed Executive Order 13610, establishing the Retrospective Regulatory Review as an on-going obligation. The proposed rule would also be consistent with the requirement in Executive Order 13610 to modify or streamline regulations “in light of changed circumstances, including the rise of new technologies.”

## **II. Background**

### A. Statement of the Problem

The FAA and Civil Aviation Authority (CAA) technical standards for autopilot systems date back to 1947. These standards have been revised eight times since 1959, but the operating rules for autopilot minimum use altitudes in 14 CFR 121.579, 125.329, and 135.93 have not been amended in any significant way since the recodification of the Civil Aviation Regulations (CAR) and Civil Aviation Manuals (CAM) on December 31, 1964.

By contrast, autopilot certification standards contained in § 25.1329 were updated as recently as April 11, 2006. Consequently, operational regulations in parts 121, 125, and 135 do not adequately reflect the capabilities of modern technologies in use today and thus make it difficult to keep pace with the FAA's implementation of NextGen.

### B. History

#### *1994 Notice of Proposed Rulemaking (NPRM)*

The FAA published an NPRM in the **Federal Register** on December 9, 1994 (59 FR 63868) based on a recommendation from the Autopilot Engagement Working Group of the Aviation Rulemaking Advisory Committee (ARAC) to change the existing rules concerning engagement of autopilots during takeoff. The ARAC determined that the increased use of an autopilot during takeoff would enhance aviation safety by giving pilots greater situational awareness of what was going on inside and outside of the aircraft. This benefit would be realized by reducing the task loading required to manually fly the aircraft during the critical takeoff phase of flight. The FAA received seven comments in response to the NPRM, and all commenters supported an amendment to the rule.

#### *1997 Rulemaking*

In 1997, the FAA amended 14 CFR 121.579, 125.329, and 135.93 to permit certificate holders the use of an approved autopilot system for takeoff, based on the 1994 NPRM and an expectation that autopilot technology would continue to advance (62 FR 27922; May 21, 1997). This authorization was given to certificate holders through an Operations Specification (OpSpec), which was implemented as a stopgap measure. The rule itself was not changed to provide manufacturers and operators the guidance for producing and operating new aircraft capable of attaining lower autopilot minimum use altitudes. The amendment also failed to address autopilot minimum use altitudes on instrument approaches or harmonize 14 CFR parts 121, 125 and 135.

#### *ARAC Efforts To Amend Autopilot Rules*

Since 1997, multiple groups have been formed to review current regulations and autopilot technologies. The FAA Transport Airplane Directorate initiated an effort under the ARAC Flight Guidance Harmonization Working Group to evaluate the status of current autopilot technologies, rules and guidance along with the harmonization of U.S. policy and guidance with the Joint Aviation Authorities. Later, the Performance-based operations Aviation Rulemaking Committee, which established the Autopilot Minimum Use Height (MUH) action team, evaluated autopilot minimum use altitudes and made recommendations to the Associate Administrator for Aviation Safety. The team was specifically tasked with developing recommendations to address progress in the area of PBN and the subsets of area navigation (RNAV) and required navigation performance (RNP) operations. The team's conclusions aligned with the previous groups' acknowledgement that 14 CFR 121.579, 125.329 and 135.93 were outdated and recommended new rulemaking to take advantage of advancements in modern aircraft

technologies and the certified capabilities of autopilot systems to create a performance-based structure to aid in the implementation of NextGen flight operations.

### **III. Discussion of the Proposal**

#### A. Revise Minimum altitudes for use of autopilot (§ 121.579, 125.329 and 135.93)

The FAA proposes a complete rewrite of 14 CFR 121.579, 125.329 and 135.93. The language in each section of the proposed regulations would be identical except for an additional paragraph in § 135.93 exempting rotorcraft. The proposed rule would harmonize these three parts of 14 CFR because the rule would be based on the performance capabilities of the equipment being utilized, not the operating certificate held. Nothing in the proposed rule would prevent or adversely affect the continued safe operation of aircraft using legacy navigation systems.

The proposed rule would align the autopilot operational rules with the new autopilot certification standards contained in § 25.1329, updated and effective April 11, 2006. The proposed rule would also be proactive by allowing for future technological advances within the scope of the rule, thus facilitating the implementation of NextGen into the National Airspace System.

