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Robert deV. Frierson,
Secretary of the Board.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 91

[Docket No.: FAA-2015-1746; Amdt. No. 91-342]

RIN 2120-AK54

Changes to the Application Requirements for Authorization To Operate in Reduced Vertical Separation Minimum Airspace

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This action revises the FAA's requirements for an application to operate in Reduced Vertical Separation Minimum (RVSM) airspace and eliminates the burden and expense of developing, processing, and approving RVSM maintenance programs. As a result of this revision, an applicant to operate in RVSM airspace will no longer be required to develop and submit an RVSM maintenance program solely for the purpose of obtaining an RVSM authorization. Because of other, independent FAA airworthiness regulations, all aircraft operators remain required to maintain RVSM equipment in an airworthy condition.

DATES: Effective August 19, 2016.

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 Charles Fellows, Aviation Safety Inspector, Avionics Branch, Aircraft Maintenance Division, Flight Standards Services, AFS-360, Federal Aviation Administration, 950 L'Enfant Plaza North SW., Washington, DC 20024; telephone (202) 267-1706; email Charles.Fellows@faa.gov.

SUPPLEMENTARY INFORMATION:

Authority for This Rulemaking

The FAA's authority to issue rules regarding aviation safety is found in

Title 49 of the United States Code. Sections 106(f), 40113, and 44701 authorize the Administrator to prescribe regulations necessary for aviation safety. Section 40103 authorizes the Administrator to prescribe regulations to enhance the efficiency of the national airspace. This rulemaking is within the scope of these authorities because it removes an existing safety and airspace-related regulation that the FAA no longer finds necessary for aviation safety.

I. Overview of Final Rule

This action amends Appendix G of part 91 of Title 14 of the Code of Federal Regulations (14 CFR) by removing the requirement that any applicant for a Reduced Vertical Separation Minimum (RVSM) authorization must submit an RVSM maintenance program to the FAA for approval.

II. Background

The FAA's vertical separation standards establish the vertical distance that must separate aircraft routes in the national airspace system. In the early 1970's, rising air-traffic volume and fuel costs sparked an interest in reducing vertical separation standards for aircraft operating above flight level (FL) 290 (above 18,000 ft., flight levels are assigned in 500-ft. increments; FL290 represents an pressure altitude of 29,000 ft. referenced to a barometric pressure of 29.92 inches at sea level). At the time, the FAA required aircraft operating above FL290 to maintain a minimum of 2,000 ft. of vertical separation. Use of high-altitude routes was desirable, however, because the diminished atmospheric drag at these altitudes results in enhanced aircraft efficiency and a corresponding decrease in fuel consumption. Operators, therefore, sought and continue to seek not only the most direct routes, but also the most efficient altitudes for operation of their aircraft. Higher demand for these high-altitude routes has resulted in greater congestion.

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

- 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."

In response to the findings made by the Vertical Separation Program, the FAA began a two-phase implementation of RVSM operations for aircraft registered in the United States (U.S.). In 1997, and as the first phase, the FAA published two amendments to part 91 of Title 14 of the Code of Federal Regulations (14 CFR). The first amendment established § 91.706 (Operations within airspace designed as Reduced Vertical Separation Minimum Airspace), which, among other things, allows operators of U.S.-registered aircraft to fly in RVSM airspace outside of the U.S. Appendix G (Operations in Reduced Vertical Separation Minimum (RVSM) Airspace), was added which contained a set of operational, aircraft design, and other standards applicable to those seeking to operate in RVSM airspace. See *Reduced Vertical Separation Minimum Operations*, (62 FR 17480; Apr. 9, 1997). Appendix G includes the requirement that all applicants for RVSM authorization must submit an approved RVSM maintenance program to the FAA.

The second phase of RVSM implementation occurred in October 2003, with the publication of a second RVSM-related FAA rulemaking. *Reduced Vertical Separation Minimum in Domestic Airspace*, (68 FR 61304; Oct. 27, 2003 and 68 FR 70132; Dec. 17, 2003). The 2003 rule introduced RVSM airspace over the U.S. and, like the 1997 rulemaking, required all U.S.-registered RVSM operators to comply with the application, operations, and aircraft design requirements of part 91, appendix G. The FAA's RVSM program allows for 1,000 ft. of vertical separation for aircraft between FL290 and FL410 in U.S. airspace. Before the 2003 rule, air traffic controllers could only assign Instrument Flight Rules (IFR) aircraft flying at FL290 and above to FL290, 310, 330, 350, 370, 390, and 410 since the existing vertical separation standard was 2,000 ft. After the rule changes, IFR aircraft could also fly at FL300, 320, 340, 360, 380, and 400—nearly doubling capacity within this particular segment of airspace, mitigating the fuel penalties attributed to flying at sub-optimum altitudes, and increasing the flexibility of air traffic control.

