



[4910-13]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 91**

[Docket No.: FAA-2017-0782; Amdt. No. 91-354]

**RIN 2120-AK87**

**Use of Automatic Dependent Surveillance - Broadcast (ADS-B) Out in Support of Reduced Vertical Separation Minimum (RVSM) Operations**

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

**ACTION:** Final rule.

**SUMMARY:** This action revises the FAA's requirements for application to operate in RVSM airspace. The amendment eliminates the requirement for operators to apply for an RVSM authorization when their aircraft are equipped with qualified ADS-B Out systems and meet specific altitude keeping equipment requirements for operations in RVSM airspace. This action recognizes the enhancements in aircraft monitoring resulting from the use of ADS-B Out systems and responds to requests from operators to eliminate the burden and expense of the current RVSM application process for aircraft equipped with qualified ADS-B Out systems.

**DATES:** Effective [Insert date 30 days after date of publication in the Federal Register].

**ADDRESSES:** For information on where to obtain copies of rulemaking documents and other information related to this final rule, see "How To Obtain Additional Information" in the **SUPPLEMENTARY INFORMATION** section of this document.

**FOR FURTHER INFORMATION CONTACT:** For technical questions concerning this action, contact Madison Walton, Aviation Safety Inspector, Flight Technologies and Procedures

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## **SUPPLEMENTARY INFORMATION:**

### **Authority for this Rulemaking**

The FAA's authority to issue rules with respect to aviation safety is found in Title 49, United States Code (49 U.S.C.). Sections 106(f), 40113(a), and 44701(a) authorize the FAA Administrator to prescribe regulations necessary for aviation safety. Under Section 40103(b), the FAA is charged with prescribing regulations to enhance the efficiency of the national airspace. This rulemaking is within the scope of these authorities as it removes regulatory requirements that the FAA no longer finds necessary for safe operations in RVSM airspace and establishes requirements for the use of qualified ADS-B Out systems to facilitate operations in that airspace.

### **I. Overview of Final Rule**

This action amends Appendix G of part 91 of Title 14 of the Code of Federal Regulations (14 CFR) to permit an operator of an aircraft equipped with a qualified ADS-B Out system meeting altitude keeping equipment performance requirements for operations in RVSM airspace to operate in that airspace without requiring a specific authorization. Under this action, the FAA considers a qualified ADS-B Out system to be one that meets the requirements of 14 CFR 91.227. The FAA is taking this action based on the technological advances provided by ADS-B Out systems. As a result of these advances, detailed applications and specific authorizations for operators of these aircraft to conduct operations in RVSM airspace are no

longer necessary. The amendment also removes the detailed designations of airspace where revised RVSM may be applied that were previously found in Appendix G of part 91.

## **II. Background**

Vertical separation standards establish the minimum vertical distance between aircraft routes in the National Airspace System. In the early 1970's, increasing air-traffic volume and fuel costs sparked an interest in reducing vertical separation standards for aircraft operating above Flight Level (FL) 290. At the time, the FAA required aircraft operating above FL 290 to maintain a minimum of 2,000 feet of vertical separation between routes. Use of these high-altitude routes was desirable because the diminished atmospheric drag at high altitudes results in a corresponding increase in aircraft fuel efficiency. Operators sought, and continue to seek, not only the most direct routes, but also the most efficient altitudes for their aircraft. Increased demand for these high-altitude routes, however, has resulted in greater aircraft congestion in this airspace.

In 1973, the Air Transport Association of America petitioned the FAA to reduce the vertical separation of high altitude routes from 2,000 feet to 1,000 feet. The FAA denied the petition in 1977, in part because the technology to meet these more rigorous separation standards was neither generally available nor proven. Deficiencies included insufficient aircraft altitude-keeping standards, lack of maintenance and operational standards, and limited altitude correction technology.