In effect, the proposed rule would accommodate future technological changes by setting safe minimum altitudes in each phase of flight that certified autopilots could operate to. Once a new piece of equipment or system is certified and the new limitations incorporated in the AFM, as required in §§ 21.5, 25.1501 and 25.1581, a certificate holder might then make use of the new capabilities when authorized through OpSpecs. This change would enable new autopilots to utilize both current and future navigational systems.

The current rule only references ground-based instrument approach facilities and Instrument Landing Systems (ILS).

Sections 121.579(a), 125.329(a), and 135.93(a) of the proposed rule would define altitude references for the different phases of flight, unlike the current rule which defines all altitudes with reference to terrain. All altitudes referring to takeoff, initial climb and go around/missed approach would be defined as being above airport elevation. All altitudes referring to enroute flight would be defined as being above terrain elevation. All altitudes referring to approach would be defined as being above Touchdown Zone Elevation (TDZE), except if the altitude is in reference to a Decision Altitude/Height (DA(H)) or Minimum Descent Altitude (MDA) in which case the altitude would be defined in relation to the DA(H) or MDA itself (e.g. 50 ft. below DA(H)). All altitudes defined as being above airport elevation, TDZE, or terrain would be considered to be above ground level (AGL).

As a result, the proposed rule would allow operators to add the applicable altitudes or heights published in the AFM to the airport and TDZE published on the instrument approach plate. This also would provide a standard reference for all operators and manufacturers using and producing Flight Management Systems (FMS).

The proposed rule would be formatted to model the actual phases of flight: takeoff through landing or go-around. Each paragraph in the proposed rule would have a base minimum autopilot use altitude for the intended phase of flight that all aircraft may utilize. In order to protect the use of all legacy systems, the proposed base altitudes would remain identical to the altitudes in the current rule. Lower minimum use altitudes would be based on certification of the autopilot system and limitations found in the AFM. The proposed

enroute minimum use altitude would not change from the current rule. The minimum use altitude in each paragraph might also be raised by the Administrator if warranted by operational or safety need.

B. Takeoff and Initial Climb (§§ 121.579 (b), 125.329(b) and 135.93(b))

The current rule defines the base minimum altitude at which all aircraft may engage the autopilot after takeoff as 500 ft. or double the autopilot altitude loss (as specified in the AFM) above the terrain, whichever is higher. The current rule also gives the Administrator the authority to use OpSpecs to authorize a lower minimum engagement altitude on takeoff, which must be specified in the AFM. This takeoff paragraph was added as an amendment to the original autopilot rule that applied only to enroute operations. Although the amendment provided a vehicle to allow lower autopilot minimum use altitudes through OpSpecs, it did not place the authority for the operations directly in the rule.

The proposed rule would retain the same minimum altitudes for all aircraft to protect legacy systems and would introduce the ability to use lower engagement altitude on takeoff/initial climb based upon the certified limits of the autopilot as specified in the AFM. The proposed rule would also give the Administrator the authority to specify an altitude above, but not below, that specified in the AFM.

As a result, the proposed rule would establish the AFM as a performance-based standard by which a certificate holder might be authorized for operations through its OpSpecs. Once an autopilot's capabilities and limitations are certified and reflected in the AFM, a certificate holder might request a change to its OpSpecs to authorize use of the new minimum use altitude specified in the AFM.

C. Enroute (§§ 121.579(c), 125.329(c) and 135.93(c))

The enroute paragraph of the current rule specifies a minimum use altitude of 500 ft. above terrain, or an altitude that is no lower than twice the autopilot altitude loss specified in the AFM, whichever is higher, for all operations. The proposed rule would maintain the same base minimum use altitude as the current rule. The proposed rule would also grant the Administrator the authority to specify a higher altitude.

D. Approach (§§ 121.579(d), 125.329(d), 135.93(d))

The base minimum use altitude for an approach for the proposed rule would remain the same as that of the current rule. No person may use an autopilot at an altitude lower than 50 ft. below the DA (H) or MDA of the instrument approach being flown. The current rule allows for exceptions to this altitude with the use of a coupled autopilot, instrument landing system (ILS), and in specified reported weather conditions. The proposed rule would maintain the limitation that no person may use an autopilot at an altitude lower than 50 ft. below the DA(H) or MDA of the approach being flown and provides weather criteria that would allow current aircraft to meet the same autopilot minimum use altitudes as today.

