

TELEPHONE Int 0009744589555 (wait for tone) 436-4208	AFGHANISTAN Ministry of Transportation and Civil Aviation	AIP SUPPLEMENT (SUP)
E-mail: mu_affora3afgdates@auab.centaf.af.mil		03/11 DATE: 21 Sep 11

RVSM Implementation in the Afghanistan Kabul FIR

1. INTRODUCTION

- 1.1 The purpose of this AIP Supplement (SUP) is to notify airspace users of the introduction of Reduced Vertical Separation Minima (RVSM) airspace in the Kabul FIR effective 0001 UTC, 17th November 2011. **RVSM will be implemented between FL320 and FL410 (inclusive).**
- 1.2 Details of other Afghanistan General and Special Equipment requirements will be incorporated into the Afghanistan Civil Aviation Regulations, Part 12 in due course. Details can be found at <http://www.motca.gov.af/index.php?id=8>.
- 1.3 Reduced Vertical Separation Minimum (RVSM) operations are mandated in part of the upper airspace of Afghanistan. RVSM is the generic term for a reduction in vertical separation from 2000 ft to 1000 ft that can be applied to operators of approved aircraft operating between FL 290 and FL 410 inclusive. However due to ongoing military operations, RVSM within the Kabul FIR will be adopted between FL320 and FL410 inclusive. Non-RVSM Approved aircraft are not permitted to operate within the Eurasia RVSM airspace, including in the Kabul FIR, except for operators of Non-RVSM Approved aircraft wishing to transit the Kabul FIR above RVSM airspace at FL 430 or above.
- 1.4 The requirements for Eurasia RVSM are published in the ICAO documents Regional Supplementary Procedures (Doc 7030) and Procedures for Air Navigation Services Air Traffic Management (PANS ATM Doc 4444). Detailed information on the ATS routes, associated flight level allocation and RVSM entry/exit points in the Kabul FIR are published in the Afghanistan AIP.

2. MEANS OF COMPLIANCE

- 2.1 Except for State aircraft, operators intending to conduct flights within the APAC RVSM airspace require a RVSM approval 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 shall satisfy the said State that:
 - a. Aircraft for which an approval is sought have the vertical navigation performance capability required for RVSM operations through compliance with the criteria of the RVSM minimum aviation system performance standards (MASPS);
 - b. They have instituted procedures in respect of continued airworthiness (maintenance and repair) practices and programs; and

- c. They have instituted operational procedures and a program of flight crew training so that they have an in-depth knowledge of the criteria for operating in RVSM airspace and this should include both initial and recurrent training.
- 2.2 For Afghanistan based operators and the operators of civil aircraft registered in Afghanistan the RVSM approval is to be obtained from the Ministry of Transport and Civil Aviation (MoTCA) Flight Safety and Standards Office. Once obtained the RVSM approval is not restricted to a specific region. Instead it is valid globally, where RVSM procedures are applied, on the understanding that any operating procedures specific to a given region should be stated in the operations manual or appropriate crew guidance. Applications for approval should be made in accordance with Civil Aviation Regulation, Part 12 (to be published).
 - 2.3 Aircraft that have received State approval for RVSM operations will be referred to as 'RVSM approved aircraft' while those aircraft that have not received such approval will be referred to as 'non-RVSM approved aircraft'. State aircraft that have not been granted RVSM approval are only to be granted access to RVSM airspace through prior approval with the Kabul Area Control Center (KACC). Subject to availability KACC will apply a 2000 ft separation from other traffic¹. This tactical clearance does not apply within other FIRs where non-RVSM approved aircraft will be subject to local regulations and procedures pertaining to RVSM.

3. FLIGHT CREW OPERATING PRACTICES AND PROCEDURES

- 3.1 All RVSM airspace is defined by ICAO as 'special qualification airspace'. Accordingly it is important that all operators provide their flight crews with a résumé of any special procedures or phraseology applicable to a given RVSM operation. Holders of AOCs are required to have an 'operations manual' in which all pertinent details and procedures are specified. Non-AOC holders are required to submit to the MoTCA for approval RVSM operations instructions/ procedures for use by flight crews.
- 3.2 Operations manuals should include sections on:
 - a. Equipment Requirements and Minima;
 - b. Flight Planning;
 - c. Pre-Flight, In-Flight and Post-Flight Procedures;
 - d. Contingencies;
 - e. TCAS/ACAS Alerts;
 - f. R/T Phraseology; and
 - g. Height Monitoring Requirements.