In mid-1981, the FAA initiated the Vertical Studies Program. This program, in conjunction with RTCA (formerly the Radio Technical Commission for Aeronautics) Special Committee (SC)-150 and the International Civil Aviation Organization (ICAO) Review of General Concept of Separation Panel, determined:

- RVSM is “technically feasible without imposing unreasonably demanding technical requirements on the equipment.”
- RVSM could provide “significant benefits in terms of economy and en-route airspace capacity.”
- Implementation of RVSM would require “sound operational judgment supported by an assessment of system performance based on: aircraft altitude-keeping capability, operational considerations, system performance monitoring, and risk assessment.”

Following these determinations, the FAA began a two-phase implementation process for RVSM operations for aircraft registered in the United States. During the first phase in 1997, the FAA added § 91.706 (Operations within airspace designed as RVSM Airspace) and Appendix G (Operations in RVSM Airspace) of part 91 (62 FR 17487; Apr. 9, 1997). Section 91.706 permits operators of U.S.-registered aircraft to operate in RVSM airspace outside of the United States (U.S.) in accordance with the provisions of Appendix G. Appendix G contains a set of operational, design, maintenance, and other standards applicable to operators seeking to operate in RVSM airspace. It specifies a detailed application process that requires an operator to provide evidence that the operator’s aircraft design satisfies RVSM performance requirements and the operator has policies and procedures for the safe conduct of RVSM operations. Until recently, it also required that the operator have a specific program for the maintenance of RVSM systems and equipment. The FAA reviews the applications and grants authorizations to operate in RVSM airspace after finding that the applicable requirements are met.

The second phase of RVSM implementation occurred in October 2003, with a second RVSM-related rulemaking action (68 FR 61304; Oct. 27, 2003). This rule introduced RVSM airspace in the U.S. and used the same authorization process previously established under

Appendix G of part 91. As established in 2003, the FAA's RVSM program allows for 1,000 feet of vertical separation for aircraft between FL 290 and FL 410. Before the 2003 final rule, air traffic controllers could only assign aircraft operating under Instrument Flight Rules (IFR) flying at FL 290 and above to FL 290, 310, 330, 350, 370, 390, and 410 since the existing vertical separation standard was 2,000 feet. After the rule changes went into effect, IFR aircraft could also fly at FL 300, 320, 340, 360, 380, and 400—nearly doubling capacity within this particular segment of airspace.

The FAA also implemented a performance-monitoring program to support implementation of RVSM. This program included Global Positioning System based height-keeping monitoring units capable of being deployed onboard aircraft during individual RVSM flights. Later, in 2005, the FAA deployed the first of five passive ground-based aircraft geometric height measurement element sites in the continental U.S. to conduct height-keeping performance monitoring of aircraft passing over each site. Other civil aviation authorities throughout the world have also developed similar height monitoring sites.

In 2008, the FAA reviewed its RVSM program and operator authorization policies. At that time, there were more than 7,000 active RVSM authorizations, covering in excess of 15,000 U.S.-registered aircraft. The FAA's evaluation found the existing processes ensured compliance with the RVSM operating requirements. At the same time however, FAA representatives began meeting with the National Business Aviation Association (NBAA) to develop ways to streamline the RVSM application process to lower the burden on operators to obtain RVSM authorizations and reduce the FAA's workload associated with processing and granting these authorizations. The parties formed the RVSM Process Enhancement Team (PET) within the Performance Based Aviation Rulemaking Committee. The PET submitted its final recommendations to the FAA in

2013. As a result, the FAA revised existing policies and guidance to facilitate more efficient processing of requests to change existing authorizations and created a job aid to assist inspectors in standardizing reviews of operator applications.

The FAA also completed rulemaking in 2016 to further reduce the burden on applicants by eliminating the requirement that RVSM applicants include an approved RVSM maintenance program as part of an application for an RVSM authorization (81 FR 47009, July 20, 2016).

RVSM technology has matured and most aircraft manufactured today that are capable of operating in RVSM airspace are delivered from the manufacturer as RVSM compliant. RVSM airspace has been implemented worldwide, familiarity with operational policy and procedures has significantly increased, and the vast majority of the RVSM capable fleet demonstrates excellent altimetry system performance. Additionally, the increasing equipage of aircraft with ADS-B Out systems makes the current process of obtaining RVSM authorizations for operation of these aircraft in RVSM airspace unnecessary, as ADS-B Out enables continual monitoring of aircraft height-keeping performance and rapid notification of altimetry system error (ASE).

