

Aircraft/Operator Approval for WATRS RVSM Operations

1. Purpose. This document was developed by the Flight Technologies and Procedures Division (AFS-400) of the FAA Flight Standards Service. (AFS-400 is located at FAA Headquarters in Washington, D.C.). It is intended to provide information to US and non-US operators and responsible State civil aviation authorities on Reduced Vertical Separation Minimum (RVSM) operations in the West Atlantic Route System (WATRS) airspace. This information guide provides RVSM reference material and information for WATRS operators on operator and aircraft approval, operational policy and procedures, aircraft height-keeping monitoring and registration on the RVSM database.

2. WATRS RVSM Implementation Plan/Schedule.

A. Exclusionary airspace. On 1 November 2001, Phase II of the WATRS RVSM Implementation Plan will implement RVSM in the New York Flight Information Region (FIR) portion of the WATRS airspace. RVSM will be implemented on an exclusionary basis between flight levels 310 and 390 (inclusive). On/after that date, with limited exceptions, prior to flight in that airspace, the operator and aircraft must be approved for RVSM operations by the appropriate State civil aviation authority. (This is referred to in RVSM documents as “exclusionary” airspace).

B. Transition areas. A map is published on the WATRS RVSM website that shows the portion of WATRS airspace where RVSM approval will be required (exclusionary airspace) and also areas that are designated “Transition areas”. In transition areas, RVSM approval is not required, however, 1,000 foot vertical separation may be applied between aircraft pairs where both aircraft are RVSM approved. (The operator shows RVSM approval by annotating the letter W on the equipment section of the flight plan). If one or both aircraft do not show RVSM approval, air traffic will apply 2,000 foot vertical separation. Phase I of the WATRS RVSM Implementation Plan expanded the FAA designated transition areas to U.S. facilities adjacent to the New York FIR with the exception of the San Juan Combined Center Radar Approach Control (CERAP). The U.S. facilities controlling this expanded transition airspace are Miami, Jacksonville and Washington.

3. FAA RVSM Website

A. FAA RVSM website. The FAA maintains the RVSM website for use by both US and non-US operators and State authorities. The FAA RVSM website homepage has links to websites covering specific areas of operation such as WATRS, the North Atlantic, Asia/Pacific and Europe.

(1) RVSM Documentation site. You can access the “RVSM Documentation” page by clicking on the RVSM Documentation Icon. The RVSM Documentation site is divided into sections. The first section is “Documents Applicable to All RVSM Approvals”. The sections that follow contain documents applicable to specific areas of operation such as the North Atlantic, WATRS and Pacific.

The FAA RVSM website address is: <http://www.faa.gov/ats/ato/rvsm1.htm>

B. WATRS RVSM Website. To access the WATRS RVSM website directly, the address is:

<http://www.faa.gov/ats/ato/watrs.htm>

4. Operator and Aircraft Approval. Access the “RVSM Documentation” section of the FAA website and review “Documents Applicable to All RVSM Approvals” as well as the WATRS section of the “RVSM Documentation” site.

A. Documents Applicable to All. We recommend operators first review the following documents to orient themselves to the approval process.

(1) “RVSM – US Approvals” or “RVSM – International Approvals” (as applicable). These are job aids or check lists that show aircraft/operator approval process events with references to related information in RVSM documents published on the website.

(2) “RVSM Area New to the Operator”. This document provides a guide for operators that are conducting RVSM operations in one or more areas of operation, but are planning to conduct RVSM operations in an area where they have not previously conducted RVSM operations.

B. West Atlantic Route System (WATRS) section of RVSM Documentation site. This site contains documents specific to WATRS operations.

(1) NOTAM: WATRS RVSM Operational Policy/Procedures. We are developing this NOTAM for publication in mid-July. A copy will be published under WATRS documentation. It will contain information related to WATRS RVSM operations for pilot and dispatcher training and manuals. The anticipated content is:

- Identification of WATRS RVSM airspace
- In-flight Procedures Within RVSM airspace
- #Special procedures for In-flight Contingencies – General Procedures
- #In-flight Contingency Procedures for Subsonic Aircraft Requiring Rapid Descent, Turn-back or Diversion
- #Weather Deviation Procedures
- #Special Procedures to Mitigate Wake Turbulence Encounters
- Transition Area Operations
- Flight Planning Requirements
- Procedures for Operation of Non-RVSM Compliant Civil Aircraft in RVSM Airspace
- Procedures for Operation of Non-RVSM Compliant State Aircraft in RVSM Airspace
- Separation Applied to Non-RVSM Compliant Aircraft
- Provisions for Continuous Climb/Descent of Non-compliant Aircraft Through RVSM Airspace
- Procedures For Suspension of RVSM

In-flight Contingency and Wake Turbulence Offset procedures for WATRS will be the same as those used in the North Atlantic. WATRS weather deviation procedures will be as close as possible to those used in Asia/Pacific operations.

