



## PIARCO INTERNATIONAL NOTAM OFFICE

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### REPUBLIC OF TRINIDAD AND TOBAGO

#### PIARCO FIR (TTZP) RVSM IMPLEMENTATION

## 1. INTRODUCTION

- 1.1 The constant global increase of air traffic, the operational need for aircraft to fly at, or nearest to, their optimum flight levels and the demand for a better use of the airspace, have promoted the implementation of the reduced vertical separation minima (RVSM) of 1000 feet above FL290 in the different ICAO regions, such as North Atlantic, Asia-Pacific, Europe, South Atlantic EUR/SAM corridor (SAT), WATRS (West Atlantic Route System) and the Middle East, largely demonstrating its advantages and, without a doubt, representing the best solution for increasing the availability of optimum flight levels, while maintaining or improving the required safety levels.
- 1.2 The Third CAR/SAM Regional Air Navigation Meeting (CAR/SAM/3 RAN), Buenos Aires, Argentina, 1999, entrusted the CAR/SAM Regional Planning and Implementation Group (GREPECAS) with the development of the studies and evaluation of the needs and benefits resulting from RVSM implementation in both regions.
- 1.3 According to the analysis of major CAR/SAM Traffic Flows carried out by the UNDP/ICAO Regional Project RLA/98/003 "Transition to CNS/ATM Systems in the CAR and SAM Regions", some sectors of the airspace are experiencing busy traffic especially during "peak" periods and hours. Consequently, a significant number of aircraft do not operate at their optimum flight level, negatively affecting the efficiency of operations.
- 1.4 GREPECAS/10 Meeting (Las Palmas, Canary Islands, Spain, October 2001), concluded that RVSM implementation would permit a better use of the airspace and benefit the air transport economy. In order to establish a seamless implementation strategy with the other ICAO regions, the decision for "RVSM Implementation in the CAR/SAM Regions" was ratified by GREPECAS/11 (Manaus, Brazil, December 2002) and GREPECAS/12 (Havana, Cuba, June 2004) Meetings, for 20 January 2005, concurrent with the ICAO NAM Region.
- 1.5 The aircraft operators and the Air Traffic Services providers could obtain significant benefits with RVSM implementation in the CAR/SAM regions that, among others, include:
  - a) Greater availability of optimum flight levels;
  - b) Better use of the airspace;
  - c) Increase in airspace capacity;
  - d) Use of standardized and harmonious ATS procedures;
  - e) Application of uniform separation minima;
  - f) Reduction of ground delays; and
  - g) Fuel savings of approximately 1% for flights carried out at, or near to, the optimum cruise levels.

1.6 Doc 9574, ICAO *Manual on the Implementation of a Vertical Separation Minima of 300 m (1000 ft) between FL 290 and FL 410 inclusive*, contains an extensive explanation for a safe RVSM implementation.

1.7 Based on that document, the RVSM Task Force (RVSM/TF) of the GREPECAS ATM Committee has developed the documentation and the RVSM operational procedures for their application in the CAR/SAM regions. The main documents are the following:

- a) *Guidance Material on the Implementation of a Vertical Separation Minima of 300 m (1000 ft) between FL 290 and FL 410 inclusive for Application in the Airspace of the Caribbean and South American Regions;*
- b) *Caribbean and South American Regions RVSM Concept of Operations;*
- c) *ATC Guidance Manual for RVSM Training in the CAR/SAM Regions.*

Note 1: These documents are published on the ICAO NACC and SAM Regional Offices Websites:

[www.mexico.icao.int](http://www.mexico.icao.int)

[www.lima.icao.int](http://www.lima.icao.int)

Note 2: The procedures for RVSM operations applicable to the CAR and SAM regions have also been included in ICAO *Doc 7030 – Parts CAR and SAM, Regional Supplementary Procedures*

Note 3: The regulations and procedures indicated below do not necessarily cover all the aspects required for operations in RVSM airspace, aircraft approval or monitoring.