However, the proposed rule would enable properly equipped aircraft to use the autopilot with other certified navigation systems in certain specified weather conditions to attain the same minimum use altitudes currently allowed with the coupled ILS. These aircraft must be capable of flying a coupled approach with both vertical and lateral path references being provided to the autopilot for guidance. A typical vertical path reference is a flight path angle provided by the signal of an ILS, microwave landing system, GNSS landing system or a navigation flight path provided for RNAV operations by an onboard

database. This change would allow a greater number of aircraft to safely use their autopilots to lower minimum use altitudes.

The remaining provisions in the approach paragraph would provide minimum use altitudes dependent on the type of autopilot certification found in the AFM. The potential lowest minimum use altitude allowed by the proposed rule would be 50 ft. above the elevation TDZE. The advantage of this provision, for example, is that it would allow operators to keep the autopilot engaged until over the runway during complex PBN approaches. This would enable a stable approach path in both Instrument Meteorological Conditions (IMC) and Visual Meteorological Conditions (VMC). In IMC, it would alleviate the transition from the autopilot to instrument hand flying during a critical segment of the approach. This would reduce the possibility of disorientation and a destabilized approach. In VMC, the same stabilized approach could be maintained while flightcrews monitor aircraft performance and watch for potential traffic conflicts. Currently, pilots must perform these tasks while disconnecting the autopilot half way through a descending final turn and continuing the approach manually. Although not being utilized, current technology exists to allow aircraft autopilot systems to remain engaged below the current allowable altitude using multiple forms of navigation. Such technology will eventually become a requirement for the implementation of NextGen. The proposed rule would provide a regulatory vehicle to meet this vision.

E. Go Around/Missed Approach (§§ 121.579(e), 125.329(e) and 135.93(e))

The proposed rule would also provide guidance for executing a missed approach/go-around that the current rule lacks. This guidance is first presented in the approach paragraph, wherein an aircraft does not need to comply with the autopilot

minimum use altitude of that paragraph provided it is executing a coupled missed approach/go-around. A new subparagraph is also included to provide guidance on when the autopilot could be engaged on the missed approach/go-around, if a manual missed approach/go-around is accomplished.

#### F. Landing (§§ 121.579(f), 125.329(f) and 135.93(f))

The last paragraph proposed in the new rule would provide guidance for landing. Current language authorizes the Administrator, through OpSpecs, to allow an aircraft to touchdown with the autopilot engaged using an approved autoland flight guidance system. This authorization relies upon an ILS to meet this requirement. The proposed rule would state that minimum use altitudes do not apply to autopilot operations when an approved and authorized landing system mode is being used for landing. The difference in the two rules is that the proposed rule would stand alone and would not limit approved landing systems to be ground based systems, as the current rule does. The proposed rule would also allow new performance based landing systems to be approved and implemented for autoland operations as they become available.

#### G. Rotorcraft Operations (§ 135.93(g))

The current rule expressly excludes rotorcraft operations from the minimum altitudes for use of autopilots. The proposed rule would continue to exclude rotorcraft operations.

### **IV. Regulatory Notices and Analyses**

#### A. Regulatory Evaluation

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 directs that each Federal agency shall propose or adopt a regulation

only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 (Public Law 96-354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (Public Law 96-39) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, this Trade Act requires agencies to consider international standards and, where appropriate, that they be the basis of U.S. standards. Fourth, the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of \$100 million or more annually (adjusted for inflation with base year of 1995). This portion of the preamble summarizes the FAA's analysis of the economic impacts of this proposed rule. We suggest readers seeking greater detail read the full regulatory evaluation, a copy of which we have placed in the docket for this rulemaking.

Department of Transportation Order DOT 2100.5 prescribes policies and procedures for simplification, analysis, and review of regulations. If the expected cost impact is so minimal that a proposed or final rule does not warrant a full evaluation, this order permits that a statement to that effect and the basis for it be included in the preamble if a full regulatory evaluation of the cost and benefits is not prepared. Such a determination has been made for this proposed rule. The reasoning for this determination follows:

*Benefits*

The rule would incorporate the capabilities of current autopilots and would allow operators to more readily utilize the capabilities of future autopilots, flight guidance systems, and GNSS guidance systems as they are developed. These new capabilities would enable and accelerate the benefits of NextGen technologies and procedures that depend upon flight guidance systems to enhance aviation safety in the NAS.