Currently operators are required to be issued a specific RVSM authorization by the FAA's Flight Standards Service prior to operating in RVSM airspace. Until an operator's application is processed and the authorization issued, the operator cannot operate in RVSM designated airspace, Flight Levels (FL) 290 – 410 inclusive. During the application processing period, the aircraft may only be operated at FL 280 and below. Aircraft operations at lower altitudes are less efficient due to their higher fuel burn rates and lower true airspeeds.

#### A. Summary of the Notice of Proposed Rulemaking (NPRM)

In August 2017, the FAA issued an NPRM (82 FR 36697; August 7, 2017) that proposed to amend the FAA's application requirements to operate in RVSM airspace. In that NPRM, the FAA proposed to amend Appendix G of 14 CFR part 91 to:

- Add a new Section 9 (Aircraft Equipped with Automatic Dependent Surveillance-Broadcast Out) to authorize operators of aircraft, equipped with qualified ADS-B Out systems (i.e., systems that meet the requirements of § 91.227) that can be monitored by the FAA to conduct RVSM operations without submitting an application for an authorization to operate in RVSM airspace.
- Revise Section 8 (Airspace Designation) acknowledging RVSM is now applied worldwide and remove the detailed RVSM airspace designations from that section.

The FAA also proposed additional conforming amendments to Appendix G of part 91 facilitating the addition of the approval requirements specified in new Section 9 for ADS-B Out equipped aircraft. These proposed conforming amendments would:

- Revise Section 1 (Definitions) recognizing that RVSM is no longer a new concept and that RVSM operations have become standard between FL 290 and FL 410.
- Revise Section 2 (Aircraft Approval) and Section 3 (Operator Authorization) to recognize aircraft operators may either use the current aircraft approval process specified in Section 2 and the operator authorization process specified in Section 3, or the authorization process in new Section 9 for aircraft equipped with qualified ADS-B Out systems to obtain authorization to conduct RVSM operations.
- Revise Section 3 (Operator Authorization) to permit an operator to be authorized to conduct flight in airspace where RVSM is applied under the provisions of this section, as is currently permitted, or under the provisions of new Section 9. The section would also

be revised to better express the intent of the rule by stating that “each pilot has knowledge of RVSM requirements, policies, and procedures sufficient to conduct operations in RVSM airspace.”

- Revise Section 4 (RVSM Operations) to require that pilots of aircraft of operators who have been authorized to conduct RVSM operations in accordance with proposed Section 9 have knowledge of the requirements, policies, and procedures sufficient for the conduct operations in RVSM airspace.
- Revise Section 5 (Deviation Authority Approval) to eliminate the specific references to Section 3 since the Administrator may authorize deviations from the requirements in §§ 91.180 and 91.706 for a specific flight in RVSM airspace for operators who may not meet the provisions of current Section 3 or proposed Section 9.
- Revise Section 7 (Removal or Amendment of Authority) to eliminate specific references to the revocation or restriction of RVSM authorizations and letters of authorization and replace those provisions with a more general provision stating that the Administrator may prohibit or restrict operation in RVSM airspace if an operator fails to comply with certain specified provisions.

#### B. General Overview of Comments

The comment period for the NPRM closed on September 6, 2017. The FAA received 16 comments, mostly from individual aircraft operators. Other commenters included the National Business Aviation Association (NBAA), the Aircraft Owners and Pilots Association (AOPA), and the General Aviation Manufacturers Association (GAMA). All 16 comments supported the rule change with 10 of the individual commenters supporting the rule’s benefits of reducing the burden to operators. Based on the comments received, the FAA adopts the amendments as

proposed with only minor non-substantive editorial changes to facilitate publication in the Code of Federal Regulations.