The documents mentioned in paragraphs 1.6 and 1.7 of this AIC contain the applicable procedures for RVSM operations in the CAR/SAM regions. The WEB site of the Caribbean and South American Regional Monitoring Agency (CARSAMMA) [www.cgna.gov.br](http://www.cgna.gov.br) presents detailed information required for RVSM approval and monitoring, as well as the applicable documents for the CAR/SAM regions.

## **2. IDENTIFICATION OF RVSM AIRSPACE**

### **2.1 Airspace Delineation**

2.1.1 Starting at 0901 UTC on 20 January 2005, the Piarco FIR defined by the following geographic coordinates, shall be designated *RVSM Airspace between FL290 and FL410 inclusive*.

1500N06500W	–	1500N06315W	–	1520N06300W	–	1722N06300W	–
1800N06200W	–	1800N04500W	–	2218N04000W	–	1700N03730W	–
1330N03730W	–	1000N04800W	–	0920N05400W	–	0855N05700W	–
0855N05957W	–	0959N06128W	–	0959N06156W	–	1005N06203W	–
1044N06147W	–	1100N06230W	to point of origin.				

### **2.2 Vertical Separation Minimum (VSM)**

2.2.1 The vertical separation minimum (VSM) to be applied in the RVSM airspace, described in paragraph 2.1.1, will be 1000 ft.

### **2.3 RVSM Implementation**

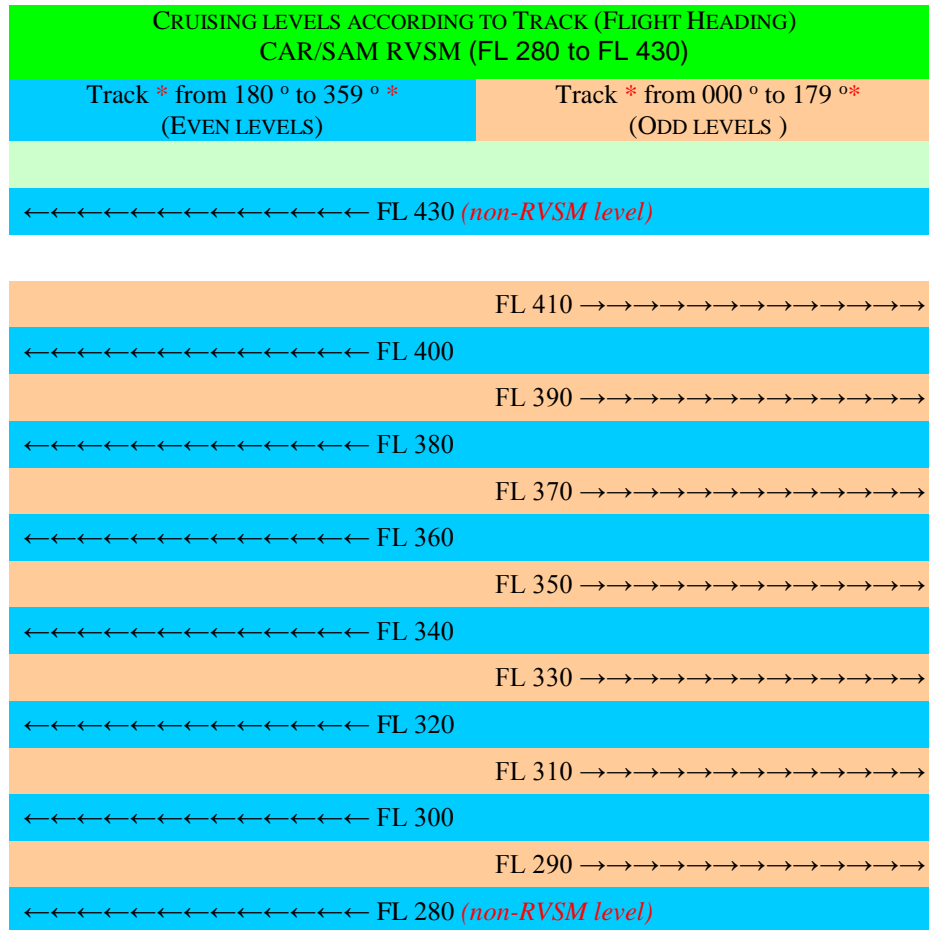
2.3.1 RVSM will be implemented at 0901 UTC on 20 January 2005 in all NAM/CAR/SAM airspace.

