

REDUCED VERTICAL SEPARATION MINIMUM (RVSM) AFRICA

AFI RVSM AIRSPACE

Reduced Vertical Separation Minimum (RVSM) is vertical separation of aircraft by 1000ft between FL290 and FL410. With effect from 0001 UTC, 25 SEP 2008, only RVSM approved aircraft and State aircraft will be cleared to operate in the following FIRs:

Accra, Addis Ababa, Algiers, Antananarivo, Asmara, Beira, Brazzaville, Cairo, Canaries, Cape Town, Casablanca, Dakar, Dakar Oceanic, Dar es Salaam, Entebbe, Gaborone, Harare, Johannesburg, Johannesburg Oceanic, Kano, Khartoum, Kinshasa, Lilongwe, Luanda, Lusaka, Mauritius, Mogadishu, Nairobi, N'Djamena, Niamey, Roberts, Sal Oceanic, Seychelles, Tripoli, Tunis, Windhoek.

There is no transition airspace in entire AFI RVSM airspace.

AFI RVSM TRANSITION AIRSPACE

Transition tasks associated with the application of a 1000ft Vertical Separation Minimum (VSM) within the AFI RVSM Airspace shall be carried out in all, the adjacent FIRs/UIRs to the AFI RVSM airspace.

ATC units on the interface of AFI RVSM airspace shall:

- establish RVSM approved & non-RVSM approved State aircraft entering RVSM airspace at the appropriate RVSM FL;
- apply 1000ft VSM between RVSM approved aircraft, otherwise apply 2000ft RVSM;
- establish non-RVSM approved civil aircraft below FL290 if landing at an aerodrome below the RVSM airspace;
- establish non-RVSM approved civil aircraft above FL410 if transiting above the RVSM airspace & landing at an aerodrome outside AFI RVSM airspace;
- for aircraft leaving AFI RVSM airspace, apply 2000ft VSM and establish them at the appropriate non-RVSM levels.

ICAO TABLE OF CRUISING LEVELS FOR AFI RVSM AIRSPACE

Cruising levels as per direction of flight - FL280 to FL430

Route from 180 degrees to 359 degrees	Route from 000 degrees to 179 degrees
FL430 (non RVSM level above RVSM airspace)	
	FL410
FL400	
	FL390
FL380	
	FL370
FL360	
	FL350
FL340	
	FL330
FL320	
	FL310

Cruising levels as per direction of flight - FL280 to FL430 (continued)

Route from 180 degrees to 359 degrees	Route from 000 degrees to 179 degrees
FL300	
	FL290
FL280 (non RVSM level below RVSM airspace)	

FLIGHT OPERATIONS WITHIN THE AFI RVSM AIRSPACE

Except for State aircraft only RVSM approved aircraft shall be permitted to operate within the AFI RVSM airspace it should be noted that within the AFI RVSM airspace all cruising levels are equally assignable by ATC to all RVSM approved and State aircraft, provided that the applicable vertical separation minimum is applied.

ATC shall:

- only clear IFR RVSM approved aircraft & State aircraft into AFI RVSM airspace;
- provide a 1000ft VSM between RVSM approved aircraft;
- provide 2000ft VSM between all military formation flights and any other aircraft.

RVSM PROCEDURES

Only approved State aircraft shall be entitled to operate within the AFI RVSM Airspace, regardless of the RVSM status of the aircraft.

All operators filing Repetitive Flight Plans (RPLs) shall include in item Q of the RPL all equipment and capability information in conformity with item 10 of the ICAO flight plan.

Operators of RVSM approved aircraft shall indicate the approval status by inserting the letter "W" in item 10 of the ICAO Flight Plan, and in item Q of the Repetitive Flight Plan (RPL), regardless of the requested flight level.

Operators of non-RVSM approved State aircraft with a requested flight level of FL290 or above shall insert "STS/NONRVSM" in item 18 of the ICAO flight plan.

Operators of RVSM approved aircraft and non-RVSM approved State aircraft intending to operate within the AFI RVSM Airspace shall include the following in item 15 of the ICAO flight plan:

- a. the entry point at the lateral limits of the AFI RVSM Airspace, and the requested flight level for that portion of the route commencing immediately after the RVSM entry point; and
- b. the exit point at the lateral limits of the AFI RVSM Airspace, and the requested flight level for that portion of the route commencing immediately after the RVSM exit point.

REDUCED VERTICAL SEPARATION MINIMUM (RVSM) AFRICA**STATE AIRCRAFT OPERATING WITHIN AFI RVSM AIRSPACE**

All State aircraft operating in AFI RVSM Airspace will be considered as non-RVSM MASPS compliant and therefore non-RVSM approved. Therefore, the VSM required between State and other traffic shall be 2000ft. State aircraft, i.e. military aircraft, might be exempted from AFI RVSM requirements and where applicable, the indication that a non-RVSM approved aircraft is a State aircraft should be displayed.

IN-FLIGHT CONTINGENCY PROCEDURES

An in-flight contingency affecting flight in the AFI RVSM Airspace pertains to unforeseen circumstances, which directly impact on the ability of one or more aircraft to operate in accordance with the vertical navigation performance requirements of the AFI RVSM Airspace.