In 2008, the FAA reviewed its RVSM authorizations, which applied to more than 15,000 U.S.-registered aircraft. The FAA's evaluation found that the existing

processes ensured compliance with RVSM operating requirements. At the same time, FAA representatives began meeting with the National Business Aviation Association (NBAA) to develop ways to streamline the RVSM application process to lower the burden for operators obtaining authorizations and reduce the FAA's workload associated with processing and granting these authorizations. The parties formed the RVSM Process Enhancement Team (PET) to focus on changes that could be accomplished without rulemaking. The PET completed its tasks in 2013. Among other things, it revised existing policies and guidance to facilitate more efficient processing of operator requests to change existing authorizations, and created a job aid to assist inspectors and standardize their review of operator applications. In a separate initiative, the FAA with input from industry determined that eliminating the redundant maintenance program component of the RVSM application would improve efficiency and reduce costs for both the agency and operators while maintaining the same high level of safety.

The requirement for an applicant to submit a maintenance program with the application for an RVSM authorization was promulgated in 1997 when most aircraft required significant design changes or inspections to qualify for RVSM operation. RVSM operations have become much more common since then. RVSM systems are now incorporated into aircraft type designs or have been incorporated through modifications performed using supplemental type designs or amended type designs. Operators must properly maintain those systems as part of their airworthiness obligations, making a separate RVSM maintenance program redundant and unnecessary.

A. Summary of the NPRM

In May 2015, the FAA issued an NPRM, (15 FR 30394; May 28, 2015) that proposed to amend the requirements for an application to operate in RVSM airspace. The FAA proposed to remove and reserve paragraph (b)(1), of section 3 of Appendix G of part 91, to eliminate the requirement that any operator seeking RVSM authorization under § 91.180 and § 91.706 had to develop and submit an RVSM maintenance program for FAA approval.

B. General Overview of Comments

The comment period for the NPRM closed on July 27, 2015. The FAA received 38 comments. The commenters included the National Air

Transportation Association (NATA) and the National Business Aviation Association (NBAA). Twenty commenters supported the rule change in its entirety, twelve commenters provisionally supported the change while supplying additional comments, and eight commenters opposed the rule change. The FAA divided the issues raised in the comments into three categories addressing: (1) Safety concerns; (2) further enhancements to the RVSM authorization process; and (3) miscellaneous comments or recommendations.

III. Discussion of Public Comments and Final Rule

Safety Concerns

Although there were slight variations, many of the comments submitted in opposition to the proposal claimed that reducing the regulatory requirements for an RVSM authorization would reduce aviation safety.

The FAA reiterates that this final rule eliminates an application requirement, and leaves intact FAA requirements to maintain RVSM equipment and operate RVSM authorized aircraft in an airworthy condition. As described in the NPRM, the requirement to submit a maintenance program as part of an RVSM application was promulgated in an environment where RVSM technology was not firmly established and RVSM maintenance procedures were unproven. As RVSM equipment was installed on more aircraft, and confidence in established maintenance procedures increased, the requirement for each applicant to develop its own RVSM-specific maintenance procedures ceased to produce any appreciable safety benefit.

Sections 91.180 and 91.706 will continue to require operators to meet the equipment and performance standards specified in Appendix G to part 91. These performance standards were developed by the RTCA SC-150 and the ICAO RGCSP as the minimum performance standard for aircraft to conduct RVSM operation, and adopted by the FAA. In addition, §§ 91.405 and 91.407 continue to require operators to have their aircraft inspected and approved for return to service by authorized persons and otherwise maintained in accordance with part 43. Moreover, each person performing maintenance is required to do so using the methods, techniques, and practices prescribed in the manufacturer's maintenance manual, Instructions for Continued Airworthiness (ICA), or other means acceptable to the Administrator.

The primary effect of this final rule is to remove the requirement for an applicant to submit an RVSM-specific maintenance program to the FAA as part of its application for an RVSM authorization.

One commenter stated that the requirement to maintain an aircraft in a condition for safe flight, as codified in § 91.7, applies only to a pilot, as opposed to an operator. The commenter stated that an operator is only required to maintain RVSM equipment because of its maintenance program obligations.