**2.4 Transition Areas**

2.4.1 There are no Transition Areas within the Piarco Flight Information Region (FIR) (that airspace described in paragraph 2.1.1 above).

**2.5 RVSM Flight Level Allocation Scheme (FLAS)**

2.5.1 The flight level allocations in RVSM airspace will be made according to the following table:



**3. AIRWORTHINESS/OPERATIONS APPROVAL AND MONITORING**

3.1 RVSM Approval - Operators operating or intending to operate in the RVSM airspace must obtain RVSM approval from the State of Registry or the State of Operator as appropriate.

3.2 Aircraft monitoring - Operators operating or intending to operate in the RVSM airspace shall participate in an RVSM Monitoring Programme, through which it is confirmed that the aircraft fulfils the height-keeping performance requirements.

**3.2.1 Operators must present a plan for the completion of initial monitoring requirements to their respective Civil Aviation Authority.**

3.2.2 The CAR/SAM Monitoring Agency (CARSAMMA) is responsible for the RVSM Monitoring Programme in the CAR/SAM Regions. The CARSAMMA shares monitoring information with other regions, including RVSM approval data.

3.3 Documentation for RVSM approval, monitoring and operation is obtainable from:

Trinidad and Tobago Civil Aviation Authority  
P.O. Box 2163, National Mail Centre,  
Golden Grove Road, Piarco  
Trinidad and Tobago.

e-mail: [piarcoacc@caa.gov.tt](mailto:piarcoacc@caa.gov.tt)

website: [caa.gov.tt](http://caa.gov.tt)

Administration: Tel: (868) 669 4302

Fax: (868) 669 5397

Inspectorate: Tel: (868) 669 4251/0519

Fax: (868) 669 5438

ATS: Tel: (868) 669 4806/0635/8789

Fax: (868) 669 0635

AIS: Tel: (868) 669 4128

Fax: (868) 669 1716

#### **4. OPERATION OF NON RVSM APPROVED AIRCRAFT IN RVSM AIRSPACE**

4.1 **Non-RVSM approved aircraft**, with the exception of State, Humanitarian, Maintenance and Ferry First Delivery aircraft **will NOT be allowed to operate in the Piarco RVSM airspace.**

4.2 Non-RVSM approved aircraft will only be authorized in RVSM airspace with sufficient communication and surveillance coverage.

4.3 The vertical separation of 2000 feet shall be applied between non-RVSM approved aircraft and all other traffic.

4.4 Preference in the use of flight levels will be given to the approved RVSM aircraft.

4.5 **Non-RVSM approved aircraft**, with the exception of State, Humanitarian, Maintenance and Ferry First Delivery aircraft **should flight plan outside the limits of RVSM airspace.**

4.6 Non-RVSM approved aircraft may be cleared out of RVSM airspace due to traffic or workload.

4.7 If safety is affected on account of non-RVSM approved aircraft operating in RVSM airspace, ATC can suspend, at any moment, authorization for such flights in the RVSM airspace.

4.8 Non-RVSM approved aircraft will be allowed to climb through or descend through RVSM airspace if operational circumstances permit such an operation, provided that the climb/descent is accomplished at no less than standard rate.

4.9 Such climbs/descents would be conducted only in areas of reliable direct pilot-controller communications, and shall be continuous through the RVSM stratum.

4.10 Controllers would ascertain whether the aircraft can climb/descent at an optimum rate so as to minimize its impact on other operations in RVSM airspace.

## 5. FLIGHT PLANNING

### 5.1 RVSM approved aircraft

5.1.1 RVSM approved aircraft are those that have all obtained certification to operate in RVSM airspace. Flights conducted by RVSM approved aircraft are allowed to flight plan and operate in the RVSM stratum. Aircraft operators shall indicate their status of RVSM approval by inserting the letter "W" in item 10 of the Flight Plan Form, independent of the flight level requested.