¹ Currently KACC does not have the ability to apply 2000ft separation due to the procedural nature of the service provided. Future capability enhancements are pending and may change this limitation.

4. CONTINGENCIES - APPLICABLE TO ALL RVSM AIRSPACE

4.1 General

4.1.1 Flight crews are to report to ATC as soon as practicable any event that may affect their ability to comply with the ATC clearance, examples being: severe turbulence, loss of thrust, loss of pressurization, need to divert, uncertainty of present position, etc. If, at any time, it is not possible to notify ATC immediately that a problem has occurred and obtain a new clearance before departing from the old, comply as accurately as possible with any procedures that may be specified for the airspace. Refer to Afghanistan AIP ENR 1.6.2 - Radio Failure Procedures and ENR 3 - Deviation from Airways. In all cases a good lookout should be maintained and if the aircraft is equipped with TCAS/ACAS the visual display should be used to assist in the sighting of proximate traffic.

4.1.2 The following equipment failures must be reported to ATC:

- a. Loss of thrust on one or more engines necessitating descent;
- b. Loss of one or more altimetry systems;
- c. Failure of all automatic altitude control systems;
- d. Failure of any other equipment that could affect the ability of the aircraft to maintain flight as cleared.

4.2 Contingencies - Applicable to Specified RVSM Airspace

4.2.1 Afghanistan and Eurasia RVSM Airspace - In this RVSM airspace it is expected that all aircraft will be in continuous radio contact with ATC either on the assigned frequency or on the distress and emergency frequency (121.500 MHz). They will therefore be able to advise ATC of any abnormal circumstances where RVSM performance requirements cannot be met, including encounters with turbulence greater than 'moderate'. ATC will then respond and issue an appropriate revised clearance before the pilot initiates a deviation from the original clearance. It is recognized; however, that there may be some circumstances (such as emergency descent following the loss of cabin pressurization) where deviations may have to occur with little or no prior notice to ATC. In such cases the pilot will need to obtain a revised clearance as soon as possible after the deviation.

5. TCAS/ACAS ALERTS AND WARNINGS

5.1 Procedures for dealing with TCAS/ACAS Alerts and Warnings are contained in Procedures for Air Navigation Services Aircraft Operations (PANS OPS, ICAO Doc 8168), Part 3, Section 3, Chapter 3.

6. RT PHRASEOLOGY

6.1 Phraseology associated with RVSM operations has been developed for global use. **All** flights must use this phraseology whilst operating, or intending to operate, between FL 320 and FL 410 inclusive in the Kabul FIR.

6.2 ATC is to use the controller-controller RVSM phraseology for co-ordination between Air Traffic Service Units (ATSUs). In the event of ATC being advised by the pilot that the

aircraft is no longer capable of RVSM operations, it is particularly important that the first ATSU is made aware of the failure generates the appropriate co-ordination, e.g. the pilot calls for start-up and declares 'unable RVSM due equipment' and the airport ATSU then passes this message on to the first Air Traffic Control Centre involved with the flight.

6.3 The detailed RVSM phraseology is contained in paragraph 14.

7. AFGHANISTAN SPECIFIC RVSM EXEMPTIONS

7.1 Due to infrastructure limitations no specific exemptions can be made for civilian aircraft in Afghanistan.

Note: Definition of 'State' aircraft - For the purpose of RVSM, only aircraft used in military, customs or police services shall qualify as 'State' aircraft and are eligible to apply 'M' in ITEM 8 of the Flight Plan.

8. COMPLETION OF FLIGHT PLANS - ADDITIONAL FLIGHT PLANNING REQUIREMENTS

8.1 Normal flight planning requirements for RVSM operation are contained in the Afghanistan AIP ENR 1.10.

Note: Having an RVSM Exemption does not confer any right to enter RVSM airspace as GAT unless specifically agreed by the appropriate ATC agency on the day. Any such penetration of RVSM airspace must be subject to the prevailing traffic conditions and controller workload. See footnote 1.

9. AIR TRAFFIC CONTROL (ATC) PROCEDURES FOR ALL FLIGHTS

9.1 Due to the procedural nature of the en-route ATC service provided, non-RVSM aircraft are not permitted to fly within the RVSM airspace. Special arrangements may be coordinated with KACC but will be only permitted for flights of overriding importance and will be subject to at least 24 hours notice.

