

NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

N 8700.36

1/13/05

Cancellation
Date: 1/13/06

SUBJ: INSPECTOR GUIDANCE FOR AUTHORIZATION OF AIRCRAFT AND OPERATIONS TO CONDUCT RVSM OPERATIONS

1. PURPOSE. This notice has two purposes:

a. Provides Updated Guidance. This notice provides updated guidance for aviation safety inspector (ASI) authorization of operators and aircraft to conduct flight in airspace where a Reduced Vertical Separation Minimum (RVSM) is applied.

b. Provides Program Tracking and Reporting Subsystem (PTRS) Entry Codes. This notice provides the applicable PTRS entry codes.

2. DISTRIBUTION. This notice is distributed to the division level in the Flight Standards Service in Washington headquarters; to the branch level in the regional Flight Standards divisions; to the Flight Standards District Offices; and to the Regulatory Standards Division at the Mike Monroney Aeronautical Center. This notice is also distributed electronically to the division level in the Flight Standards Service in Washington headquarters and to all regional Flight Standards divisions and district offices. This notice is also available on two Federal Aviation Administration (FAA) Web sites: the Flight Standards Service Web page (www.faa.gov/avr/afs/notices/N8700-36.doc) and the FAA RVSM Documentation Web page (www.faa.gov/ats/ato/rvsm1.htm).

3. ACTION.

a. Using the guidance provided in Interim Guidance (IG) 91-RVSM, Approval of Aircraft and Operators for Flight in Airspace Above Flight Level (FL) 290 Where a 1,000 Foot Vertical Separation Minimum is Applied (as amended), inspectors shall ensure that operators meet the standards of Title 14 of the Code of Federal Regulations (14 CFR) part 91, appendix G, Operations in Reduced Vertical Separation Minimum (RVSM) Airspace.

b. Inspector Approval or Acceptance. The terms “approve” and “accept” are used in this notice. Order 8700.1, General Aviation Operations Inspector’s Handbook, volume 1, chapter 3, paragraph 11, contains a discussion of inspector approval or acceptance of operator submissions. It states that, “acceptance of an operator’s proposal may be accomplished by various means, including a letter, verbal acceptance, or by taking no action, which indicates there is no FAA objection to the proposal.”

4. BACKGROUND.

a. RVSM Airspace. RVSM airspace is any airspace or route where aircraft are separated by 1,000 feet vertically, between FL 290 and FL 410, inclusive. Generally, aircraft and operators that have not been authorized to conduct RVSM operations cannot operate at FLs where RVSM is applied. Exceptions to this rule are published by individual air traffic service providers. Air traffic service providers have elected to implement RVSM as a means to provide more fuel/time efficient altitudes and routes to operators and to enhance en route airspace capacity.

b. RVSM Areas of Operation. Appendix 1 shows major areas where RVSM has been implemented or is planned to be implemented. RVSM was first implemented in the North Atlantic in March 1997. Since that time, it has been implemented in areas such as the Pacific Ocean, Western Atlantic, and Europe. It is planned to be implemented in the domestic United States in January 2005.

5. APPLICABILITY. This notice applies to ASIs who are responsible for granting Letters of Authorization (LOA) to operators applying for authority to operate in RVSM airspace.

6. SOURCES OF INFORMATION. Sources of information on RVSM programs are:

a. FAA RVSM Homepage. The RVSM homepage provides information on RVSM programs in various areas of the world; a link to the Domestic RVSM Web page where information is posted on plans and programs to implement RVSM in the domestic United States; and links to the RVSM Documentation Web page which provides specific information on aircraft and operator approval for RVSM operations. The RVSM homepage can be accessed at: www.faa.gov/ats/ato/rvsm1.htm.

b. RVSM Documentation Web Page. Related regulations, guidance, documents, and contacts can be found on the RVSM Documentation Web page. Appendix 3 of this notice shows the Table of Contents for the RVSM Documentation Web page. This Web page is maintained by the Flight Technologies and Procedures Division, AFS-400, and can be accessed at: <http://www.faa.gov/ats/ato/rvsm1.htm>, then clicking on "RVSM Documentation."

c. Regulations. The RVSM Documentation Web page provides links to 14 CFR part 91, section 91.706, and appendix G. Section 91.706 applies to RVSM operations outside the United States. Section 91.180, when published, will apply to RVSM operations inside the United States. Both sections require that the operator and the aircraft comply with part 91, appendix G, and that operators obtain FAA authorization prior to conducting RVSM operations. Part 91, appendix G, provides basic RVSM standards for aircraft and operator programs.

d. Guidance.