### 5.2 Non-RVSM approved aircraft

5.2.1 Non-RVSM approved aircraft are those that do not have the certification required for RVSM operations. Non-RVSM approved aircraft will only operate in RVSM airspace under one of the following conditions, and in which a vertical separation minimum of 2000 feet will be applied from all other aircraft:

5.2.1.1 STATE AIRCRAFT: Non-RVSM approved State aircraft are allowed to flight plan and operate in RVSM airspace. Filing of a flight plan shall serve as advance notice to ATC that the aircraft is requesting to operate in RVSM airspace. Non-RVSM approved State aircraft flight planning into RVSM airspace must include the following in Item 18 (Other Information) of their flight plan: "STS/NON-RVSM" or "STS/NON RVSM". Do not file a "W" in Item 10.

5.2.1.2 MAINTENANCE/FERRY FIRST DELIVERY AIRCRAFT: Non-RVSM approved aircraft on recognized maintenance or ferry first delivery flights may flight plan and operate in the RVSM stratum. Operators must file "STS/NON-RVSM" or "STS/NON RVSM" in Item 18 of the flight plan. Do not file a "W" in Item 10 of the flight plan. Additionally, the flight must accomplish the following requirements:

- a) Ferry flight must be the original first delivery flight to the owner or state of registry.
- b) Maintenance flight must have been formerly RVSM approved, but have experienced an equipment failure and is being flown to repair facilities in order to conduct the repairs necessary to regain RVSM approval.

5.2.1.3 HUMANITARIAN FLIGHTS: Non-RVSM approved aircraft on recognized mercy or humanitarian flights may flight plan and operate in RVSM airspace. Operators must file "STS/NON-RVSM" or "STS/NON RVSM" in Item 18 of the flight plan. Do not file a "W" in Item 10 of the flight plan.

*Note 1: Aircraft operators requesting approval as one of the above flights in 5.2.1.2 or 5.2.1.3, shall, if departing from aerodromes within the Piarco FIR, obtain approval from the Piarco ACC normally not more than 12 nor less than 4 hours prior to the intended departure time. Once approval has been obtained, Operators are responsible for communicating this approval prior to departure to all ACCs that are affected by the operation of the flight.*

*Note 2: Filing of the flight plan is **NOT** sufficient notification for flights proposing to operate in accordance with 5.2.1.2 or 5.2.1.3.*

## **6. PROCEDURES FOR SUSPENSION OF RVSM**

### **6.1 SUSPENSION OF RVSM**

- 6.1.1 Piarco ACC will consider suspending RVSM procedures within all or part of the Piarco FIR when there are pilot reports of greater than moderate turbulence or some other significant event. When RVSM procedures are suspended, the vertical separation minimum between all aircraft will be 2000 feet.
- 6.1.2 If the vertical separation aspect of RVSM must be suspended due to turbulence or some other significant event, the following guidelines should be applied to the situation:
- 6.1.2.1 The suspension of 1000 feet vertical separation should be for the minimum time necessary.
- 6.1.2.2 The suspension of 1000 feet vertical separation should be confined to the minimum geographical area necessary for safety or system efficiency.
- 6.1.2.3 The ATC unit or controller that is suspending the use of 1000 feet vertical separation should immediately provide the following information to all affected ATC Units and/or controller/s:
- a) The reason for the suspension;
  - b) Time that the suspension is effective;
  - c) The estimated time period 1000 feet separation will be suspended;
  - d) The routes or airspace affected by the suspension;
  - e) Any traffic immediately affected by the suspension.
- 6.1.2.4 Alternatives to suspension of 1000 feet vertical separation should also be considered, such as re-routes or lateral separation, if practical.
- 6.1.2.5 If the suspension will be for a significant period of time, a NOTAM should be issued that contains at a minimum the information contained in 6.1.2.3. a) to d).