The FAA disagrees. As previously described, although this final rule eliminates an operator's obligation to submit a maintenance program as part of an RVSM application, operators will nevertheless continue to be required to maintain their RVSM equipment in accordance with applicable airworthiness standards. In particular, §§ 43.13, 91.405, and 91.407 continue to require aircraft to be inspected and approved for return to service in accordance with manufacturers' maintenance information or other material acceptable to the Administrator. Operators with maintenance programs, such as air carriers conducting operations under part 121, will continue to be required to maintain RVSM equipment in accordance with those programs.

Two commenters raised the issue of identifying required maintenance information. One commenter stated that most RVSM applicants do not have the latest RVSM maintenance information until they acquire that information in the course of preparing to apply for an RVSM authorization. Another commenter stated that ICA may not be available for all RVSM designs. As an example, the commenter referred to aircraft modified to meet RVSM performance standards under a supplemental type certificate (STC), rather than with equipment installed under a type certificate (TC), and also to aircraft modifications classified as minor changes to type design.

To the extent that these commenters assert that the requirement to submit a maintenance program as part of an RVSM application is necessary for operators to access or determine the appropriate maintenance instructions, the FAA disagrees. For many newer aircraft, RVSM capability is incorporated into the original type design. For other aircraft, incorporating alterations to meet RVSM performance requirements is classified as a major change to type design, and as such must be incorporated through an STC or an amended type certificate. In either case, § 21.50(b) requires, among other things,

a TC or STC holder to make ICA available to any person required to comply with those ICA, including owners and operators. Each owner or operator should, therefore, have access to all required maintenance and preventive maintenance information.

One commenter stated that he services aircraft that have been upgraded to RVSM capability by way of STCs, and removing the RVSM maintenance program requirement would remove the information from the aircraft records that identifies which STC is installed. The FAA disagrees. When STCs are incorporated into aircraft they constitute major changes to the aircraft type design. Identification of the design change and associated ICA are recorded in the appropriate aircraft records. Section 21.50 requires design approval holders to make ICA available to any owner, operator, or other person required to comply with their terms.

Another commenter stated that submission of an RVSM maintenance program is necessary to identify necessary repairs to RVSM and other aviation data equipment and that the FAA has a statutory obligation, under 49 U.S.C. 44701, to promote the safe flight of civil aircraft. The FAA disagrees that submission of an RVSM maintenance program with an RVSM application for authorization is necessary to identify repairs for the reasons previously stated. Removal of the requirement will not negatively impact the safe flight of civil aircraft or conflict with the FAA's obligations under 49 U.S.C. 44701.

Among the commenters who raised safety concerns, several recommended alternatives. One commenter recommended that the FAA require operators to "identify practices" for the maintenance of RVSM equipment (alternative 2 considered in the proposal), but without requiring that these practices be submitted as part of an application. The same commenter also recommended that the FAA modify the alternative to specifically require each operator to identify the TC or STC holder's ICA and ensure each is listed in the operator's maintenance tracking system.

The FAA believes that adopting the proposed alternative would provide no greater safety benefit and would do less to reduce the unnecessary burden on industry than eliminating the requirement to submit an RVSM maintenance program for approval. The commenter's recommendation would continue to require operators to provide redundant paperwork as part of each RVSM application. The FAA also believes that requiring an applicant to identify maintenance practices, in

addition to the existing requirements to follow those practices, would not meaningfully contribute to aviation safety. As stated previously, § 21.50 requires design approval holders to make ICA available to any owner, operator, or other person required to comply with the terms of those ICA.

With respect to the recommendation to require operators to track RVSM-specific information in a maintenance tracking system, the FAA agrees that any operator using a maintenance tracking system should use that system to track the maintenance of RVSM equipment as identified in the appropriate ICA. However, some operators—such as part 91 operators—are not required to develop maintenance tracking systems. To the extent that the commenter is recommending that the FAA require part 91 operators to implement maintenance tracking systems, the recommendation is outside the scope of this rulemaking.

One commenter observed that the FAA often rejects, for various reasons, maintenance programs that accompany operators' applications for RVSM authorizations. The commenter stated that the existence of these rejections is evidence that continued FAA oversight is necessary to maintain safety. The FAA disagrees. The FAA often rejects a program submission or requests that additional revisions be made to an application for reasons related to an operator's lack of familiarity with the process for developing a program and submitting an application. These issues may be unrelated to the adequacy of a particular maintenance program. Moreover, many part 91 operators applying for RVSM authorizations do not perform maintenance themselves—RVSM or otherwise—and are reproducing plans developed by an original equipment manufacturer. Regardless of who performs the maintenance, §§ 91.405 and 91.407 require each aircraft owner or operator to have the aircraft inspected and approved for return to service by an individual or entity authorized by § 43.7.