(1) FAA IG 91-RVSM (as amended), can be found on the RVSM Documentation Web page. IG 91-RVSM provides an acceptable means, but not the only means, that can be used to authorize operators and aircraft to conduct flight in RVSM airspace. It provides detailed guidance for aircraft manufacturers, other engineering organizations, and operators to follow when developing programs intended to meet the standards of part 91, appendix G.

(2) If an operator requests to deviate from the practices and procedures provided in IG 91-RVSM, the inspector should forward a request for assistance through the regional Flight Standards Division, to AFS-400. AFS-400 will respond after coordination with AFS-200, AFS-300, or AFS-800, as appropriate.

(3) IG 91-RVSM was developed in national and international forums and is used by civil aviation authorities throughout the world. International Civil Aviation Organization (ICAO) Document 9574 (Edition 2), Manual on Implementation of a 1,000 Ft Vertical Separation Minimum Between FL 290 and FL 410 Inclusive, provides RVSM guidance to civil aviation authorities and operators. Document 9574 cites FAA IG 91-RVSM as an acceptable means for RVSM approval that was developed in compliance with ICAO Document 9574.

7. OVERVIEW OF THE AUTHORIZATION PROCESS. The conditions for the issuance of LOAs are as follows:

a. The FAA Determines if Operator Aircraft Comply with RVSM Standards. For in-service aircraft, the FAA determines if inspections and/or aircraft system modifications are completed as required by the applicable Service Bulletin, Service Letter, Supplemental Type Certificate, or other Aircraft Certification Office approved documents. For aircraft manufactured in an RVSM-compliant condition, the FAA determines if the Airplane Flight Manual (AFM) or Type Certificate Data Sheet contain a statement of RVSM eligibility.

b. The FAA Approves the Operator's RVSM Maintenance Program.

c. The FAA Accepts the Operator's RVSM Operations Program.

d. The FAA Accepts the Operator's Plan to Participate in Monitoring Programs.

e. The FAA Accepts the Successful Completion of a Validation Flight, if Required. The operator successfully completes a validation flight, if required by the principal operations inspector (POI) in coordination with the principal avionics inspector (PAI) and principal maintenance inspector (PMI).

8. RVSM AUTHORIZATION PROCESS AND POLICY.

a. Coordination Between Inspectors. Before issuing operations specifications (OpSpecs) or LOAs, as applicable, inspectors must coordinate with the responsible operations, maintenance, and avionics inspectors.

b. Authorization Process Events. IG 91-RVSM, paragraph 11, Operational Approval, provides guidance on the major events in the RVSM authorization process. Also, the "Getting Started" section of the RVSM Documentation Web page contains an outline or checklist of the events or steps in the authorization process. It includes references to applicable document paragraphs and sections.

c. LOA Policy for Part 91 and Part 125 Operators Holding a Deviation to Operate Under Part 91. Current policy on LOAs can be found in Order 8700.1, as supplemented by related Notice N 8700.35, Operator and Airframe Authorization for Flight in Special Areas of

Operation (SAO). This notice is posted on the RVSM Documentation Web page under “Inspector Guidance” and will be incorporated in Order 8700.1, volume 2, chapter 222. IG 91-RVSM, paragraph 11g(2), also addresses LOAs for operators conducting RVSM operations under part 91 and states that ASIs should issue LOAs as follows:

(1) LOAs must be issued for “initial” RVSM authorization for each operator airframe. Operators are not, however, required to obtain a new or amended LOA to start RVSM operations with an aircraft for which they have previously received RVSM approval in an RVSM area of operations that is new to them.

(2) Operators are responsible for compliance with any operational policy and procedures specific to the new area of operations under part 91, sections 91.3, 91.703(a)(1)(2), and ICAO Annex 2, Rules of the Air, paragraph 2.3.2, Pre-flight action.

d. Relationship Between RVSM Authorization and Horizontal Navigation

Authorizations. Currently, in designated oceanic airspace, operators are required to obtain both RVSM authorization and certain horizontal navigation authorizations. These are separate and specific authorization actions. For example, to operate in North Atlantic Minimum Navigation Performance Specification (NAT MNPS) airspace, operators are required to obtain both RVSM and NAT MNPS authority. In Pacific oceanic airspace, operators are required to obtain both RVSM and Required Navigation Performance 10 authorization.

e. Determining Aircraft RVSM Compliance. The phrases “determining aircraft RVSM compliance” and “initial RVSM airworthiness approval” appear in RVSM documents to indicate that the FAA has determined if the operator’s aircraft complies with part 91, appendix G, RVSM standards.