## **7. OPERATIONAL PROCEDURES BEFORE ENTERING RVSM AIRSPACE – RVSM APPROVED AIRCRAFT**

- 7.1 Before entering the RVSM airspace, the pilot in command of RVSM approved aircraft must check that the following required equipment for flight in RVSM airspace is operating normally:
- a) two independent primary altimetry systems;
  - b) a Mode C-capable SSR transponder;
  - c) an altitude-alert system;
  - d) an automatic altitude-keeping device (AKD).
- 7.2 If any of the required equipment listed in paragraph 7.1 is not operating normally, the pilot must notify ATC before entering RVSM airspace using the phraseology “UNABLE RVSM DUE EQUIPMENT”.

## **8. OPERATIONAL PROCEDURES AFTER ENTERING RVSM AIRSPACE – RVSM APPROVED AIRCRAFT**

8.1 During changes of level, an aircraft must not overshoot or undershoot its Cleared Flight Level (CFL) by more than 150 feet (45m).

### **8.2 Failure of One Primary Altimetry System**

8.2.1 If one of the primary altimetry systems fails, but the remaining altimetry system is functioning normally, the pilot must:

- a) Couple that system to the AKD (Automatic Altitude-Keeping Device);
- b) Maintain increased vigilance of altitude-keeping;
- c) Notify ATC of the failure using the phraseology, “For information, operating on one Primary Altimeter System Only”.

### **8.3 Failure of All Primary Altimetry Systems**

8.3.1 If all primary altimetry systems fail, or are considered unreliable, the pilot must:

- a) Maintain the flight level indicated on the standby altimeter (if equipped) at time of failure or when considered unreliable;
- b) Alert nearby aircraft by turning on all exterior lights and, if not in direct contact with ATC, by broadcasting position, flight level, and intentions on 121.5 MHz;
- c) Notify ATC of the failure using the phraseology “UNABLE RVSM DUE EQUIPMENT”.

### **8.4 Divergence in Primary Altimetry Systems’ Indication**

8.4.1 If the primary altimeters diverge by more than 200 feet, the pilot must proceed as follows:

- a) Attempt to determine the defective system through established “trouble-shooting” procedures and/or comparing the primary altimeter displays to the standby altimeter (as corrected by correction card, if required);
- b) If the defective system can be determined, couple the functioning altimetry system to the AKD and proceed as in paragraph 8.2.1;
- c) If the defective system cannot be determined, proceed as in paragraph 8.3.1.

### **8.5 Failure of the Mode C-capable SSR Transponder**

8.5.1 If the mode C-capable transponder fails, the pilot must notify ATC of the failure using the phraseology “UNABLE RVSM DUE EQUIPMENT”.

### **8.6 Failure of the Altitude Alert System**

8.6.1 If the altitude alert system fails, the pilot must notify ATC of the failure using the phraseology “UNABLE RVSM DUE EQUIPMENT”.

### **8.7 Failure of the Automatic Altitude-Keeping Device (AKD)**

8.7.1 If the automatic altitude-keeping device (AKD) fails, the pilot must initiate the following actions sequentially:

- a) Maintain Cleared Flight Level (CFL);
- b) Evaluate the aircraft's capability to maintain altitude through manual control;
- c) Watch for conflicting traffic both visually and by reference to ACAS/TCAS;
- d) Alert nearby aircraft by turning on all exterior lights and, if not in direct contact with ATC, by broadcasting position, flight level, and intentions on 121.5 MHz;
- e) Notify ATC of the failure using the phraseology "UNABLE RVSM DUE EQUIPMENT".

## **9. SPECIAL PROCEDURES FOR IN-FLIGHT CONTINGENCIES IN OCEANIC AREAS**

### **9.1 Introduction**

9.1.1 Although all possible contingencies cannot be covered, the procedures in 9.2 and 9.3 provide for the more frequent cases such as:

- a) inability to maintain assigned flight level due to weather, aircraft performance or pressurization failure;
- b) en route diversion across the prevailing traffic flow; and
- c) loss of, or significant reduction in, the required navigation capability when operating in an airspace where the navigation performance accuracy is a prerequisite to the safe conduct of flight operations.