### **III. Discussion of Public Comments and Final Rule**

#### Comments Regarding the Proposal

All the commenters supported the proposal. The majority of the commenters, including NBAA, AOPA, and GAMA, stated that the reduction in regulatory requirements for operator authorization would be cost beneficial for operators by:

- Reducing the burden and expense of having to make application for authorization to operate in RVSM airspace; and
- Allowing operations at RVSM fuel-efficient altitudes sooner without degrading safety.

NBAA commented the new rule is a logical extension of the work the FAA has been doing to further streamline the [RVSM authorization] process while maintaining the highest levels of safety. The FAA notes that this final rule eliminates the requirement to make application for RVSM authorization if an operator chooses to leverage the technology gains obtained in ADS-B Out equipage, in accordance with §§ 91.180 and 91.706, while continuing to require that operators meet the equipment and performance standards specified in Appendix G of part 91. The rule provides operators with an additional means to obtain authorization to operate in RVSM airspace but does not change the height keeping requirements for operations in that airspace. The use of ADS-B Out allows the FAA to continually and more accurately monitor an aircraft's height keeping performance in RVSM airspace thereby providing the agency with the ability to more rapidly mitigate the risks posed by poor performing aircraft. The FAA believes that these changes not only reduce operator and FAA workload and expense, but also accomplish these

objectives with no additional risk or impact on the level of safety provided by the FAA's current RVSM authorization process.

AOPA commented that the proposed modifications to part 91 will result in significant cost and time savings for general aviation and the FAA, while ensuring no degradation to safety. The FAA has determined the current fleet of RVSM approved aircraft consistently meets FAA established safety standards for operations in RVSM airspace. The FAA notes that aircraft equipped with qualified ADS-B Out systems may conduct operations in airspace where the FAA has ADS-B coverage sufficient to confirm RVSM height-keeping performance, under the provisions of new Section 9 of Appendix G, immediately upon the effective date of this rule. However, an operator may still operate with an authorization issued under the provisions of Section 3 of Appendix G if its aircraft is not equipped with a qualified ADS-B Out system. The FAA also notes that if a foreign country requires a specific authorization to operate in RVSM airspace, as specified in ICAO Annex 6, an operator may need to seek authorization under the provisions of Section 3, even if it meets the provisions of Section 9.

GAMA supported the proposed changes and commented that the rule further builds on prior discussions between the FAA and industry to streamline and reduce the burden of the operational authorization process for general aviation operators. GAMA stated that it helps provide additional NextGen-driven benefits to the industry.

NBAA commented that operating in RVSM airspace has become very common and an integral part of operating aircraft in their most efficient state. The FAA agrees that adopting the proposed rule changes will increase safety in RVSM airspace where ADS-B monitoring is available and reduce delays in receiving approval for operations in RVSM airspace.

There were 10 additional individual commenters who expressed strong support for this action with similar statements recognizing the “cumbersome and costly” RVSM authorization process and that the core benefits of compressing high-level airspace have been offset by long delays in the FAA review and authorization process.

The FAA agrees with the commenters that the general aviation community will obtain significant benefits from this action, including that the rule takes an important step in removing an approval process that is no longer justifiable as pilots equip with advanced NextGen technology.

#### Other comments

One commenter stated that the proposal was “a good start” but did not go far enough and there should be no RVSM authorization at all. In the NPRM, the FAA only proposed to remove the requirement to submit an application for RVSM authorization if an aircraft is equipped with a qualified ADS-B Out system. The FAA did not propose to eliminate the authorization requirement in §§ 91.180 or 91.706 and considers the commenter’s recommendation outside the scope of this rulemaking. The FAA notes that ICAO Annex 6 continues to require that an airplane used to conduct operations in RVSM airspace be specifically authorized to conduct those operations by the State of the operator or State of registry, as applicable. The annex further specifies that prior to issuing the authorization, the issuing State must be satisfied that the vertical performance of the airplane meets applicable height-keeping requirements and that the operator has instituted appropriate flightcrew operating procedures and procedures for continued airworthiness of the airplane.