9.2 Pilots must comply with any requirements stated in the RVSM Exemption unless otherwise instructed by ATC. Pilots are also reminded to include their Non-RVSM status (callsign: NEGATIVE RVSM) in the initial call on any frequency within RVSM airspace and subsequent frequency changes, when requesting level changes pertaining to flight levels in RVSM airspace and in all read backs to flight level clearances pertaining to flight levels in RVSM airspace.

10. HEIGHT MONITORING REQUIREMENTS

10.1 Afghanistan does not have a Height Monitoring capability. MoTCA is obliged by ICAO to keep a database of all Afghanistan registered RVSM approved aircraft. Therefore, operators are to inform MoTCA (RVSM Approvals) both when they add RVSM approved aircraft to their fleet and of any aircraft they intend to remove from their fleet of RVSM approved aircraft. MoTCA will pass this information to the appropriate Regional Monitoring Agency (RMA).

11. ORGANISATION OF MONITORING ACTIVITIES

- 11.1 On behalf of ICAO, the designated RMA is the Monitoring Agency Asia Region (MAAR) operated by Aeronautical Radio of Thailand Ltd. (AEROTHAI). The information which will be obtained through the monitoring program on aircraft compliance status and measured height keeping performance will be combined with the information available from monitoring agencies in other regions.
- 11.2 The RMA will support operators and approval authorities on any issue related to RVSM approval and monitoring. The RMA will require information on the aircraft which are intended to operate in Eurasia RVSM airspace, and which will, therefore, need to be monitored on a periodic basis as part of the continuing safety assessment. To this end the RMA will also be in contact with State approval authorities. The MAAR can be contacted as follows:

AEROTHAI Ltd
102 Ngamduplee Road
Tungmahamek
Sathorn
Bangkok 10120
THAILAND
Phone: +66 (0)2-287-8154
Fax: +66 (0)2-287-8155
Email: maar@aerothai.co.th

- 11.3 The RMA will ensure the continuous operation of the monitoring systems and will manage the measured height keeping performance data. The RMA will identify any height deviations that are outside the specifications of the ICAO RVSM performance requirements, and will follow-up as required.

12. GLOBAL LONG-TERM MONITORING REQUIREMENTS

- 12.1 ICAO has identified the need for ongoing monitoring to ensure the safety objectives continue to be met and to ensure the continued maintenance of height keeping performance of approved aircraft. This longer term monitoring is seen to be essential for the ongoing safety of RVSM operations.
- 12.2 The detailed global long term monitoring requirements are continuously evolving and the procedures in place in the Eurasia RVSM region are designed to conform to these.

13. UNEXPECTED TURBULENCE ENCOUNTER

- 13.1 The pre-implementation study of RVSM for the Kabul FIR² noted that the topography of Afghanistan could produce an increased possibility of turbulence and mountain waves. Due to the absence of radar surveillance, ATC are dependent on aircrews informing them of any vertical deviation due to meteorological phenomena. In extreme cases multiple aircraft could be affected leading to ATC temporarily suspending RVSM operations in the vicinity of the reported turbulence.
- 13.2 **Wake Vortices Encounters:** Due to the special nature of the airspace and frequent poor communications, pilots are to make every effort to contact KACC prior to making

² Pre-Implementation Study of RVSM for the Kabul FIR, dated May 2011 by U.S. Electronic Systems' Command, electronic Systems' Center (ESC).

maneuvers away from wake vortices. Pilots are in all cases to report the presence of wake vortices as soon as possible to allow KACC to provide increased vertical separation on a tactical basis.

13.3 Pilot Actions:

13.3.1 When an aircraft is operating in the Afghanistan RVSM airspace and encounters severe turbulence due to weather or wake vortex, and the Pilot-in-Command believes the vertical navigation performance requirements for Afghanistan RVSM airspace cannot be maintained, the pilot shall:

- a. Inform ATC as soon as possible (**'UNABLE RVSM DUE TURBULENCE'**);
- b. Obtain a revised ATC clearance prior to initiating any deviation from cleared route or flight level;
- c. Where such revised ATC clearance could not be obtained prior to such a deviation, obtain a revised clearance as soon as possible thereafter.

13.4 These procedures should not be interpreted in any way that prejudices the final authority and responsibility of the Pilot-in-Command for the safe operation of the aircraft.

13.5 Controller Actions:

13.5.1 The ATC controller shall:

- a. Establish either an appropriate horizontal separation or an increased vertical separation of 600 m (2000 ft);
- b. To the extent possible, accommodate the pilot's request for flight level and/or route changes and pass traffic information as required;
- c. Confirm that the pilot is ready to resume RVSM operations (**'REPORT READY TO RESUME RVSM'**).