(1) Order 8300.10, Airworthiness Inspector’s Handbook, volume 2, and IG 91-RVSM, paragraph 11d, provide inspector guidance on determining whether aircraft are RVSM compliant. Paragraph 11d(1) and (2) discuss the documents that the operator must submit to the FAA to show that in-service aircraft or aircraft manufactured RVSM-compliant are in compliance with the RVSM requirements of part 91, appendix G.

(2) For most in-service aircraft, the RVSM airworthiness documents take the form of Service Bulletins (SB), Service Letters (SL), or Supplemental Type Certificates (STC). These documents contain requirements that are specific to individual aircraft types or groups and generally require inspections and/or hardware or software modifications. The operator must submit documents to the FAA to show that the required actions have been completed for each airframe that will operate in RVSM airspace.

(3) For aircraft manufactured RVSM-compliant, the AFM or Type Certificate Data Sheet must contain statements to show that the aircraft are eligible for RVSM operations.

(4) When the inspector determines that individual operator airframes are RVSM-compliant, the inspector makes the PTRS entry. See paragraph 10 for PTRS action.

e. RVSM Maintenance Program Approval. Order 8300.10, volume 2, contains airworthiness inspector guidance for the evaluation and approval of an operator’s RVSM

maintenance program. Also, IG 91-RVSM, paragraph 10, contains guidance on the content of maintenance programs.

f. Operations Programs. IG 91-RVSM, paragraph 11d(3), Operations Training Programs and Operating Practices and Procedures, and 11d(4), Operations Manuals and Checklists, provide specific guidance on RVSM operations programs. Both pilot knowledge programs and RVSM operations documents/manuals must incorporate RVSM policy and procedures detailed in appendix 4, appendix 5 (if applicable), and documents applicable in individual areas of operation such as Notices to Airmen (NOTAM). Documents containing RVSM operational policy/procedures including those for individual areas of operation are posted on the RVSM Documentation Web page.

(1) Pilot Knowledge. Inspectors should consider any one of the options listed below to be an acceptable method for the operator to show the FAA that pilot knowledge of RVSM policy/procedures is adequate prior to operating in RVSM airspace. The inspector may:

- (a) Accept 14 CFR part 142 training center certificates without further evaluation.
- (b) Accept certificates documenting completion of a course of instruction on RVSM policy and procedures.
- (c) Accept an operator's in-house training program.
- (d) Evaluate a training course prior to accepting a training certificate by reviewing the syllabus, attending the course, or administering a written or oral exam.

(2) Operations Manuals. In accordance with IG 91-RVSM, paragraph 11d(4), operators must incorporate RVSM operating practices and procedures into their operations manuals or documents. Any one of the options listed below may be considered acceptable. The inspector may:

- (a) Accept an operator's stand-alone RVSM operations manual as part of the application for RVSM authority after reviewing it for completeness and correctness.
- (b) Accept documentation of the operator's RVSM operations policy/procedures provided as a section of the operator's application for RVSM authority after reviewing it for completeness and correctness.
- (3) IG 91-RVSM, appendix 4, provides operating practices and procedures applicable to all RVSM operations. Appendix 4, paragraph 7, lists special emphasis items for pilot training.
- (4) IG 91-RVSM, appendix 5, provides specific practices and procedures for RVSM operations in oceanic airspace. International NOTAMs and other countries' Aeronautical Information Publications also contain operational policy/procedures for RVSM operations outside the United States.

(5) Until operational policy and procedures for RVSM in the domestic United States are published, operators can use IG 91-RVSM, appendix 4, as the basis for their RVSM operations

training and operating practices/procedures. Operational procedures such as those for en route failure of RVSM systems in domestic U.S. airspace are planned to be published in the fourth quarter of 2003. Guidance will be published in the Aeronautical Information Manual and, in addition, AFS-400 will publish and distribute a Sample Pilot Bulletin that can be incorporated into individual operator programs. Operators will be responsible for incorporating this material into their programs prior to conducting RVSM operations in the United States. It is anticipated that operational procedures unique to domestic U.S. airspace will not be extensive.

g. Validation Tests and Flights.

(1) IG 91-RVSM, paragraph 11f, provides guidance on the RVSM validation flight. In some cases, review of the operator's RVSM application and program documents may suffice for validation test purposes. However, as determined by the POIs, PMIs, and PAIs, the final step of the approval process may be the completion of a validation flight. The FAA may accompany the operator on a flight to verify that RVSM operations and maintenance procedures and practices are used effectively. The validation flight may be accomplished during a revenue flight, as determined by the POIs on a case-by-case basis.

(2) Validation flights are not required to be conducted in conjunction with the monitoring flights described below. Also, the validation flight may be conducted before monitoring requirements are completed.

