

ENR 1.8 REGIONAL SUPPLEMENTARY PROCEDURES (DOC 7030)

The supplementary procedures in force are given in their entirety. Differences are shown in quotation marks.

**1. Visual flights rules (VFR)
 (ICAO Annex 2, 4.8)**

1.1 VFR flights to be operated within a control zone established at an aerodrome serving international flights and in specified portions of the associated terminal control area shall:

- a. have two-way communications;
- b. obtain permission from the appropriate air traffic control unit; and
- c. report positions, as required.

Note. - The phrase “specified portions of the associated terminal control area” is intended to signify at least those portions of the TMA used by international IFR flights in association with approach, holding, departure and noise abatement procedures.

2. Special Application of Instrument Flight Rules

2.1 Flights above flight level 150 shall be conducted in accordance with the instrument flight rules even when not operating in instrument meteorological conditions.

**3. Air Traffic Advisory Service
 (PANS-RAC, Part VI, 1.4)**

3.1 All IFR flights shall comply with the procedures for air traffic advisory service when operating in advisory airspace.

**4. Longitudinal Separation
 (PANS-RAC, Part III - 8 and 9)**

4.1 Minimum longitudinal separation shall be 20 minutes; except that the lower minima in 8 of Part III of the PANS-RAC may be applied , or further reduced in accordance with 9 of the same Part, where the conditions specified in the relevant PANS-RAC provisions are met.

5. Reduced Vertical Separation Minimum (RVSM) in the Mauritius FIR

5.1 Identification of RVSM Airspace

5.1.1 RVSM is applicable in that volume of airspace between FL 290 and FL 410 inclusive in the Mauritius FIR.

Only RVSM approved aircraft and non-RVSM approved State aircraft (Military, Police and Customs) will be cleared to operate in the Mauritius RVSM airspace. Vertical Separation Minimum (VSM) of 1000 ft will be applied between RVSM approved aircraft. Otherwise 2000 ft VSM will be applied.

5.1.2 There is **NO** Transition Airspace in the Mauritius FIR.

5.2 Table of Cruising Levels for the Mauritius RVSM Airspace

5.2.1 Cruising levels within Mauritius Airspace will be organized in accordance with the Table of Cruising Levels contained in ICAO Annex 2, Appendix 3. a). The cruising levels appropriate to the direction of flight within the Mauritius FIR are illustrated below:

Cruising levels as per direction of flight – FL290 to FL410		
Route from 180 degrees to 359 degrees*		Route from 000 degrees to 179 degrees *
← FL 430 (non RVSM level above RVSM airspace)		
		FL410 →
← FL400		FL390 →
← FL380		FL370 →
← FL360		FL350 →
← FL340		FL330 →
← FL320		FL310 →
← FL300		FL290 →
← FL280 (non RVSM level below RVSM airspace)		

5.3 Airworthiness and Operational Approval and Monitoring

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5.3.1 Approval Process

5.3.1.1 Each aircraft type that an operator intends to use in RVSM airspace should have received RVSM airworthiness approval from the responsible authority, prior to approval being granted for RVSM operations in Mauritius RVSM airspace, including the approval of continued airworthiness programmes. Detailed technical guidance material on the airworthiness, continued airworthiness, and the operational practices and procedures for the Mauritius RVSM airspace is provided in the Joint Aviation Authorities Administrative and Guidance Material, Section 1: General Part 3: Temporary Guidance Leaflet No.6. (Refer as “JAA TGL6”). Given that the technical aircraft RVSM requirements are global requirements, guidance developed through RVSM implementation in other regions may be consulted, such as FAA 91-RVSM.

5.4 ACAS II and Transponder Equipage

5.4.1 All civil aircraft intending to operate within the Mauritius RVSM airspace shall be equipped with ACAS II Version 7.0 (TCAS II systems with Version 7.0 incorporated meet ICAO ACAS II standards).