One commenter was concerned about eliminating the authorization due to the potential for transponder failure and felt that the FAA should conduct further review of ADS-B and

transponder failure issues. The FAA notes that the ADS-B Out equipment requirement in Section 9(a)(5) is necessary for aircraft height-keeping performance monitoring and that failure of an aircraft's transponder does not hinder the ability of the aircraft to maintain the requisite aircraft height-keeping capability in RVSM airspace. Transponder failure procedures in RVSM airspace are addressed in FAA and ICAO guidance material.

One commenter stated the use of ADS-B technology will deconflict aircraft within RVSM airspace without the need for expensive altimetry instruments. The FAA notes that for an aircraft to be eligible for operations in RVSM airspace it must meet strict height-keeping performance standards. ADS-B Out provides information used to determine an aircraft's ASE. ADS-B alone does not provide operators with the requisite height-keeping capability to conduct operations in RVSM airspace safely. Accordingly, the installation of a qualified ADS-B Out system in an aircraft that does not have the altitude-keeping capability necessary to meet RVSM performance requirements would not permit that aircraft to operate in RVSM airspace.

#### Recent Regulatory Actions

As discussed in the "Background" section of this document, RVSM was implemented regionally in a phased approach. Section 8 (Airspace Designation) of Appendix G was initially designed to be updated whenever regions added RVSM airspace. The inability to update these designations rapidly caused discrepancies between the airspace listed in Section 8 of Appendix G and the airspace in which RVSM had been applied. Today, however, RVSM has been established between FL 290 and FL 410 in all flight information regions and requirements have been harmonized throughout ICAO member States.

The FAA recently amended the airspace designations in Section 8 of Appendix G by only revising the name of the North Atlantic airspace (82 FR 39660; Aug. 22, 2017). Since the action

in this rule was pending at the time, it would have been inconsistent for the FAA to make all the other changes in that rule while leaving out the change to Section 8 of Appendix G in anticipation of the changes made by this rule. Accordingly, there is no longer a need to update the airspace designations listed in Section 8. The amendment to this section acknowledges RVSM is now applied worldwide and removes the detailed RVSM airspace designations from that section, as proposed.

#### C. Changes from the NPRM

The FAA has made no changes to the proposal as set forth in the NPRM other than minor non-substantive editorial changes to facilitate publication in the Code of Federal Regulations.

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

#### A. Regulatory Evaluation

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 and Executive Order 13563 direct 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 (Pub. L. 96-354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (Pub. L. 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 (Pub. L. 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; current value is \$155 million). This portion of the preamble summarizes the FAA's analysis of the economic impacts of this final 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.

In conducting these analyses, the FAA has determined that this final rule: (1) has benefits that justify its costs, (2) is not an economically "significant regulatory action" as defined in Section 3(f) of Executive Order 12866, (3) is "nonsignificant" as defined in DOT's Regulatory Policies and Procedures; (4) will not have a significant economic impact on small entities; (5) will not create unnecessary obstacles to the foreign commerce of the United States; and (6) will not impose an unfunded mandate on State, Local, or Tribal governments, or on the private sector by exceeding the threshold identified above. These analyses are summarized below.

i. Who is potentially affected by this rule?

All operators intending to conduct operations between FL 290 and FL 410 (RVSM designated Airspace) and have 1,000 feet vertical separation applied. This applies to operations conducted under parts 91, 121, 125, and 135.

ii. Assumptions

- Present value estimates based on OMB guidance using a 7 percent discount rate.
- The benefits begin to accrue in 2019.
- The analysis period is 5 years from 2019 to 2023.

iii. Benefits and cost savings of this rule

The final rule will permit an operator of an aircraft meeting equipment requirements for operations in RVSM airspace and equipped with a qualified ADS-B Out system to operate in

RVSM airspace without requiring application for a specific authorization. This rulemaking will eliminate this application requirement, thereby reducing both operators' costs and FAA workload, while maintaining the existing level of safety. The biggest savings comes not from the paperwork savings but from fuel savings. Currently, operators without RVSM approval must operate their airplanes at lower altitudes.