One commenter stated that the expense and effort required to create an RVSM maintenance program helps to ensure each operator's commitment to safety. Another commenter stated that the requirement to develop and submit a maintenance program encourages operators to adhere to the appropriate maintenance information. The FAA believes that imposing a requirement on operators to submit a maintenance program for approval imposes a significant cost on operators that is not an effective or appropriate means of

obtaining an operators' commitment to safety. As previously described, operators will continue to be required to maintain their aircraft in an airworthy condition in accordance with existing regulations.

Further Enhancements to the RVSM Authorization Process

Three comments were received that the proposal "did not go far enough," and recommended that the FAA eliminate RVSM approvals entirely. For example, one commenter stated that the industry's experience in safely installing, maintaining, and operating RVSM equipment demonstrates that there is no longer a need for RVSM approvals. The FAA proposed only to remove the requirement to submit a maintenance program from the application for RVSM approval. The FAA did not propose to eliminate RVSM approvals entirely. The commenter's recommendation is outside the scope of this rulemaking.

One individual commenter recommended that, in cases where an operator was applying to operate an aircraft which was previously listed on an authorization, the FAA should issue a temporary, interim RVSM approval. The commenter stated that the NPRM underestimated the costs of compliance with the FAA's RVSM approval program, because an operator awaiting RVSM authorization consumes significant additional funds flying below optimal altitudes. Operators are required to apply for a new authorization whenever an aircraft changes ownership or registration, regardless of whether the underlying aircraft is modified. The FAA did not propose to introduce interim RVSM authorizations. The commenters' recommendation is, therefore, outside the scope of this rulemaking.

Miscellaneous Comments or Recommendations

One commenter stated that a reduction to the FAA's workload is not a legitimate rationale for FAA rulemaking and that the FAA's goal and statutory obligation is to promote safe flight of civil aircraft. The FAA notes that this final rule eliminates a requirement that is no longer necessary to provide the level of safety required for these operations. The FAA is required by numerous statutes and executive orders to consider both the costs and benefits of its regulations and to adopt proposals that are cost justified. Costs incurred by the FAA are a legitimate factor to be considered in accomplishing this analysis. *See, e.g.*, 5 U.S.C. 601–612 (Regulatory Flexibility

Act); Executive Order 13563; Executive Order 12866.

One individual commenter stated that the industry assumes this rule change would allow an operator to obtain RVSM approval by submitting no more than a letter to the FAA. The FAA disagrees. The requirement to submit an RVSM maintenance program, a requirement eliminated by this rule, was only one of three components of an RVSM application. Under §§ 91.180, 91.706, and Appendix G to part 91, the FAA continues to require an applicant to submit documentation establishing that its aircraft is RVSM compliant, and that the applicant's crew has adequate knowledge of RVSM requirements, policies, and procedures as set forth in § 3(c)(2) of Appendix G. For part 121 and part 135 operators, this requires initial and recurring pilot training as specified in § 3(b)(2) of Appendix G.

One individual commenter recommended that the FAA eliminate the requirement for maintenance program approval only with respect to aircraft that are RVSM capable "under a TC." The commenter recommended that the FAA continue to require maintenance program approval for any aircraft that is RVSM capable as a result of an alteration performed in accordance with an STC because an STC indicates a major deviation from the aircraft's original type design and maintenance procedures would not be listed in the manufacturer's recommended procedures.

The FAA disagrees that aircraft with RVSM equipment installed pursuant to an STC should be treated differently from aircraft with RVSM equipment installed as part of an original or amended type design. Both TC and STC holders must develop ICA, and § 43.13 continues to require maintenance and preventive maintenance to be performed in accordance with the current manufacturer's maintenance manual, ICA, or other methods, techniques, and practices acceptable to the Administrator. Because ICA are available regardless of whether RVSM equipment is installed under a TC or an STC, and because all operators are equally obligated to maintain their equipment in accordance with this maintenance information, the FAA finds no reason to differentiate between these two kinds of operators.

One individual commenter stated that avionics technology has undergone a major transformation in the last 15 years, moving away from discrete components and towards more fully integrated systems. The commenter recommended that authorizations should similarly be analyzed and

approved in a more unified manner, to reduce the number of individual performance-based approvals. The commenter's recommendation that the FAA review all performance-based approvals in a single application is outside the scope of this rulemaking.