#### *Costs*

The proposed rule would specify autopilot minimum use altitudes for parts 121, 125 and 135 operators. The rule would be based on the capabilities of the aircraft and the minimum use altitudes or lack of minimum use altitudes published in the Airplane Flight Manual (AFM). The proposed rule would not affect the minimum use altitudes presently used by operators in the National Airspace System. Operators would have the option to operate as they currently do or pursue the proposed lower minimum use altitudes based on their aircraft certification. Operators with aircraft that are certified and wishing to immediately achieve the proposed lower minimum use altitudes might incur the cost of accelerated training. This accelerated training cost is a change in present value, but not in total cost, because this type of training would have occurred in the future. Additionally, operators would not incur certification costs for aircraft, avionics equipment, autopilot and flight management systems that have already been certificated. Also, by setting new minimum altitudes for each phase of flight that certified equipment might operate to, the proposed rule would give manufacturers more certainty that new products can be used as they are developed. The FAA recognizes some older airplanes are not certificated to utilize the lower proposed minimum use altitudes. The FAA believes these operators would not incur these costs because they would not seek to modify their aircraft in order to be

certified for the lower minimum use altitudes. The FAA seeks public comments regarding these findings and requests that all comments be accompanied with detailed supporting data.

The FAA has, therefore, determined that this proposed rule would not qualify as a “significant regulatory action” as defined in section 3(f) of Executive Order 12866, and is not “significant” as defined in DOT's Regulatory Policies and Procedures.

#### B. Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (Public Law 96-354) (RFA) establishes “as a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration. The RFA covers a wide-range of small entities, including small businesses, not-for-profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a rule will have a significant economic impact on a substantial number of small entities. If the agency determines that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA. However, if an agency determines that a rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the RFA provides that the head of the agency may so certify and a regulatory flexibility analysis is not required.

The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

This proposed rule would not impose any additional costs on operators that operate under parts 121, 125, or 135. Consequently, the FAA certifies that the proposed rule would not have a significant economic impact on a substantial number of small entities.

#### C. International Trade Impact Assessment

The Trade Agreements Act of 1979 (Public Law 96-39), as amended by the Uruguay Round Agreements Act (Public Law 103-465), prohibits Federal agencies from establishing standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Pursuant to these Acts, the establishment of standards is not considered an unnecessary obstacle to the foreign commerce of the United States, so long as the standard has a legitimate domestic objective, such the protection of safety, and does not operate in a manner that excludes imports that meet this objective. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. The FAA has assessed the potential effect of this proposed rule and determined that it would have only a domestic impact and therefore no effect on international trade.

#### D. Unfunded Mandates Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in an expenditure of \$100 million or more (in 1995 dollars) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a "significant

regulatory action." The FAA currently uses an inflation-adjusted value of \$143.1 million in lieu of \$100 million. This proposed rule would not contain such a mandate; therefore, the requirements of Title II of the Act do not apply.

#### E. Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires that the FAA consider the impact of paperwork and other information collection burdens imposed on the public. The FAA has determined that there would be no new requirement for information collection associated with this proposed rule.

#### F. International Compatibility

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to conform to International Civil Aviation Organization (ICAO) Standards and Recommended Practices to the maximum extent practicable. The FAA has determined that there are no ICAO Standards and Recommended Practices that correspond to these proposed regulations.

#### G. Environmental Analysis

FAA Order 1050.1E identifies FAA actions that are categorically excluded from preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act in the absence of extraordinary circumstances.

The FAA has determined this rulemaking action qualifies for the categorical exclusion identified in paragraph 312f and involves no extraordinary circumstances.

### **V. Executive Order Determinations**

#### A. Executive Order 13132, Federalism

The FAA has analyzed this proposed rule under the principles and criteria of Executive Order 13132, Federalism. The agency has determined that this action would not have a substantial direct effect on the States, or the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government, and, therefore, would not have Federalism implications.

B. Executive Order 13211, Regulations that Significantly Affect Energy Supply, Distribution, or Use

The FAA analyzed this proposed rule under Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (May 18, 2001). The agency has determined that it would not be a “significant energy action” under the executive order and would not be likely to have a significant adverse effect on the supply, distribution, or use of energy.

**VI. Additional Information**

A. Comments Invited

The FAA invites interested persons to participate in this rulemaking by submitting written comments, data, or views. The agency also invites comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document.

The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. To ensure the docket does not contain duplicate comments, commenters should send only one copy of written comments, or if comments are filed electronically, commenters should submit only one time.