Total savings during the first 5 years of the rule's implementation will be approximately \$34.0 million or \$27.5 million present value at 7 percent, with annualized savings of \$6.7 million.

#### **B. Final Regulatory Flexibility Determination**

The Regulatory Flexibility Act of 1980 (Pub. L. 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 has a significant economic impact on a substantial number of small entities. If the agency determines that it does, 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. The FAA estimates that this rulemaking saves each affected small entity operating aircraft equipped with qualified ADS-B Out systems under part 91 and part 135 \$1,630 from not having to apply for an RVSM authorization and from reduced fuel cost associated with not being restricted from RVSM operations while the authorization is processed. The total relief of \$1,630 for each part 91 and part 135 operator seeking authorization for aircraft equipped with ADS-B Out is the sum of the estimated \$214 per application preparation relief, plus the per aircraft fuel savings estimate of \$1,416. The FAA then compared this cost saving with a weighted average aircraft value of representative aircraft potentially be affected by this rule (See following table).

**Weighted Average Aircraft Value**

Class	Most Common Type	Count in US MASPS*	Retail Value**	Weighted Values
Very Light Jet	Cessna Citation Mustang	266	\$3,459,900	\$920,333,400
Light Jet	Cessna Citation CJ3	328	\$6,900,000	\$2,263,200,000
Mid-Size Jet	Cessna Citation Excel/XLS	588	\$5,800,000	\$3,410,400,000
Super Mid-Size Jet	Cessna Citation Sovereign	290	\$18,093,350	\$5,247,071,500
Large Jet	Gulfstream IV	620	\$7,200,000	\$4,464,000,000
		2,092		\$16,305,004,900
		<b>Weighted Average:</b>	<b>\$7,793,979</b>	
*Source for aircraft counts: US Minimum Aircraft System Performance Specification - 18 Aug 2016				
**Source for average retail value: Aircraft Bluebook, Spring 2016 Vol. 16-1				

Owners of new turbojet or turboprop airplanes receive a benefit of \$1,630 per new airplane. For new turbojet or turboprop airplanes whose value exceeds \$3 million, the cost savings of less than \$2,000 is not economically significant.

If an agency determines that a rulemaking will not result in a significant economic impact on a substantial number of small entities, the head of the agency may so certify under Section 605(b) of the RFA. Therefore, as provided in Section 605(b), the head of the FAA certifies that this rulemaking will not result in a significant economic impact on a substantial number of small entities.

### C. International Trade Impact Assessment

The Trade Agreements Act of 1979 (Pub. L. 96-39), as amended by the Uruguay Round Agreements Act (Pub. L. 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 as 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 rule and determined that it has the same impact on domestic and international entities and thus has a neutral trade impact.

### D. Unfunded Mandates Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (Pub. L. 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 1 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 \$155 million in lieu of \$100 million. This rule does 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. According to the 1995 amendments to the Paperwork Reduction Act (5 CFR 1320.8(b)(2)(vi)),

an agency may not collect or sponsor the collection of information, nor may it impose an information collection requirement unless it displays a currently valid Office of Management and Budget (OMB) control number.

As described in the regulatory evaluation, this rule will relieve the existing RVSM information collection burden for certain operators. Under currently approved information requirements (OMB 2120-0679), operators seeking approval to conduct RVSM operations must submit application to the FAA for authorization. This rule change will eliminate the application requirement for operators choosing to equip their aircraft with qualified ADS-B Out systems. As required by the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)), the FAA will submit information collection amendments to OMB for its review after publication of this final rule. Notice of OMB approval of this revised information collection will be published in the Federal Register.

#### F. International Compatibility and Cooperation

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 reviewed the corresponding ICAO Standards and Recommended Practices and has identified no differences with these regulations.

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

#### A. Executive Order 13771, Reducing Regulation and Controlling Regulatory Costs

This rule is an Executive Order 13771 titled “Reducing Regulation and Controlling Regulatory Costs,” deregulatory action. Details on the estimated costs savings of this rule can be found in the rule’s economic analysis.