Several individual commenters, both supporting and opposing the proposal, stated that the burden on operators to obtain approval of an RVSM maintenance program could be reduced substantially by standardizing what is required by FAA inspectors in an RVSM application. The FAA has published and continues to provide guidance to its inspectors on the requirements for the issuance of an RVSM authorization. In addition to the guidance, the FAA has developed job aids to assist in the development of an RVSM program manual. The agency believes these ongoing efforts will continue to increase standardization in the application process.

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, the 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). This portion of the preamble summarizes the FAA's analysis of the economic impacts of this final rule.

Department of Transportation Order DOT 2100.5 prescribes policies and procedures for simplification, analysis, and review of regulations. Because this rulemaking is a retrospective regulatory

review, the expected outcome would be a cost savings with positive net benefits. The FAA has, therefore, determined that this final rule is not 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. Such a determination has been made for this final rule. The reasoning for this determination follows:

This rulemaking responds to requests from industry and FAA program offices. The rule removes the requirement that operators seeking RVSM authorization must submit an RVSM maintenance program for FAA approval. It eliminates the considerable burden and expense to operators and FAA safety inspectors of developing, processing, and approving RVSM maintenance programs.

When the former requirement was established, RVSM systems were yet to be incorporated into initial aircraft type designs. This is no longer the case. RVSM systems are now incorporated into initial aircraft type designs, and operators must properly maintain these systems as part of their airworthiness obligation. In light of these developments, the requirement for RVSM applicants to submit specialized maintenance programs is redundant. Removing this redundancy has no effect on aviation safety.

One commenter stated the NPRM underestimated the cost of compliance, because an operator awaiting RVSM authorization incurs cost flying below optimal altitudes. As the operators are already required to incur this cost, this rule does not change this cost. The FAA did not propose to introduce interim RVSM authorization, therefore no new cost are required. The FAA notes that no other comments were received on our NPRM cost-savings determination or methodology. While the same methodology is used here, the FAA has updated the number of maintenance programs expected to be submitted and the wage for the safety inspector to 2015 dollars.

The relief to part 91 operators and FAA safety inspectors from the streamlining of regulations equals the number of RVSM maintenance programs approved (including growth) multiplied by the costs per operator of submitting an RVSM maintenance program for FAA approval. To that result, the FAA added the number of RVSM maintenance programs approved multiplied by the cost of an FAA safety inspector to review and approve an RVSM maintenance program multiplied by the average number of hours FAA safety inspectors expend reviewing and approving each RVSM maintenance

program. The value for these variables is shown below.

CY 2015—Number of maintenance programs submitted to FAA for approval ¹	Average annual growth (2010–2015) in the number of maintenance programs submitted to FAA for approval (used as forecast of 2016–2020 growth)	Operator cost for submitting a maintenance program to the FAA for approval ²	Hours expended by FAA safety inspectors reviewing maintenance programs for approval ³
2,437	4.46%	⁴ \$5,000	12

Applying these estimates, the FAA anticipates that operators would experience cost savings of approximate \$12.7 million in year one of implementation. The FAA calculated this figure by multiplying the estimated number of maintenance programs expected to be submitted to the FAA for approval during CY 2016 (2,546 approvals) by each operator’s cost for submitting a RVSM maintenance program to the FAA for approval (\$5,000).

In addition to the cost savings realized by operators, eliminating the requirement would free 30,552 hours for FAA safety inspectors to perform alternative tasks during year one of implementation. The hours are calculated by multiplying the average number of hours FAA safety inspectors expend reviewing and approving each RVSM maintenance program submitted (12 hours) by the number of RVSM maintenance program approvals estimated for CY 2016 (2,546 approvals). The annual cost savings of \$1.4 million

to the FAA equals the 30,552 hours multiplied by the FAA fully-burdened wage of \$45.96.⁵ As per Department of Transportation (DOT) guidance, the FAA assumes that there will be a 1.2 percent projected annual increase in real wages.⁶

Based on these calculations, the cost savings to operators and the FAA during the first five years of the rule’s implementation will be approximately \$77.5 million (\$67.6 million present value). The results are presented below:

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¹ FAA National Program Tracking and Reporting Subsystem (NPTRS).

² National Business Aviation Association—Part 91 Operator Cost for Submitting an RVSM Approval.

³ FAA Safety Inspectors involved in RVSM authorization processing at FAA Flight Standards District Offices (FSDO).