9.1.2 With regard to 9.1.1 a) and b), the procedures are applicable primarily when rapid descent and/or turn-back or diversion is required. The pilot's judgement shall determine the sequence of actions to be taken, having regard to the prevailing circumstances. ATC shall render all possible assistance.

### **9.2 General procedures**

9.2.1 If an aircraft is unable to continue the flight in accordance with its ATC clearance, and/or an aircraft is unable to maintain the navigation performance accuracy specified for the airspace, a revised clearance shall be obtained, whenever possible, prior to initiating any action.

9.2.2 The radiotelephony distress signal (MAYDAY) or urgency signal (PAN PAN) preferably spoken three times shall be used as appropriate. Subsequent ATC action with respect to that aircraft shall be based on the intentions of the pilot and the overall air traffic situation.

9.2.3 If prior clearance cannot be obtained, an ATC clearance shall be obtained at the earliest possible time and, until a revised clearance is received, the pilot shall:

- a) leave the assigned route or track by initially turning 90 degrees to the right or to the left. When possible, the direction of the turn should be determined by the position of the aircraft relative to any organized route or track system. Other factors which may affect the direction of the turn are:
  - 1) the direction to an alternate airport;
  - 2) any lateral offset being flown, and
  - 3) the flight levels allocated on adjacent routes or tracks.
- b) following the turn, the pilot should:



- 1) if unable to maintain the assigned flight level, initially minimize the rate of descent to the extent that is operationally feasible;
  - 2) take account of other aircraft being laterally offset from its track;
  - 3) acquire and maintain in either direction a track laterally separated by 15 NM from the assigned route or track in a multi-track system or otherwise, at a distance which is the mid-point from the adjacent parallel route or track; and
  - 4) once established on the offset track, climb or descend to select a flight level which differs from those normally used by 150 m (500 ft);
- c) establish communications with and alert nearby aircraft by broadcasting, at suitable intervals: aircraft identification, flight level, position (including the ATS route designator where defined) and intentions on the frequency in use and on 121.5 MHz (or, as a back-up, on the inter-pilot air-to-air frequency 123.45 MHz);
  - d) maintain a watch for conflicting traffic both visually and by reference to ACAS/TCAS;
  - e) turn on all aircraft exterior lights (commensurate with appropriate operating limitations);
  - f) keep the SSR transponder on at all times; and
  - g) take action as necessary to ensure the safety of the aircraft.

#### 9.2.4 *Extended range operations by aircraft with two-turbine power-units (ETOPS)*

9.2.4.1 If the contingency procedures are employed by a twin-engine aircraft as a result of an engine shutdown or failure of an ETOPS critical system, the pilot should advise ATC as soon as practicable of the situation, reminding ATC of the type of aircraft involved, and request expeditious handling.

### 9.3 Weather deviation procedures

#### 9.3.1 *General*

*Note.- The following procedures are intended for deviations around adverse weather.*

9.3.1.1 When the pilot initiates communications with ATC, a rapid response may be obtained by stating "WEATHER DEVIATION REQUIRED" to indicate that priority is desired on the frequency and for ATC response. When necessary, the pilot should initiate the communications using the urgency call "PAN PAN" (preferably spoken three times).

9.3.1.2 The pilot shall inform ATC when weather deviation is no longer required, or when a weather deviation has been completed and the aircraft has returned to the centre line of its cleared route.

#### 9.3.1.3 *Actions to be taken when controller-pilot communications are established*

9.3.1.3.1 The pilot should notify ATC and request clearance to deviate from track, advising, when possible, the extent of the deviation expected.

9.3.1.3.2 ATC should take one of the following actions:

- a) when appropriate separation can be applied, issue clearance to deviate from track; or
- b) if there is conflicting traffic and ATC is unable to establish appropriate separation, ATC shall:
  - 1) advise the pilot of inability to issue clearance for the requested deviation;

- 2) advise the pilot of conflicting traffic; and
- 3) request the pilot's intentions.