14. CONTROLLER/PILOT RVSM PHRASEOLOGY

Para	Message	Phraseology
1.	ATC ascertain the RVSM approval status of a flight	(callsign) CONFIRM RVSM APPROVED
2.	Pilot indication of non-RVSM approval Status: To be stated: i. in the initial call on any frequency within the RVSM airspace (ATC shall provide a readback with the same phrase); and ii. in all requests for flight level changes pertaining to flight levels within the RVSM airspace;	NEGATIVE RVSM*

	<p>iii. in all readbacks to flight level clearances pertaining to flight levels within the RVSM airspace.</p> <p>As well, pilots of aircraft, other than State aircraft, shall respond to level clearances involving the vertical transit through either FL 290 or FL 410 with this phrase.</p> <p>See examples shown below.</p>	
3.	Pilot indication of RVSM approval status:	AFFIRM RVSM*
4.	State aircraft, non-RVSM approved, shall indicate their status as being that of a State aircraft, in conjunction with a negative response to the RTF with the phrase:	NEGATIVE RVSM STATE AIRCRAFT*
5.	ATC denial of clearance into the RVSM airspace:	(callsign) UNABLE CLEARANCE INTO RVSM AIRSPACE, MAINTAIN (or DESCEND TO, or CLIMB TO) FLIGHT LEVEL (number)
6.	For the case of an individual aircraft reporting severe turbulence or other severe weather related phenomenon, the pilot phraseology shall be:	UNABLE RVSM DUE TURBULENCE*
7.	<p>The phraseology required of a pilot to communicate those circumstances which would cause an aircraft's equipment to degrade to below altimetry MASPS compliance levels shall be:</p> <p>The phrase is to be used to convey both the initial indication of the non-altimetry MASPS compliance and, henceforth, on initial contact on all frequencies within the lateral limits of the RVSM airspace until such time as the problem ceases to exist.</p>	UNABLE RVSM DUE EQUIPMENT*
8.	The pilot shall communicate his/her ability to resume operation within the RVSM airspace after an equipment related contingency, or his/her ability to resume RVSM operations after a weather related contingency with the phrase:	READY TO RESUME RVSM*
9.	To solicit this information ATC shall use the phrase:	(callsign) REPORT ABLE TO RESUME RVSM
Note: * indicates a pilot transmission		

Example 1: A non-RVSM approved aircraft, maintaining FL 260, subsequently requests a climb to FL 320

Pilot RTF:	(callsign) REQUEST FL 320, NEGATIVE RVSM
Controller RTF	(callsign) CLIMB FL 320
Pilot RTF	CLIMB FL 320, NEGATIVE RVSM (callsign)

Example 2: A non-RVSM approved aircraft, maintaining FL 260, subsequently requests a climb to FL 430.

Pilot RTF:	(callsign) REQUEST FL 430, NEGATIVE RVSM
Controller RTF	(callsign) CLIMB FL 430
Pilot RTF	CLIMB FL 430, NEGATIVE RVSM (callsign)

Example 3: A non-RVSM approved aircraft, maintaining FL 360, subsequently requests a climb to FL 380.

Pilot RTF:	(callsign) REQUEST FL 380, NEGATIVE RVSM
Controller RTF	(callsign) CLIMB FL 380
Pilot RTF	CLIMB FL 380, NEGATIVE RVSM (callsign)

Example 4: A non-RVSM approved civil aircraft, maintaining FL 280, subsequently requests a climb to FL 320.

Pilot RTF:	(callsign) REQUEST FL 320, NEGATIVE RVSM
Controller RTF	(callsign) UNABLE CLEARANCE INTO RVSM AIRSPACE, MAINTAIN FL 280

Controller-Controller Phraseology		
Para	Message	Phraseology
1.	To verbally supplement an automated estimate message exchange which does not automatically transfer Item 18 information	NEGATIVE RVSM or NEGATIVE RVSM STATE AIRCRAFT (as applicable)
2.	To verbally supplement estimate messages of non-RVSM approved aircraft:	NEGATIVE RVSM or NEGATIVE RVSM STATE AIRCRAFT (as applicable)
3.	To communicate the cause of a single aircraft contingency:	UNABLE RVSM DUE TURBULENCE (or EQUIPMENT, as applicable)

15. CANCELLATION

15.1 This SUP will be cancelled when RVSM is included in the Afghanistan AIP.

16. DISTRIBUTION

16.1 Advised via NOTAM and available from <http://www.motca.gov.af/index.php?id=8> website.