C. Contacts. The following people can answer questions on aircraft/operator approval:

Contact	Phone	Fax	Email
David Maloy	+1-860-654-1006	+1-860-654-1009	david.maloy@faa.gov
Roy Grimes	+1-202-267-3734	+1-202-267-5086	roy.grimes@faa.gov
Bob Miller	+1-202-484-3359	+1-202-863-2398	rmiller@cssiinc.com
Alan Gilbert (IATA)	44-20-8607-6325	44-20-8607-6475	Gilberta@iata.org

5. Monitoring. All aircraft operators conducting RVSM operations in NAT/WATRS airspace are required to participate in the monitoring program. Monitoring conducted to satisfy other regions' monitoring requirements can satisfy the monitoring requirements for the NAT/WATRS. Monitoring services will be provided only to airworthiness approved aircraft.

A. Monitoring Requirements. The NAT and WATRS monitoring requirements are published in the NAT and WATRS section of the "RVSM Documentation" website.

B. GMU (GPS-based Monitoring Unit) Scheduling. The GMU may be used for aircraft height monitoring for WATRS RVSM airspace. Monitoring can be arranged by contacting the Operations Coordinator at either of the service providers listed below.

Contact	Phone	Fax	Email	Website
CSSI Inc.	+1-202-863-2175	+1-202-863-2398	Monitor@cssiinc.com	www.cssiinc.com
ARINC Inc.	+1-410-266-4707	+1-410-573-3007	Rvsmops@arinc.com	www.arinc.com

C. HMU (Height Monitoring Unit) Procedures. Procedures for HMU monitoring at the Gander (Canada) or Strumble (UK) sites are currently published on the ARINC website and the WATRS and NAT sections of the FAA RVSM Documentation site. The procedures document is titled "Procedure for the Monitoring of Technical Height Keeping Performance, North Atlantic Region". (The ARINC website address is "ARINC.com". Type in and search for "HMU").

6. RVSM Approvals Database. In accordance with regional agreements, State civil aviation authorities must register operators and airframes for which they are responsible that have been approved for WATRS RVSM operations. WATRS RVSM approved aircraft/operators will be registered on the North Atlantic Central Monitoring Agency (NAT CMA) database. (Operator/airframes already listed in the NAT CMA database for NAT RVSM operations need not be re-submitted).

A. US Operators. The FAA Technical Center (ACT-520) maintains the US database of RVSM approved airframes and operators. ACT-520 obtains the required information on US operators and airframes directly from the FAA Flight Standards (AFS) Program Tracking and Reporting Subsystem (PTRS). AFS Handbook Bulletin HBAT 99-11A and HBGA 99-17A provide guidance to AFS inspectors for completing the PTRS entries. Once an operator has completed the approval process with the appropriate AFS field office, no further action is required on the part of the operator.

B. Non-US Operators. **Policy/procedures to register non-US Operators on the NAT CMA database are attached.**

**POLICY/PROCEDURES TO REGISTER RVSM APPROVALS WITH THE NORTH
ATLANTIC CENTRAL MONITORING AGENCY (NAT CMA)**

Group Aircraft (See Note 1)

AIRCRAFT/OPERATOR APPROVAL. As stated in paragraph 4 above, aircraft/operator approval events are published on the FAA RVSM Documentation website with references to applicable documents. The following outlines those events with specific references for registering the aircraft on the NAT CMA database and for monitoring.

- 1) State aircraft certification offices evaluate and approve RVSM airworthiness approval documents (e.g., service bulletin, supplemental type certificate, etc.) for group aircraft.
- 2) Operators inspect and/or modify aircraft in accordance with the appropriate airworthiness approval document.
- 3) Operators provide the State authority with data on aircraft type and series, registration number, manufacturer's serial number and aircraft Mode S address code (in hexadecimal format), of all aircraft that they intend to operate in RVSM airspace as well as any documentation that may be required for those aircraft that have been inspected and/or modified in accordance with the RVSM airworthiness documents.
- 4) States notify the Central Monitoring Agency (CMA) as soon as possible, using a CMA Form 2 or by electronic means direct from their approvals database which should be set up in accordance with CMA recommendations. The date of airworthiness approval issued by the State should be the actual date that the modifications/inspection were completed for each airframe.
- 5) After the State authority has granted airworthiness approval, operators take steps to either overfly the HMU near Gander, Newfoundland, Strumble, UK or arrange with CSSI or ARINC for carriage of a GMU. (If monitoring occurs before the State has informed the CMA, the accrued data may still be used provided that it is dated after the modification/inspection was completed). In the case of aircraft added to an operator's fleet of the same type, after initial application for RVSM operating authority, the CMA will determine whether any further monitoring is required and will inform the State, which in turn, should inform the operator.
- 6) State authorities are responsible for determining whether an operator's fleet has demonstrated acceptable performance (see Note 2). (States and operators can consult the ARINC Bulletin Board or the CMA to ascertain that aircraft have been monitored and acceptable performance has been demonstrated.)