⁴ This amount consists of \$3,123 in operator costs for submitting an application form and supporting

documentation to a RVSM manual preparation service, and then reading, understanding, signing, and submitting the completed RVSM maintenance program manual to the FAA for approval. The remaining \$1,977 is an approximation of the amount paid by an operator for RVSM manual preparation services. The estimate of \$1,977 is an average of quotes provided on the Internet by seven companies providing this service. These seven quotes ranged from \$795 to \$3,850.

⁵ Source: 2015 General Schedule Salary Table as published by the U. S. Office of Personnel Management. The salary used for calculating costs savings is the fully-burdened hourly wage for a GS 12 Step 5, which is the mid-range salary for this position.

⁶ Office of the Secretary of Transportation Memorandum, “Revised Departmental Guidance on Valuation of Travel Time in Economic Analysis”, July 2014.

Part 91 Operator/FAA	2016	2017	2018	2019	2020	Total
Number of RVSM Approvals Per Year (forecasted growth 4.46%)	2,546	2,659	2,778	2,902	3,032	13,917
Cost Savings Per RVSM approval	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	
Total Operator Cost Savings	\$12,730,000	\$13,295,000	\$13,890,000	\$14,510,000	\$15,160,000	\$69,585,000
Operator Net Present Value at 7%	\$12,730,000	\$12,425,234	\$12,132,064	\$11,844,482	\$11,565,491	\$60,697,271
Hours to review one program	12	12	12	12	12	
Hours Saved Annually	30,552	31,908	33,336	34,824	36,384	167,004
Salary Table 2014-GS middle of the scale GS-12 Step 5	\$45.96	\$46.51	\$47.07	\$47.63	\$48.20	
Savings Per Review	\$552	\$558	\$565	\$572	\$578	
Annual FAA Savings	\$1,404,170	\$1,484,041	\$1,569,126	\$1,658,667	\$1,753,709	\$7,869,712
FAA Net Present Value at 7%	\$1,404,170	\$1,386,954	\$1,370,535	\$1,353,966	\$1,337,896	\$6,853,522
Total Cost Savings	\$14,134,170	\$14,779,041	\$15,459,126	\$16,168,667	\$16,913,709	\$77,454,712
Total Cost Savings (PV)	\$14,134,170	\$13,812,188	\$13,502,599	\$13,198,449	\$12,903,387	\$67,550,793

Entries may not exactly add to totals due to rounding.

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B. 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 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.

Under the RFA, the FAA must determine whether a rule significantly affects a substantial number of small entities. This determination is typically based on small entity size and revenue thresholds that vary depending on the affected industry.⁷ In most cases, the FAA cannot determine the size of part 91 operators because financial and employment data for privately held entities is sparse. Nevertheless, the FAA believes the number of small business entities is substantial. The FAA estimates that this rulemaking will save each affected small entity \$5,000 per RVSM authorization.

Based on the criteria used in the initial regulatory flexibility analysis and used again here, this rule will impact a substantial number of part 91 operators. Accordingly, the FAA prepared a final

regulatory flexibility analysis for part 91 operators, as described in the next section. The FAA received no comments to the initial regulatory flexibility analysis for this rule.

Regulatory Flexibility Analysis

Under section 603(b) of the RFA (as amended), each regulatory flexibility analysis is required to address the following points: (1) Reasons the agency considered the rule, (2) the objectives and legal basis for the rule, (3) the kind and number of small entities to which the rule will apply, (4) the reporting, recordkeeping, and other compliance requirements of the rule, and (5) all Federal rules that may duplicate, overlap, or conflict with the rule.

Reasons the FAA Considered the Rule

All part 91 operator RVSM-related obligations are required by FAA airworthiness regulations to maintain RVSM equipment in an airworthy condition. Thus, the requirement that operators seeking RVSM authorization to develop and submit an RVSM maintenance program for FAA approval, is redundant.

The Objectives and Legal Basis for the Rule

The FAA’s authority to issue rules regarding aviation safety is found in §§ 106, 40113, and 44701 of 49 U.S.C., which authorize the FAA Administrator to prescribe regulations necessary for aviation safety. Section 40103 authorizes the Administrator to prescribe regulations to enhance the efficiency of the national airspace. This rulemaking is within the scope of these authorities because it removes existing safety and airspace-related regulations that the FAA no longer finds necessary to protect aviation safety.

The Kind and Number of Small Entities to Which the Rule Will Apply

This final rule will affect a substantial number of part 91 operators. The FAA estimates that this proposed rulemaking would save each affected small entity \$5,000 per RVSM authorization.

The Reporting, Recordkeeping, and Other Compliance Requirements of the Rule

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 is no new requirement for information collection associated with this final rule.