The FAA will file in the docket all comments it receives, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. Before acting on this proposal, the FAA will consider all comments it receives on or before the closing date for comments. The FAA will consider comments filed after the comment period has closed if it is possible to do so without incurring expense or delay. The agency may change this proposal in light of the comments it receives.

#### B. Availability of Rulemaking Documents

An electronic copy of rulemaking documents may be obtained from the Internet by—

1. Searching the Federal eRulemaking Portal (<http://www.regulations.gov>);
2. Visiting the FAA's Regulations and Policies web page at [http://www.faa.gov/regulations\\_policies](http://www.faa.gov/regulations_policies) or
3. Accessing the Government Printing Office's web page at <http://www.gpo.gov/fdsys/>.

Copies may also be obtained by sending a request to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue SW., Washington, DC 20591, or by calling (202) 267-9680. Commenters must identify the docket or notice number of this rulemaking.

All documents the FAA considered in developing this proposed rule, including economic analyses and technical reports, may be accessed from the Internet through the Federal eRulemaking Portal referenced in item (1) above.

#### **List of Subjects**

14 CFR Part 121

Air Carriers, Aircraft, Airmen, Aviation Safety, Charter Flights, Safety, Transportation.

14 CFR Part 125

Aircraft, Airmen, Aviation Safety.

14 CFR Part 135

Air taxis, Aircraft, Airmen, Aviation Safety.

**The Proposed Amendment**

In consideration of the foregoing, the Federal Aviation Administration proposes to amend chapter I of title 14, Code of Federal Regulations as follows:

**PART 121--OPERATING REQUIREMENTS: DOMESTIC, FLAG, AND SUPPLEMENTAL OPERATIONS**

1. The authority citation for part 121 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 40119, 41706, 44101, 44701–44702, 44705, 44709–44711, 44713, 44716–44717, 44722, 46105.

2. Revise § 121.579 to read as follows:

**§ 121.579 Minimum altitudes for use of autopilot.**

(a) *Definitions.* For purpose of this section:

(1) Altitudes for takeoff/initial climb and go-around/missed approach are defined as above the airport elevation.

(2) Altitudes for enroute operations are defined as above terrain elevation.

(3) Altitudes for approach are defined as above the touchdown zone elevation (TDZE) unless the altitude is specifically in reference to DA(H) or MDA in which case the altitude is defined by reference to the DA(H) or MDA itself.

(4) Altitudes specified as above airport elevation, runway TDZE or terrain are considered to be above ground level (AGL).

(b) *Takeoff and initial climb.*

No person may use an autopilot for takeoff or initial climb below the higher of 500 feet or an altitude that is no lower than twice the altitude loss specified in the Airplane Flight Manual (AFM), except as follows:

(1) at a minimum engagement altitude specified in the AFM, or

(2) at an altitude specified by the Administrator, whichever is greater.

(c) *Enroute.*

No person may use an autopilot enroute, including climb and descent, below the following:

(1) 500 feet,

(2) at an altitude that is no lower than twice the altitude loss specified in the AFM for an autopilot malfunction in cruise conditions, or

(3) at an altitude specified by the Administrator, whichever is greater.

(d) *Approach.*

No person may use an autopilot at an altitude lower than 50 feet below the DA(H) or MDA for the instrument procedure being flown, except as follows:

(1) For autopilots with an AFM specified altitude loss for approach operations, the greater of:

(i) an altitude no lower than twice the specified altitude loss,

(ii) an altitude no lower than 50 feet higher than the altitude loss specified in the AFM when reported weather conditions are less than the basic VFR weather conditions in § 91.155 of this chapter, suitable visual references specified in § 91.175 of this chapter have been established on the instrument approach procedure, and the autopilot is coupled and receiving both lateral and vertical path references,

(iii) an altitude no lower than the higher of the altitude loss specified in the AFM or 50 feet above the TDZE when reported weather conditions are equal to or better than the basic VFR weather conditions in § 91.155 of this chapter, and the autopilot is coupled and receiving both lateral and vertical path references, or

(iv) an altitude specified by the Administrator.

(2) For autopilots with AFM specified approach altitude limitations, the greater of:

(i) the minimum use altitude specified for the coupled approach mode selected,

(ii) 50 feet, or

(iii) an altitude specified by Administrator.