Note 1: "Group aircraft" means aircraft that are of nominally identical design and build with respect to all details that could influence the accuracy of height keeping performance.

Note 2: "Acceptable performance" will be based on the ASE measurements resulting from a sample of aircraft of each type from each operator as described on the minimum monitoring chart. Additionally, no individual airworthiness approved aircraft should be non-compliant.

- 7) Operators obtain State agreement to their on-going maintenance procedures, their operations manual (where applicable) and training programs and complete monitoring requirements.
- 8) The CMA informs States of registry regarding the completion of monitoring requirements by each operator.
- 9) States grant RVSM operational approval. An operator will not be permitted to fly in NAT RVSM airspace until RVSM (operational) approval has been awarded.
- 10) States notify the CMA or registration numbers and dates of RVSM (operational) approval.

Non-Group Aircraft

Non-group aircraft are those that cannot be considered as part of a group as defined in Note 1. For non-group aircraft the preceding procedures do not apply. Operators of these aircraft must apply for operating authority for individual airframes. Unless flight test evidence (e.g., trailing cone test results) can be provided to the State to show that each airframe is compliant with ASE targets, HMU or GMU monitoring is required prior to RVSM (operational) approval being granted. If flight test evidence (trailing cone results) is provided, States are requested to forward it to the CMA for inclusion in the safety analysis.

RECOMMENDED FORMAT FOR STATE RVSM APPROVAL DATABASES

Below is the recommended format for State RVSM approvals databases.

Field	Field Name	Type	Nominal Width
1	State of Registry	Alphabetic	2
2	Operator	Alphabetic	3
3	State of Operator	Alphabetic	2
4	Aircraft Type	Alphanumeric	4
5	Aircraft Mark/Series	alphanumeric	6
6	Manufacturers Serial/Construction No.	alphanumeric	12
7	Registration	alphanumeric	10
8	Aircraft Mode S Address Code	alphanumeric	6
9	Airworthiness Approval	alphabetic*	1
10	Date Airworthiness Approval Issued	date**	8
11	RVSM Approval	alphabetic*	1
12	Date RVSM Approval Issued	date**	8
13	Date of Expiry of RVSM Approval	date**	8
14	Date of Withdrawal of RVSM Approval	date**	8
15	Reason for Withdrawal	alphanumeric	60
16	Remarks	alphanumeric	60

* A Yes/No field may be used instead.

** Most databases will employ a customized data field. If the one being employed for the approvals database does not, then use an appropriate field with the day, month and year, in that order, being separated by forward slashes (/).

NOTES TO AID COMPLETION OF CMA FORMS F1, F2 AND F3

Please read these notes before attempting to complete forms CMA F1, CMA F2 & CMA F3.

It is important for the Central Monitoring Agency (CMA) to have an accurate record of a point of contact for any queries that might arise from on-going height monitoring. **Recipients within the authority/administration of the State of Registry/State of Operator** are therefore requested to include a completed CMA F1 with their **first** reply to the CMA. Thereafter, there is no further requirement unless there has been a change to the details requested on the form.

Recipients with large databases of approvals information are requested to send the information at the appropriate time intervals to the CMA on a 3.5" floppy disk or by e-mail. **The data should be extracted from the data base into a comma separated text file.**

Those recipients without electronic databases must complete a hard copy of CMA F2 for **each aircraft** granted the appropriate airworthiness and/or RVSM approval. The numbers below refer to the superscript numbers on the blank forms CMA F2 and F3.