- The pilot shall inform ATC as soon as possible of any circumstances where the vertical navigation performance requirements for the AFI RVSM Airspace cannot be maintained;
- In above mentioned case, the pilot shall obtain a revised air traffic control clearance prior to initiating any deviation from the cleared route and/or flight level, whenever possible. Where a revised ATC clearance could not be obtained prior to such a deviation, the pilot shall obtain a revised clearance as soon as possible thereafter;
- ATC actions will be based on the intentions of the pilot, the overall air traffic situation, and the real-time dynamics;
- Suspension of RVSM refers to a discontinuance of the use of a vertical separation minimum of 1000ft between RVSM approved aircraft operating within the AFI RVSM Airspace;
- A VSM of 2000ft shall be applied between all aircraft operating within the portion of the AFI RVSM Airspace where RVSM has been suspended, regardless of the RVSM approval status of the aircraft.

AIRSPACE USER REQUIREMENTS

According to the ICAO Regional Supplementary Procedures - Doc 7030/5, AFI Part 1, the following compliance requirements apply:

Except for State aircraft, Operators intending to conduct flights will require an RVSM Approval either from the State in which the Operator is based or from the State in which the aircraft is registered. To obtain such an RVSM approval, Operators will need to satisfy the said State:

- a. That aircraft for which the RVSM Approval is sought have the vertical navigation performance capability required for RVSM operations through compliance with the criteria of the RVSM Minimum Aircraft Systems Performance Specifications (MASPS).
- b. That they have instituted procedures in respect of continued airworthiness (maintenance and repair) practices and programs; and

- c. That they have instituted flight crew procedures for operations in the AFI RVSM airspace.

NOTE: An RVSM approval is not restricted to a specific region . Instead, it is valid globally on the understanding that any operating procedures specific to a given region, in this case the AFI region, should be stated in the operations manuals or appropriate crew guidance.

HEIGHT MONITORING**Requirement for participation in the RVSM height monitoring program**

The requirement for monitoring systems from the initial RVSM feasibility studies and associated guidance as developed by the ICAO Review of General Concept of Separation Panel (RGCSPP), and is specified in ICAO Doc 9574, "Manual on implementation of a 300m (1000ft) Vertical Separation Minimum between FL290 and FL410 inclusive".

MONITORING SYSTEMS

The AFI RVSM monitoring system consists of portable GPS Monitoring Units (GMUs), which collect the required data.

For aircraft operators, the primary contact for the AFI Monitoring Program will be the AFI RMA (ARMA). For the AFI RVSM program, the ARMA will support operators (and approval authorities) on any issue related to RVSM approval and monitoring. It is important for the ARMA to have an accurate record of a point of contact for any queries that might arise from ongoing height monitoring. Operators are therefore requested to include a completed ARMA Point of Contact details with their first reply to the ARMA. Thereafter there is no further requirement unless there has been a change to the details requested on the form.

RVSM APPROVAL

Meeting the pre-requisites for monitoring, i.e. satisfying the appropriate RVSM airworthiness requirements and institute procedures in respect of continued airworthiness (maintenance and repair) practices and programs is not sufficient for RVSM approval.

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COMMUNICATION

CONTROLLER/PILOT PHRASEOLOGY

Phrase	Purpose
<i>(call sign)</i> CONFIRM RVSM APPROVED	Used by the controller to ascertain the RVSM approval status of the acft.
NEGATIVE RVSM¹	Used by the pilot to report non-RVSM approval status. a. on the initial call on any frequency within the CH RVSM airspace (controllers shall provide a read back with this same phrase), and b. in all requests for flight level changes c. in all read backs of flight level clearances pertaining to flight levels.
AFFIRM RVSM¹	Used by the pilot to report RVSM approval status.
CONFIRM WHEN ABLE TO RESUME RVSM¹	Used by the controller to request confirmation that an aircraft has regained RVSM approved status or a pilot is ready to resume RVSM operations.
<i>(call sign)</i> UNABLE ISSUE CLEARANCE INTO RVSM AIRSPACE, MAINTAIN [or DESCEND TO, or CLIMB TO] FLIGHT LEVEL (number)	Used to deny ATC clearance into CH RVSM airspace.
UNABLE RVSM DUE TURBULENCE¹	Used by the pilot to report when severe turbulence affects the aircraft's capability to maintain the height-keeping requirements for RVSM.
UNABLE RVSM DUE EQUIPMENT¹	Used by the pilot to report that the aircraft's equipment has degraded below the minimum aircraft system performance specifications (MASPS).
READY TO RESUME RVSM¹	Used by the pilot to report the ability to resume operations within the CH RVSM airspace after an equipment or weather-related contingency.
REPORT WHEN ABLE TO RESUME RVSM	Used by the controller to confirm that an aircraft has regained its RVSM approval status or to confirm that the pilot is ready to resume RVSM operations.

¹ indicates a pilot transmission

INFORMATION

Further information on the RVSM program is available on the AFI RVSM Web site: www.icao.int/esaf

For exchange of data on aircraft RVSM compliance status and for any information on the AFI RVSM approval and monitoring aspects, please contact:

ARMA

Address: Private Bag X15
South Africa
1622
Tel: +27 11 928 6506
Fax: +27 11 928 6420
E-Mail: afirma@atns.co.za
Internet: www.atns.co.za

For any further information on policy, planning and implementation issues for RVSM in the AFI RVSM area, please contact the:

AFI RVSM Program Office
ICAO Eastern and Southern Africa Office
Address: Limuru Road, Gigiri
United Nations Accommodation
Nairobi
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