*Sample Phraseology: "UNABLE (requested deviation), TRAFFIC IS (call sign, position, altitude, direction), ADVISE INTENTIONS"*

9.3.1.3.3

The pilot should take the following actions:

- a) comply with the ATC clearance issued; or
- b) advise ATC of intentions and execute the procedures detailed in 9.3.1.3.4 below.

9.3.1.3.4

*Actions to be taken if a revised ATC clearance cannot be obtained.*

*Note. — The provisions of this section apply to situations where a pilot needs to exercise the authority of a pilot-in-command under the provisions of Annex 2, Para. 2.3.1.*

9.3.1.3.5

If the aircraft is required to deviate from track to avoid weather and prior clearance cannot be obtained, an ATC clearance shall be obtained at the earliest possible time. Until an ATC clearance is received the pilot shall take the following actions:

- a) if possible, deviate away from an organized track or route system;
- b) establish communications with and alert nearby aircraft by broadcasting, at suitable intervals: aircraft identification, flight level, position (including ATS route designator where defined) and intentions, on the frequency in use and on 121.5 MHz (or, as a back-up, on the inter-pilot air-to-air frequency 123.45 MHz);
- c) watch for conflicting traffic both visually and by reference to ACAS/TCAS;  
*Note.— If, as a result of actions taken under the provisions of 9.3.1.3.5 b) and c) above, the pilot determines that there is another aircraft at or near the same flight level with which a conflict may occur, then the pilot is expected to adjust the path of the aircraft, as necessary, to avoid conflict.*
- d) turn on all aircraft exterior lights (commensurate with appropriate operating limitations);
- e) for deviations of less than 10 NM remain at a level assigned by ATC;
- f) for deviations greater than 10 NM, when the aircraft is approximately 10 NM from track, initiate a level change in accordance with the Table below;

<i>Route centre line track</i>	<i>Deviations &gt; 10 NM</i>	<i>Level change</i>
EAST 000° - 179° magnetic	LEFT	DESCEND 90 m (300 ft)
	RIGHT	CLIMB 90 m (300 ft)
WEST 180° - 359° magnetic	LEFT	CLIMB 90 m (300 ft)
	RIGHT	DESCEND 90 m (300 ft)

- g) when returning to track, be at its assigned flight level when the aircraft is within approximately 10 NM of the centre line; and
- h) if contact was not established prior to deviating, continue to attempt to contact ATC to obtain a clearance. If contact was established, continue to keep ATC advised of intentions and obtain essential traffic information.

## 10. SPECIAL PROCEDURES FOR STRATEGIC LATERAL OFFSETS IN OCEANIC CONTROLLED AREA (OCA) AND REMOTE CONTINENTAL AIRSPACE WITHIN CAR AND SAM REGIONS

*Note.— The following lateral offset procedures are applicable for the mitigation of the increasing overlap probability due to increased navigation accuracy and wake turbulence encounters.*

- 10.1 The use of highly accurate navigation systems (such as the global navigation satellite system (GNSS)) by an increasing proportion of the aircraft population has had the effect of reducing the magnitude of lateral deviations from the route centre line and consequently increasing the probability of a collision should a loss of vertical separation between aircraft on the same route occur.
- 10.2 The application of lateral offsets to provide lateral spacing between aircraft, in accordance with the procedures specified in 10.3 and 10.4, can be used to mitigate the effect of this reduction in random lateral deviations, thereby improving overall ATS system safety.
- 10.3 The application of lateral offsets requires authorization from the ATS authority responsible for the airspace concerned. The following considerations shall be taken into account by the ATS authority when planning authorization of the use of strategic lateral offsets in a particular airspace:
  - a) Strategic lateral offsets shall only be authorized in en-route oceanic or remote continental airspace. Where part of the airspace in question is within radar coverage, transiting aircraft should normally be allowed to initiate or continue offset tracking.
  - b) Strategic lateral offsets may be authorized for the following types of routes (including where routes or route systems intersect):
    - 1) uni-directional and bi-directional routes; and
    - 2) parallel route systems where the spacing between route centre lines is not less than 55.5km (30 NM).
  - c) In some instances it may be necessary to impose restrictions on the use of strategic lateral offsets, e.g. where their application may be inappropriate for reasons related to obstacle clearance.
  - d) These offset procedures should be implemented on a regional basis after coordination between all States involved.
  - e) The routes or airspace where application of strategic lateral offsets is authorized shall be promulgated in the aeronautical information publication (AIP); the procedures to be followed by pilots are depicted in the next para. 10.4
  - f) Air traffic controllers shall be made aware of the airspace within which strategic lateral offsets are authorized.