## B. Executive Order 13132, Federalism

The FAA has analyzed this rule under the principles and criteria of Executive Order 13132, Federalism. The agency has determined that this action will 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, will not have Federalism implications.

## C. Executive Order 13211, Regulations That Significantly Affect Energy Supply, Distribution, or Use

The FAA analyzed this 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 will not be a “significant energy action” under the executive order and will not be likely to have a significant adverse effect on the supply, distribution, or use of energy.

## **VI. How To Obtain Additional Information**

### A. Rulemaking Documents

An electronic copy of a rulemaking document may be obtained by using the Internet — Search the Federal eRulemaking Portal (<http://www.regulations.gov>);

1. Visit the FAA’s Regulations and Policies Web page at [http://www.faa.gov/regulations\\_policies/](http://www.faa.gov/regulations_policies/) or
2. Access the Government Printing Office’s Web page at <http://www.gpo.gov/fdsys/>.

Copies may also be obtained by sending a request (identified by notice, amendment, or docket number of this rulemaking) to the Federal Aviation Administration, Office of

Rulemaking, ARM-1, 800 Independence Avenue SW., Washington, DC 20591, or by calling (202) 267-9677.

#### B. Comments Submitted to the Docket

Comments received may be viewed by going to <http://www.regulations.gov> and following the online instructions to search the docket number for this action. Anyone is able to search the electronic form of all comments received into any of the FAA's dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.).

#### C. Small Business Regulatory Enforcement Fairness Act

The Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 requires the FAA to comply with small entity requests for information or advice about compliance with statutes and regulations within its jurisdiction. A small entity with questions regarding this document, may contact its local FAA official, or the person listed under the FOR FURTHER INFORMATION CONTACT heading at the beginning of the preamble. To find out more about SBREFA on the Internet, visit [http://www.faa.gov/regulations\\_policies/rulemaking/sbre\\_act/](http://www.faa.gov/regulations_policies/rulemaking/sbre_act/).

#### **List of Subjects in 14 CFR Part 91**

Aircraft, Air traffic control, Aviation safety.

#### **The Amendment**

In consideration of the foregoing, the Federal Aviation Administration amends 14 CFR part 91 as follows:

#### **PART 91—GENERAL OPERATING AND FLIGHT RULES**

1. The authority citation for part 91 continues to read as follows:

**Authority:** 49 U.S.C. 106(f), 106(g), 1155, 40101, 40103, 40105, 40113, 40120, 44101, 44111, 44701, 44704, 44709, 44711, 44712, 44715, 44716, 44717, 44722, 46306, 46315, 46316,

46504, 46506-46507, 47122, 47508, 47528-47531, 47534, Pub. L. 114-190, 135 Stat. 615 (49 U.S.C. 44703 note); articles 12 and 29 of the Convention on International Civil Aviation (61 Stat. 1180), (126 Stat. 11)

2. Amend Appendix G to part 91:

- a. In Section 1 by revising the definition of Reduced Vertical Separation Minimum (RVSM) Airspace;
- b. In Section 2 by revising paragraph (a);
- c. In Section 3 by revising paragraphs (a), (b) introductory text, (c) introductory text, and (c)(2);
- d. In Section 4 by revising paragraphs (b)(1) and (2) and adding paragraph (b)(3);
- e. In Section 5 by revising the introductory text and paragraph (b);
- f. In Section 7 by revising the introductory text;
- g. By revising Section 8; and
- h. By adding Section 9.

The revisions and additions read as follows:

Appendix G to Part 91—Operations in Reduced Vertical Separation Minimum (RVSM) Airspace

Section 1. Definitions

Reduced Vertical Separation Minimum (RVSM) Airspace. Within RVSM airspace, air traffic control (ATC) separates aircraft by a minimum of 1,000 feet vertically between FL 290 and FL 410 inclusive. Air-traffic control notifies operators of RVSM airspace by providing route planning information.

\* \* \* \* \*

Section 2. Aircraft Approval

(a) Except as specified in Section 9 of this appendix, an operator may be authorized to conduct RVSM operations if the Administrator finds that its aircraft comply with this section.