1. Enter the 2 letter ICAO identifier as laid down in ICAO Doc 7910. In the event of there being more than one identifier for the same State, the one that appears first in the list should be used.
2. Enter the operator's 3 letter ICAO identifier as laid down in ICAO Doc 8585. If military, write 'MIL' and put the name of the aircraft's unit in the 'Remarks' field. If IGA, write 'IGA' and put the name of the operator/owner in the 'Remarks' field.
3. Enter the ICAO designator as laid down in ICAO Doc 8643
e.g. B767-200 = B762.
4. Enter Mark or Series of aircraft type e.g. 200.
5. Enter Aircraft Mode S address code in hexadecimal format.
e.g. 0001 0010 0011 0100 1101 1111 is equivalent to 1234DF in hexadecimal.
6. Enter Yes or No.
7. Example: For 26 June 2001 write 26:06:01.
8. Use a separate sheet of paper if insufficient space available.

The above numbers also refer to those superscript numbers used in CMA F3 - 'Withdrawal of Approval to Operate in North Atlantic RVSM Airspace'. ***If required, a CMA F3 must be completed and forwarded to the CMA by the most expeditious means available no later than the next business day after any withdrawal of RVSM approval.***

**POINT OF CONTACT DETAILS/CHANGE OF POINT OF CONTACT DETAILS FOR
MATTERS RELATING TO RVSM APPROVALS**

This form should be completed and returned to the address below on the first reply to the CMA or when there is a change to any of the details requested on the form. (PLEASE USE BLOCK CAPITALS).

STATE OF REGISTRY

STATE OF REGISTRY 2 LETTER ICAO IDENTIFIER

ADDRESS

NAME OF CONTACT PERSON

Title Surname Initials

Post/Position

Telephone Number Fax Number

Initial Reply*/Change of Details*

**Delete as appropriate*

When complete, please return to the following address:

NAT CMA
Room T8G7
One Kemble Street
London WC2B 4AP
United Kingdom

Telex: 883092 EGGA
AFTN: EGGAYFYG
Fax: + 44 (0)20 7832 5562
E mail: david.nicholas@nats.co.uk

RECORD OF AIRWORTHINESS APPROVAL AND RVSM APPROVAL

1. When a State of Registry/State of Operator approves or amends either the airworthiness approval or RVSM approval of an operator/aircraft for operations within North Atlantic (NAT) RVSM airspace, details of that approval must be recorded and sent to the NAT Central Monitoring Agency (CMA) as soon as practicable but no later than the 10th day of the month following the month that the approval was issued.

2. *Before providing the information as requested below, reference should be made to the accompanying notes. (PLEASE USE BLOCK CAPITALS).*

State of Registry ¹:	 I I I
Name of Operator²:	 I I I I
State of Operator ¹:	 I I I
Aircraft Type ³:	 I I I I I
Aircraft Mark/Series ⁴:	 I I I I I I I
Manufacturers Serial/Construction No:	 I I I I I I I I I I I I I
Registration:	 I I I I I I I I I I I
Aircraft Mode S Address Code ⁵:	 I I I I I I I
Airworthiness Approval ⁶:	 I I I I
Date Airworthiness Approval Issued ⁷:	 I I I I I I I I I
RVSM Approval ⁶:	 I I I I
Date RVSM Approval Issued ⁷:	 I I I I I I I I I
Date of Expiry of RVSM Approval (if any) ⁷:	 I I I I I I I I I
Remarks ⁸:	

When complete, please return to the following address by the most expeditious means at your disposal.

NAT CMA
Room T8G7
One Kemble Street
London WC2B 4AP
United Kingdom

Telex: 883092 EGGA
AFTN: EGGAYFYG
Fax: +44 (0)20 7832 5562
E-mail: david.nicholas@nats.co.uk

WITHDRAWAL OF APPROVAL TO OPERATE IN NORTH ATLANTIC RVSM AIRSPACE

1. Immediately a State of Registry/State of Operator has cause to withdraw the RVSM approval of an operator/aircraft for operations within the North Atlantic (NAT) MNPS/RVSM airspace, details as requested below, must be submitted to the NAT Central Monitoring Agency (CMA) by the most expedient method.

2. *Before providing the information as requested below, reference should be made to the accompanying notes. (PLEASE USE BLOCK CAPITALS).*

State of Registry¹:

Name of Operator²:

State of Operator¹:

Aircraft Type³:

Aircraft Mark/Series⁴:

Manufacturers Serial/Construction N^o:

Registration:

Aircraft Mode S Address Code⁵:

Date of Withdrawal of RVSM Approval⁷:

Reason for Withdrawal of RVSM Approval⁸:

Remarks⁸:

When complete, please return to the following address by the most expeditious means at your disposal:

NAT CMA
Room T8G7
One Kemble
London WC2B 4AP
United Kingdom

Telex: 883092 EGGGA
AFTN: EGGAYFYG
Fax: + 44 (0)20 7832 5562
E mail: david.nicholas@nats.co.uk