5.5 In-flight Procedures Within RVSM Airspace

5.5.1 Before entering Mauritius FIR RVSM airspace, pilots should review the status of required equipment. (See Appendix 4 of FAA IG 91-RVSM for pilot RVSM procedures). The following equipment should be operating normally:

- a) two independent altitude measurement systems;
- b) at least one altitude-reporting transponder
- c) an altitude alerting system
- d) one automatic altitude control system

5.5.2 Pilots must notify ATC whenever the aircraft:

- a) is no longer RVSM compliant due to equipment failure; or
- b) experiences loss of redundancy of altimetry systems; or
- c) encounters turbulence that affects the capability to maintain flight level.

5.5.3 During cleared transition between levels, the aircraft should not overshoot or undershoot the assigned flight level by more than 150 ft (45 m).

5.6 Special Procedures For In-Flight Contingencies In Mauritius RVSM Airspace.

5.6.1 General Procedures

5.6.1.1 An in-flight contingency affecting flight in the Mauritius RVSM Airspace pertains to unforeseen circumstances that directly impact on the ability of one or more aircraft to operate in accordance with the vertical

5.3.2 Aircraft Monitoring

5.3.2.1 System performance monitoring is necessary to ensure that the implementation and continued operation of RVSM meets the safety objectives. Operators are required to participate in the RVSM aircraft monitoring programme. This is an essential element of the RVSM implementation programme in that it confirms that the aircraft altitude-keeping performance standard is being met. South Africa (ATNS) is acting as “Regional Monitoring Agency” (RMA) on behalf of ICAO. RVSM compliance and monitoring data are being closely coordinated with the North Atlantic Central Monitoring Agency (NATCMA) and the Asia/Pacific Approvals Registration and Monitoring Organization (APARMO), Euro-Control and MID RMA.

Note: Aircraft which have been monitored successfully in the NAT, Europe, Middle East, Pacific RVSM and CAR/SAM monitoring programmes do not need additional monitoring, and will be taken into account in determining the specific AFI RVSM monitoring requirements

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

AFI Regional Monitoring Agency
ATNS,

- navigation performance requirements of the Mauritius RVSM Airspace.
- 5.6.1.2 Pilots shall inform ATC, as soon as possible, of any circumstances where the vertical navigation performance requirements for the Mauritius RVSM Airspace cannot be maintained.
- 5.6.1.3 In the 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.
- 5.6.1.4 Air traffic control actions will be based on the intentions of the pilot, the overall air traffic situation, and the real-time dynamics.
- 5.6.1.5 Suspension of RVSM refers to a discontinuance of the use of a vertical separation minimum of 1000 ft between RVSM approved aircraft operating within the Mauritius RVSM Airspace.
- 5.6.1.6 A vertical separation minimum of 2000 ft shall then be applied between all aircraft operating within the portion of the Mauritius RVSM Airspace where RVSM has been suspended, regardless of the RVSM approval status of the aircraft.
- 5.6.2 Degradation of Aircraft Equipment**
- 5.6.2.1 The failure in flight of any component of the Minimum Equipment List (MEL) required for RVSM operations shall render the aircraft non-RVSM approved.
- 5.6.2.2 Where an aircraft on ADS-C displayed level differs from the cleared flight level by 300 ft or more, the controller shall inform the pilot accordingly and the pilot shall be requested to check the pressure setting and confirm the aircraft's level.
- 5.6.2.3 When the pilot of an RVSM approved aircraft confirms that the aircraft's equipment no longer meets the RVSM Minimum Aviation System Performance Standards (MASPS), the controller shall consider the aircraft as non-RVSM approved and take action immediately to provide a minimum vertical separation of 2000 ft, or an appropriate horizontal separation minimum, from all other aircraft concerned. If unable, the controller shall initially provide traffic information.
- 5.6.2.4 Aircraft rendered non-RVSM compliant due equipment degradation, shall normally be cleared out of the Mauritius RVSM Airspace by air traffic control. However due to the high fuel burnt at low levels, these aircraft (Oceanic flights) may be allowed to continue their flight into RVSM airspace with 2000 feet vertical separation and as agreed with the adjacent centre concerned.
- 5.6.3 Severe Turbulence – Not Forecast (single aircraft)**
- 5.6.3.1 When an aircraft operating in the Mauritius RVSM Airspace encounters severe turbulence due to weather which the pilot believes will impact the aircraft's capability to maintain its cleared flight level, the pilot shall inform ATC. ATC will request pilot's intentions and accommodate pilot requests accordingly. (eg. issue clearance to deviate from tracks or change of levels).
- 5.6.3.2 ATC shall co-ordinate the circumstances of an RVSM approved aircraft that is unable to maintain its cleared flight level due to severe turbulence by verbally supplementing the estimate message with: **"UNABLE RVSM DUE TURBULENCE"**.
- 5.6.3.3 An aircraft experiencing severe turbulence while operating within the Mauritius RVSM Airspace need not be cleared out of RVSM airspace.
- 5.6.4 Severe Turbulence – Not Forecast (multiple aircraft)**
- 5.6.4.1 When a controller receives pilot reports of severe turbulence which had not been forecasted, and which could impact multiple aircraft with regards to their ability to maintain the cleared flight level within the Mauritius RVSM Airspace, the controller shall immediately provide a minimum vertical separation of 2000 ft or an appropriate horizontal separation between aircraft concerned.
- 5.6.4.2 ATC shall, to the extent possible, accommodate pilot's requests for flight levels and/or route changes, and pass traffic information as required.
- 5.6.4.3 ATC shall solicit reports from other aircraft to determine whether RVSM should be suspended entirely or within a specific flight level band and/or area.
- 5.6.4.4 Any suspension of RVSM operation shall be co-ordinated with adjacent centres