\* \* \* \* \*

### Section 3. Operator Authorization

(a) Except as specified in Section 9 of this appendix, authority for an operator to conduct flight in airspace where RVSM is applied is issued in operations specifications, a Letter of Authorization, or management specifications issued under subpart K of this part, as appropriate. To issue an RVSM authorization under this section, the Administrator must find that the operator's aircraft have been approved in accordance with Section 2 of this appendix and the operator complies with this section.

(b) Except as specified in Section 9 of this appendix, an applicant seeking authorization to operate within RVSM airspace must apply in a form and manner prescribed by the Administrator. The application must include the following:

\* \* \* \* \*

(c) In a manner prescribed by the Administrator, an operator seeking authorization under this section must provide evidence that:

\* \* \* \* \*

(2) Each pilot has knowledge of RVSM requirements, policies, and procedures sufficient for the conduct of operations in RVSM airspace.

### Section 4. RVSM Operations

\* \* \* \* \*

(b) \* \* \*

(1) The operator is authorized by the Administrator to perform such operations in accordance with Section 3 or Section 9 of this appendix, as applicable.

(2) The aircraft —

(i) Has been approved and complies with Section 2 this appendix; or

(ii) Complies with Section 9 of this appendix.

(3) Each pilot has knowledge of RVSM requirements, policies, and procedures sufficient for the conduct of operations in RVSM airspace.

#### Section 5. Deviation Authority Approval

The Administrator may authorize an aircraft operator to deviate from the requirements of §§ 91.180 or 91.706 for a specific flight in RVSM airspace if —

\* \* \* \* \*

(b) At the time of filing the flight plan for that flight, ATC determines that the aircraft may be provided appropriate separation and that the flight will not interfere with, or impose a burden on, RVSM operations.

\* \* \* \* \*

#### Section 7. Removal or Amendment of Authority

The Administrator may prohibit or restrict an operator from conducting operations in RVSM airspace, if the Administrator determines that the operator is not complying, or is unable to comply, with this appendix or subpart H of this part. Examples of reasons for amendment, revocation, or restriction include, but are not limited to, an operator's:

\* \* \* \* \*

#### Section 8. Airspace Designation

RVSM may be applied in all ICAO Flight Information Regions (FIRs).

Section 9. Aircraft Equipped with Automatic Dependent Surveillance — Broadcast Out

An operator is authorized to conduct flight in airspace in which RVSM is applied provided:

(a) The aircraft is equipped with the following:

(1) Two operational independent altitude measurement systems.

(2) At least one automatic altitude control system that controls the aircraft altitude —

(i) Within a tolerance band of  $\pm 65$  feet about an acquired altitude when the aircraft is operated in straight and level flight under nonturbulent, nongust conditions; or

(ii) Within a tolerance band of  $\pm 130$  feet under nonturbulent, nongust conditions for aircraft for which application for type certification occurred on or before April 9, 1997, that are equipped with an automatic altitude control system with flight management/performance system inputs.

(3) An altitude alert system that signals an alert when the altitude displayed to the flightcrew deviates from the selected altitude by more than —

(i)  $\pm 300$  feet for aircraft for which application for type certification was made on or before April 9, 1997; or

(ii)  $\pm 200$  feet for aircraft for which application for type certification is made after April 9, 1997.

(4) A TCAS II that meets TSO C-119b (Version 7.0), or a later version, if equipped with TCAS II, unless otherwise authorized by the Administrator.

(5) Unless authorized by ATC or the foreign country where the aircraft is operated, an

ADS-B Out system that meets the equipment performance requirements of § 91.227 of this part. The aircraft must have its height-keeping performance monitored in a form and manner acceptable to the Administrator.

(b) The altimetry system error (ASE) of the aircraft does not exceed 200 feet when operating in RVSM airspace.

Issued under authority provided by 49 U.S.C. 106(f), 40103(b), 40113(a), and 44701(a) in Washington, DC, on December 10, 2018.

Daniel K. Elwell

Acting Administrator

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