All Federal Rules That May Duplicate, Overlap, or Conflict With the Rule

This final rule eliminates an application requirement for submission of an RVSM maintenance program and leaves intact current requirements to maintain RVSM equipment and operate RVSM authorized aircraft in an airworthy condition. Sections 43.13, 91.405, and 91.407 continue to require aircraft to be inspected and approved for return to service in accordance with manufacturers’ maintenance information or other material acceptable to the Administrator. Operators with approved maintenance programs will continue to be required to maintain RVSM equipment in accordance with their approved programs.

*Other Considerations**Alternatives*

Alternative 1: Retain the current requirement for submission of an RVSM maintenance program for approval.

Analysis: Without changes to Appendix G of part 91, any operator seeking RVSM authorization would continue to be required to submit an RVSM maintenance program. A non-commercial operator with no requirement to hold a maintenance program for any other performance-based authorization would nevertheless be required to submit an RVSM maintenance program for approval—despite the fact that the operator is already required by FAA regulations to maintain RVSM equipment in accordance with its type design and in a condition for safe operation. Furthermore, the review and approval of this information would continue to consume FAA resources.

Alternative 2: Replace the current Appendix G requirement that operators include an “approved RVSM maintenance program” with a requirement that operators “identify practices” for the maintenance of RVSM equipment.

Analysis: Relaxing Appendix G application requirements to allow operators to “identify practices” for the maintenance of RVSM equipment would allow a non-commercial operator to cite the applicable manufacturer’s maintenance manual or ICA. This alternative would likely reduce the time and resources spent by operators and the FAA in compiling and reviewing RVSM applications. This alternative is undesirable, however, because it fails to address the absence of any safety benefits associated with continuing to require an RVSM maintenance program as a component of an RVSM application.

⁷ Thresholds are based on the North American Industry Classification System (NAICS). The NAICS is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.

The FAA expects this rule will save each affected small entity \$5,000 per RVSM authorization. Over a 5-year period, the number exceeds \$10,000 per RVSM authorization. While the rule may not have a significant economic impact, it would have a positive 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 final rule and determined that it will 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 (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 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 \$155 million in lieu of \$100 million. This final 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. The FAA has determined that there is no new requirement for information collection associated with this final rule.

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 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 312d (regulatory documents covering administrative or procedural requirements) and involves no extraordinary circumstances.

V. Executive Order Determinations

A. Executive Order 13132, Federalism

The FAA has analyzed this final rule under the principles and criteria of Executive Order 13132, Federalism. The agency 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, does not have Federalism implications.

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

The FAA analyzed this final 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 is not a “significant energy action” under the executive order and it is not 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—

1. Search the Federal eRulemaking Portal (<http://www.regulations.gov>);

2. Visit the FAA’s Regulations and Policies Web page at http://www.faa.gov/regulations_policies/ or

3. 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) 267–9680.

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 require 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/.

List of Subjects in 14 CFR Part 91

Air traffic control, Aircraft, Aviation safety.

The Amendment

In consideration of the foregoing, the Federal Aviation Administration amends chapter I of title 14, Code of Federal Regulations 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, 40103, 40113, 40120, 44101, 44111, 44701, 44704, 44709, 44711, 44712, 44715, 44716, 44717, 44722, 46306, 46315, 46316, 46504, 46506–46507, 47122, 47508, 47528–47531, 47534, articles 12 and 29 of the Convention on International Civil Aviation (61 Stat. 1180), (126 Stat. 11).

■ 2. Amend Appendix G, Section 3 by removing and reserving paragraph (b)(1).

Issued under authority provided by 49 U.S.C. 106(f), 40103, 40113, and 44701(a) in Washington, DC, on July 12, 2016.

Michael Huerta,
Administrator.

[FR Doc. 2016-17155 Filed 7-19-16; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 417, 420, 431, and 435

[Docket No.: FAA-2014-0418; Amdt. Nos. 417-4, 420-7, 431-4 and 435-3]

RIN 2120-AK06

Changing the Collective Risk Limits for Launches and Reentries and Clarifying the Risk Limit Used To Establish Hazard Areas for Ships and Aircraft

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is amending its regulations concerning the collective risk limits for commercial launches and reentries. These changes include: Separating the risk limits for commercial launches and reentries; aggregating the risk posed by impacting inert and explosive debris, toxic release, and far field blast overpressure; limiting the aggregate risk for these three hazards to 1×10^{-4} ; reducing the number of significant digits used in launch and reentry risk analysis; and various non-substantive clarifying revisions. These changes update FAA regulations to reflect the United States Government's greater experience with commercial launch and reentry and to align more closely the FAA's risk standards with those of other United States Federal agencies, while continuing to protect public safety.