(3) For autopilots with an AFM specified negligible or zero altitude loss for an autopilot approach mode malfunction, the greater of:

(i) 50 feet, or

(ii) an altitude specified by Administrator.

(4) If executing an autopilot coupled go-around or missed approach, using a certificated and functioning autopilot in accordance with paragraph (e) in this section.

(e) *Go-Around/Missed Approach.*

No person may engage an autopilot during a go-around or missed approach below the minimum engagement altitude specified for takeoff and initial climb in paragraph (b) in

this section. An autopilot minimum use altitude does not apply to a go-around/missed approach initiated with an engaged autopilot. Performing a go-around or missed approach with an engaged autopilot must not adversely affect safe obstacle clearance.

(f) *Landing.*

Notwithstanding paragraph (d) of this section, autopilot minimum use altitudes do not apply to autopilot operations when an approved automatic landing system mode is being used for landing. Automatic landing systems must be authorized in an operations specification issued to the operator.

**PART 125—CERTIFICATION AND OPERATIONS: AIRPLANES HAVING A SEATING CAPACITY OF 20 OR MORE PASSENGERS OR A MAXIMUM PAYLOAD CAPACITY OF 6,000 POUNDS OR MORE; AND RULES GOVERNING PERSONS ON BOARD SUCH AIRCRAFT**

3. The authority citation for part 125 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701–44702, 44705, 44710–44711, 44713, 44716–44717, 44722.

4. Revise § 125.329 to read as follows:

**§ 125.329 Minimum altitudes for use of autopilot.**

(a) *Definitions.* For purpose of this section:

(1) Altitudes for takeoff/initial climb and go-around/missed approach are defined as above the airport elevation.

(2) Altitudes for enroute operations are defined as above terrain elevation.

(3) Altitudes for approach are defined as above the touchdown zone elevation (TDZE) unless the altitude is specifically in reference to DA(H) or MDA in which case the altitude is defined by reference to the DA(H) or MDA itself.

(4) Altitudes specified as above airport elevation, runway TDZE or terrain are considered to be above ground level (AGL).

(b) *Takeoff and initial climb.*

No person may use an autopilot for takeoff or initial climb below the higher of 500 feet or an altitude that is no lower than twice the altitude loss specified in the Airplane Flight Manual (AFM), except as follows:

(1) at a minimum engagement altitude specified in the AFM, or

(2) at an altitude specified by the Administrator, whichever is greater.

(c) *Enroute.*

No person may use an autopilot enroute, including climb and descent, below the following:

(1) 500 feet,

(2) at an altitude that is no lower than twice the altitude loss specified in the AFM for an autopilot malfunction in cruise conditions, or

(3) at an altitude specified by the Administrator, whichever is greater.

(d) *Approach.*

No person may use an autopilot at an altitude lower than 50 feet below the DA(H) or MDA for the instrument procedure being flown, except as follows:

(1) For autopilots with an AFM specified altitude loss for approach operations, the greater of:

(i) an altitude no lower than twice the specified altitude loss,

(ii) an altitude no lower than 50 feet higher than the altitude loss specified in the AFM when reported weather conditions are less than the basic VFR weather conditions in § 91.155 of this chapter, suitable visual references specified in § 91.175 of this chapter have been established on the instrument approach procedure, and the autopilot is coupled and receiving both lateral and vertical path references,

(iii) an altitude no lower than the higher of the altitude loss specified in the AFM or 50 feet above the TDZE when reported weather conditions are equal to or better than the basic VFR weather conditions in § 91.155 of this chapter, and the autopilot is coupled and receiving both lateral and vertical path references, or

(iv) an altitude specified by the Administrator.

(2) For autopilots with AFM specified approach altitude limitations, the greater of:

(i) the minimum use altitude specified for the coupled approach mode selected,

(ii) 50 feet, or

(iii) an altitude specified by Administrator.

(3) For autopilots with an AFM specified negligible or zero altitude loss for an autopilot approach mode malfunction, the greater of:

(i) 50 feet, or

(ii) an altitude specified by Administrator.

(4) If executing an autopilot coupled go-around or missed approach, using a certificated and functioning autopilot in accordance with paragraph (e) in this section.

(e) *Go-Around/Missed Approach.*

No person may engage an autopilot during a go-around or missed approach below the minimum engagement altitude specified for takeoff and initial climb in paragraph (b) in

this section. An autopilot minimum use altitude does not apply to a go-around/missed approach initiated with an engaged autopilot. Performing a go-around or missed approach with an engaged autopilot must not adversely affect safe obstacle clearance.