9. MONITORING PROGRAMS.

a. Objective of Monitoring. The primary goal of monitoring is to provide a quality control check on the altitude-keeping performance of the wide variety of operators and aircraft. This may be accomplished by sampling a number of airframes of each aircraft type that an operator will operate in RVSM airspace. Altitude-keeping performance data is analyzed to determine if the aircraft fleet, as well as individual operators, exhibit performance that is consistent with RVSM standards.

b. Operator Plan and Monitoring Requirements. In applying for RVSM authority, IG 91-RVSM, paragraph 11d(8), calls for each operator to submit a plan to participate in monitoring programs. It further notes that the current monitoring requirements for individual operators in specific RVSM areas of operation are published on the RVSM Documentation Web page.

NOTE: Operators are no longer required to complete monitoring prior to being granted an LOA.

c. Monitoring Procedures. Monitoring procedures for ground-based and Global Positioning System (GPS)-based monitoring systems are published on the RVSM Documentation Web page. Operator aircraft of a specific type or group are monitored after it is determined that they are RVSM compliant. Currently, the operator can have its aircraft monitored by either the ground-based Height Monitoring Unit or a portable GPS-based Monitoring Unit that can be placed on the aircraft. In the October 2003 timeframe, operators may have the option of overflying the FAA ground-based monitoring system called the Aircraft Geometric Height Measurement Element.

d. FSDO Notification. When an operator has successfully completed monitoring requirements for the specific aircraft type or group, the FAA Technical Center, Separation Standards Group (ACB-310), will notify the POI and/or PAI.

10. PTRS.

NOTE: It is imperative that the PTRS be updated in a timely manner.

a. RVSM Approvals Database. ACB-310 is retrieving PTRS information and compiling it into a database of RVSM aircraft and operator approvals. It is also forwarding the information to the international bodies tasked with tracking RVSM aircraft/operator approval. The approval information can also be faxed or e-mailed to ACB-310 (see Appendix 2).

NOTE: This information is being used to find and investigate aircraft that fly at RVSM FLs but are not RVSM-approved. The database of RVSM approvals is not, however, used in real time to grant or deny clearance into RVSM airspace.

b. Separate PTRS. Separate PTRS entries must be made, as follows:

(1) For in-service aircraft, see IG 91-RVSM, paragraph 11d(1). When the operator provides documentation that RVSM work is completed on individual airframes in accordance with appropriate airworthiness documents (e.g., SB, STC), the PTRS must be updated.

(2) For aircraft manufactured RVSM-compliant, a PTRS entry is required for “Initial Airworthiness Approval” of aircraft that are RVSM-compliant on delivery. Since no specific work is required to be accomplished on such aircraft, the same date that is listed for the operations activity code when the OpSpecs or LOA is approved may be used for the airworthiness and avionics activity code.

(3) For OpSpecs or LOA approval (authority is issued for each specific aircraft type or group), the PTRS must be updated.

(4) When “Other” actions, as described below, are taken, the PTRS must be updated.

c. System Update. The FSDO or Certificate Management Office (CMO) will update the system, as a minimum, with the specific items listed in Table 1:

TABLE 1

	INITIAL AIRWORTHINESS APPROVAL#	LOA OR OPSPECS GRANTED	OTHER*
Operations Activity Code	None	1411	1413
Airworthiness Activity Code	3411	None	3413
Avionics Activity Code	5411	None	5413

For in-service aircraft, approval means required SB, STC, or Aircraft Service Change work was accomplished. For aircraft manufactured RVSM-compliant, AFM or other appropriate documents found to show RVSM compliance.

* Other may include actions such as: N-number change; withdrawing RVSM approval due to transfer of airframe to a different operator; biennial LOA renewal for part 91 operators; investigation of oceanic navigation error report, etc.

d. Specific PTRS Entries are as follows:

(1) SECTION I—TRANSMITTAL

CFR: 91, 121, 125, or 135

STATUS: Closed

RESULTS: Completed or Assisted

CLOSED DATE: Date of Initial Airworthiness Approval or date OpSpecs were issued.

DESIGNATOR: 4-letter code for part 121, 125, and 135 operators; Optional for part 91 operators

NON-CERT. ACTIVITY NAME/COMPANY: Prohibited for part 121, 125, and 135 operators; required for part 91 operators

TRACKING: Used for all operators, the date RVSM approval was withdrawn

MISCELLANEOUS: Manufacturer’s aircraft serial number

(2) SECTION IV—COMMENTS

TABLE 2

PART 121, 125, AND 135 OPERATORS	PRIMARY AREA	KEY WORD	OPINION CODE
Initial Airframe Acceptance	A or F	643	I
Full RVSM Approval	A or F	643	I
Other	A or F	699	I

PART 91 OPERATORS	PRIMARY AREA	KEY WORD	OPINION CODE
Initial Airframe Acceptance	B or G	643	I
Full RVSM Approval	B or G	643	I
Other	B or G	699	I

(3) ADDITIONAL SECTION IV COMMENTS

- (a) For part 91 operators: date LOA expires.
- (b) For all operators: amplifying remarks why RVSM approval was withdrawn.
- (c) For all operators: if available, Aircraft Mode-S Address Code.