DATES: Effective September 19, 2016.

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 Rene Rey, AST-300, Office of Commercial Space Transportation, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591;

telephone (202) 267-7538; email Rene.Rey@faa.gov.

SUPPLEMENTARY INFORMATION:

Authority for This Rulemaking

The Commercial Space Launch Act of 1984, as amended and codified at 51 United States Code (U.S.C.) Subtitle V—Commercial Space Transportation, Ch. 509, Commercial Space Launch Activities, 51 U.S.C. 50901–50923 (the Act), authorizes the Secretary of Transportation and thus the FAA, through delegations, to oversee, license, and regulate commercial launch and reentry, and the operation of launch and reentry sites as carried out by U.S. citizens or within the United States. 51 U.S.C. 50904, 50905. The Act directs the FAA to exercise this responsibility consistent with public health and safety, safety of property, and the national security and foreign policy interests of the United States. 51 U.S.C. 50905. Section 50901(a)(7), in relevant part, directs the FAA to regulate private sector launches, reentries, and associated services only to the extent necessary to protect the public health and safety and safety of property. The FAA is also responsible for encouraging, facilitating, and promoting commercial space launches and reentries by the private sector. 51 U.S.C. 50903.

I. Overview of Final Rule

The FAA is adopting this final rule to revise certain regulations related to the collective risk limits for commercial launches and reentries in part 417 (Launch Safety), part 420 (License to Operate a Launch Site), part 431 (Launch and Reentry of a Reusable Launch Vehicle (RLV)), and part 435 (Reentry of a Reentry Vehicle Other Than a Reusable Launch Vehicle (RLV)) of Title 14 of the Code of Federal Regulations (14 CFR).

This final rule divides the risk analysis for launch and reentry, providing a separate risk budget for each. For all launches, regardless of vehicle type, this final rule requires a single expected number of casualties (E_c) be calculated by aggregating the risk posed to the collective members of the public from three hazards: Impacting and inert explosive debris, toxic release, and far field blast overpressure. This final rule also revises the acceptable risk threshold for launch from an E_c of 30×10^{-6} for each hazard to an E_c of 1×10^{-4} for all three hazards combined. Furthermore, this final rule expresses the revised E_c limit using the correct number of significant digits to properly represent the uncertainty in E_c calculations. This final rule changes the FAA's collective risk limits for launch

and reentry to more closely match the E_c standard currently used by the United States (U.S.) Air Force and the National Aeronautics and Space Administration (NASA) for government missions, and to account for the level of uncertainty that exists in the E_c calculations.

This final rule also makes two revisions to § 417.107 to clarify the launch and reentry regulations. The first revision removes the phrase "including each planned impact" from § 417.107(b)(1) to clarify that public risk is assessed from lift-off through orbital insertion for orbital launches and from lift-off to final impact for suborbital launches. The second revision modifies § 417.107(b)(3) and (b)(4) to make transparent the criteria for establishing hazard areas by replacing the references to equivalent levels of safety for water borne and aircraft hazard areas required for launch from a federal launch range with the actual levels of safety provided by hazard areas for launches from a federal range in 2006, the year the FAA promulgated § 417.107. Under § 417.107(b)(3), a hazard area for water borne vessels satisfies part 417 if the probability of impact with debris capable of causing a casualty on any potential water borne vessel within the hazard area does not exceed 0.00001 (1×10^{-5}). Under § 417.107(b)(4), a hazard area for aircraft will satisfy part 417 if the probability of impact with debris capable of causing a casualty on any potential aircraft within that hazard area does not exceed 0.000001 (1×10^{-6}). These clarifying edits do not change the risk requirement for launch licensees or launch license applicants.

Summary of the Costs and Benefits of the Final Rule

The final rule will result in net benefits for both the commercial space transportation industry (industry) and government by reducing the number of waivers that must be prepared by the industry and processed by the government for launches with an aggregate E_c between 90×10^{-6} and 149×10^{-6} , and by averting unnecessary mission delays and scrubs. The resulting savings for both the industry and the FAA from reducing the number of waivers range from a low estimate of approximately \$8.3 million to a high estimate of \$16.7 million (\$5.8 million and \$11.7 million present value at a 7% discount rate, respectively).

II. Background

An operator conducts a launch using an expendable launch vehicle (ELV) or a reusable launch vehicle (RLV). An ELV is a launch vehicle whose