(f) *Landing.*

Notwithstanding paragraph (d) of this section, autopilot minimum use altitudes do not apply to autopilot operations when an approved automatic landing system mode is being used for landing. Automatic landing systems must be authorized in an operations specification issued to the operator.

**PART 135—OPERATING REQUIREMENTS: COMMUTER AND ON DEMAND OPERATIONS AND RULE GOVERNING PERSONS ON BOARD SUCH AIRCRAFT**

5. The authority citation for part 135 continues to read as follows:

Authority: 49 U.S.C. 106(g), 41706, 40113, 44701–44702, 44705, 44709, 44711–44713, 44715–44717, 44722, 45101–45105.

6. Revise § 135.93 to read as follows:

**§ 135.93 Minimum altitudes for use of autopilot.**

(a) *Definitions.* For purpose of this section:

(1) Altitudes for takeoff/initial climb and go-around/missed approach are defined as above the airport elevation.

(2) Altitudes for enroute operations are defined as above terrain elevation.

(3) Altitudes for approach are defined as above the touchdown zone elevation (TDZE) unless the altitude is specifically in reference to DA(H) or MDA in which case the altitude is defined by reference to the DA(H) or MDA itself.

(4) Altitudes specified as above airport elevation, runway TDZE or terrain are considered to be above ground level (AGL).

*(b) Takeoff and initial climb.*

No person may use an autopilot for takeoff or initial climb below the higher of 500 feet or an altitude that is no lower than twice the altitude loss specified in the Airplane Flight Manual (AFM), except as follows:

- (1) at a minimum engagement altitude specified in the AFM, or
- (2) at an altitude specified by the Administrator, whichever is greater.

*(c) Enroute.*

No person may use an autopilot enroute, including climb and descent, below the following:

- (1) 500 feet,
- (2) at an altitude that is no lower than twice the altitude loss specified in the AFM for an autopilot malfunction in cruise conditions, or
- (3) at an altitude specified by the Administrator, whichever is greater.

*(d) Approach.*

No person may use an autopilot at an altitude lower than 50 feet below the DA(H) or MDA for the instrument procedure being flown, except as follows:

- (1) For autopilots with an AFM specified altitude loss for approach operations, the greater of:
  - (i) an altitude no lower than twice the specified altitude loss,
  - (ii) an altitude no lower than 50 feet higher than the altitude loss specified in the AFM when reported weather conditions are less than the basic VFR weather conditions in

§ 91.155 of this chapter, suitable visual references specified in § 91.175 of this chapter have been established on the instrument approach procedure, and the autopilot is coupled and receiving both lateral and vertical path references,

(iii) an altitude no lower than the higher of the altitude loss specified in the AFM or 50 feet above the TDZE when reported weather conditions are equal to or better than the basic VFR weather conditions in § 91.155 of this chapter, and the autopilot is coupled and receiving both lateral and vertical path references, or

(iv) an altitude specified by the Administrator.

(2) For autopilots with AFM specified approach altitude limitations, the greater of:

(i) the minimum use altitude specified for the coupled approach mode selected,

(ii) 50 feet, or

(iii) an altitude specified by Administrator.

(3) For autopilots with an AFM specified negligible or zero altitude loss for an autopilot approach mode malfunction, the greater of:

(i) 50 feet, or

(ii) an altitude specified by Administrator.

(4) If executing an autopilot coupled go-around or missed approach, using a certificated and functioning autopilot in accordance with paragraph (e) in this section.

(e) *Go-Around/Missed Approach.*

No person may engage an autopilot during a go-around or missed approach below the minimum engagement altitude specified for takeoff and initial climb in paragraph (b) in this section. An autopilot minimum use altitude does not apply to a go-around/missed

approach initiated with an engaged autopilot. Performing a go-around or missed approach with an engaged autopilot must not adversely affect safe obstacle clearance.

(f) *Landing.*

Notwithstanding paragraph (d) of this section, autopilot minimum use altitudes do not apply to autopilot operations when an approved automatic landing system mode is being used for landing. Automatic landing systems must be authorized in an operations specification issued to the operator.

(g) This section does not apply to operations conducted in rotorcraft.

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John M. Allen

Director, Flight Standards Service

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