11. DISPOSITION. This notice will be incorporated into Order 8700.1. Each regional Flight Standards Division has appointed RVSM focal points. A list of the focal points is published on the RVSM Documentation Web page. For general questions on RVSM, the appropriate regional focal point should be contacted first. Questions about this notice and specific questions on RVSM policy

should be directed to the Flight Technologies and Procedures Division, AFS-400, at (202) 385-4576.


James J. Ballough
Director, Flight Standards Service

**APPENDIX 1. AREAS WHERE RVSM IS IMPLEMENTED OR PLANNED FOR
IMPLEMENTATION AS OF MAY 31, 2003**

Area of Operations	Implementation Dates	Flight Levels
North Atlantic MNPS (Minimum Navigation Performance Specification) Airspace	March 1997 October 1998 January 2002	FL 330-370 FL 310-390 FL 290-410
Pacific Oceanic Airspace	February 2000	FL 290-390
Australia	November 2001	FL 290-410
Western Atlantic Route System	November 2001 January 2002	FL 310-390 FL 290-410
All European Airspace	January 2002	FL 290-410
Western Pacific/South China Sea	February 2002	As published in Aeronautical Information Publications
Northern Canada	April 2002	FL 290-410
Middle East and Asia South of the Himalayas	Planned for November 2003	As published in Aeronautical Information Publications
Domestic United States, Southern Canadian Domestic Airspace, Caribbean, and South America	Planned for January 20, 2005	FL 290-410

**APPENDIX 2. OPTIONS FOR OPERATOR DATA TO BE PROVIDED TO FAA
TECHNICAL CENTER FOR INCLUSION INTO THE U.S. OPERATOR/AIRCRAFT
RVSM APPROVALS DATABASE**

1. The following data may be forwarded to the FAA Technical Center, Separation Standards Group, ACB-310, either by:

- a. Updating the PTRS as detailed in paragraph 9, or
- b. Faxing the information to:

U.S. Operator/Aircraft RVSM Approvals Database and Monitoring Coordinator
Fax: (609) 485-5078
Phone: (609) 485-5475

2. Data to be provided as individual aircraft are determined to be RVSM compliant:

- a. Operator identification.
- b. Aircraft make/model/series.
- c. Aircraft registration number (N-number).
- d. Manufacturer's serial number.
- e. Initial RVSM Airworthiness Approval date for each individual airframe.

(1) For in-service aircraft, the date work was completed to comply with appropriate RVSM airworthiness document (e.g., SB, SL, STC).

(2) For in-production or new-production aircraft, the date that the OpSpecs or LOA was issued.

3. Data to be added following operational approval of operator and aircraft type:

- a. Date operational approval granted (refers to the date that operations specifications or LOA is issued to the operator).

- b. For part 91 operators, show date that LOA expires.

APPENDIX 3. RVSM DOCUMENTATION WEB PAGE TABLE OF CONTENTS

The FAA RVSM Web site address is: www.faa.gov/ats/ato/rvsm_documentation.htm. AFS-400 will update the RVSM Documentation Web page periodically based on users' input. As of January 12, 2005, the table of contents for the RVSM Documentation page contains:

Table of Contents

- Webpage Updates: By Month Listing
- Getting Started: Information and Checklists
- Aircraft Certification (AIR) Policy/Procedures
- Frequently Asked Questions (FAQ)
- Contacts
- FAA Inspector Guidance
- Documents Applicable to All RVSM Approvals
- General/Business Aviation Aircraft and Operator Documents
- Large Transport Aircraft Documents
- Monitoring Requirements and Procedures
- Registration on RVSM Approvals Database
- Area of Operations Specific Information
 - 1. North American RVSM
 - Domestic U.S. RVSM (DRVSM)
 - Canada - RVSM
 - Mexico – RVSM
 - Gulf of Mexico
 - 2. Global Areas of RVSM Operations
 - Asia/Pacific Ocean
 - Caribbean and South America
 - Europe
 - West Atlantic Route System (WATRS), San Juan FIR, NY Oceanic, Atlantic High Offshore
- Safety Reporting