#### 10.4 Lateral offset procedures to be applied by pilots

10.4.1 In the application of strategic lateral offsets, pilots should take the following points into consideration:

- a) Offsets shall only be applied in airspace where this has been approved by the appropriate ATS authority.
- b) Offsets shall be applied only by aircraft with automatic offset tracking capability.
- c) The decision to apply a strategic lateral offset is the responsibility of the flight crew.
- d) The offset shall be established at a distance of one or two nautical miles to the right of the centre line relative to the direction of flight.
- e) The strategic lateral offset procedure has been designed to include offsets to mitigate the effects of wake turbulence of preceding aircraft. If wake turbulence needs to be avoided, one of the three available options (centreline, 1 NM or 2 NM right offset) shall be used.
- f) In airspace where the use of lateral offsets has been authorized, pilots are not required to inform air traffic control (ATC) that an offset is being applied.
- g) Aircraft transiting areas of radar coverage in airspace where offset tracking is permitted may initiate or continue an offset.

10.5 Pilots may, if necessary, contact other aircraft on the air-to-air frequency 123.45 MHz to coordinate offsets.

## 11. RVSM PHRASEOLOGY

11.1 The following RVSM phraseology will be used in RVSM operations - Pilot/Controller communications. \* Denotes pilot transmission

CIRCUMSTANCES	PHRASEOLOGIES
... to ascertain RVSM approval status of an aircraft	CONFIRM RVSM APPROVED
... to report RVSM approved Status	* AFFIRM RVSM
... to report RVSM non approved status followed by supplementary information	* <b>NEGATIVE RVSM</b> ( <i>supplementary information, e.g. State Aircraft</i> )
... to deny ATC clearance into RVSM airspace	UNABLE ISSUE CLEARANCE INTO RVSM AIRSPACE, MAINTAIN ( <i>or DESCEND TO, or CLIMB TO</i> ) <i>level</i>
... to report when severe turbulence affects the ability of an aircraft to maintain height-keeping requirements for RVSM	* UNABLE RVSM DUE TURBULENCE
... to report that the equipment of an aircraft has degraded below minimum aircraft system performance standards	* UNABLE RVSM DUE EQUIPMENT
...to request an aircraft to provide information as soon as RVSM-approved status has been regained or the pilot is ready to resume RVSM operations	REPORT WHEN ABLE TO RESUME RVSM
... to request confirmation that an aircraft has regained RVSM approved status or a pilot is ready to resume RVSM operations	CONFIRM ABLE TO RESUME RVSM
... to report ability to resume RVSM operations after an equipment or weather-related contingency	* READY TO RESUME RVSM

11.2 The following RVSM phraseology will be used in RVSM operations when coordinating between ATS units

CIRCUMSTANCES	PHRASEOLOGIES
... to verbally supplement estimate messages of aircraft non-approved for RVSM or to verbally supplement an automated estimate message exchange that does not automatically transfer information from Item 18 of the flight plan followed by supplementary information, as appropriate	a) <b>NEGATIVE RVSM</b> [( <i>supplementary information, e.g. State Aircraft</i> )]
... to communicate the cause of a contingency relating to an aircraft that is unable to conduct RVSM operations due to severe turbulence or other severe meteorological phenomena or equipment failure, as applicable	b) <b>UNABLE RVSM DUE TURBULENCE (or EQUIPMENT, as applicable)</b>

Revises AIC 03/16