5.6.5 Severe Turbulence – Forecast

5.6.5.1 Where a meteorological forecast is predicting severe turbulence within the Mauritius RVSM Airspace, ATC shall determine whether RVSM should be suspended, and, if so, the period of time, and specific flight level(s) and/or area.

5.6.5.2 The importance of obtaining timely accurate forecasts of severe turbulence should be stressed within agreements with the appropriate meteorological services office responsible for the dissemination of such information for the area.

5.7 Flight Planning Requirements

5.7.1 Detailed RVSM procedures are contained in the Regional Supplementary Procedures, DOC 7030/4 AFI Region.

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

5.7.3 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.

5.7.4 Operators of non-RVSM approved State aircraft with a requested flight level of FL 290 or above shall insert “*STS/NONRVSM*” in Item 18 of the ICAO Flight Plan.

5.7.5 Operators of RVSM approved aircraft and non-RVSM approved State aircraft intending to operate within the Mauritius RVSM Airspace shall include the following in Item 15 of the ICAO Flight Plan:

- (i) the **entry point** at the lateral limits of the Mauritius RVSM Airspace, and the requested flight level for that portion of the route commencing immediately after the RVSM entry point; and
- (ii) the **exit point** at the lateral limits of the Mauritius RVSM Airspace, and the requested flight level for that portion of the route commencing immediately after the RVSM exit point.

5.7.6 Operators of non-RVSM approved civil aircraft shall flight plan to operate outside of the AFI RVSM Airspace.

5.7.7 Controllers shall confirm RVSM status of aircraft on initial contact with Mauritius Centre.

5.8 Phraseology

5.8.1 The following RVSM R/T phraseology shall be used:

ATC wish to know RVSM status of flight	CONFIRM RVSM APPROVED
Pilot indication that flight is RVSM approved	AFFIRM RVSM
Pilot indication that flight is non RVSM approved	NEGATIVE RVSM
Pilot of State aircraft indicating that flight is non RVSM approved	NEGATIVE RVSM STATE AIRCRAFT
ATC refuse clearance into RVSM Airspace	UNABLE CLEARANCE INTO RVSM AIRSPACE, MAINTAIN [or DESCEND TO, or CLIMB TO] FL ...
Pilot reporting severe turbulence / weather affecting ability to maintain RVSM height keeping requirements	UNABLE RVSM DUE TURBULENCE
Pilot reporting equipment degraded below RVSM requirements	UNABLE RVSM DUE EQUIPMENT
ATC requesting pilot to report when able to resume RVSM	REPORT ABLE TO RESUME RVSM
Pilot ready to resume RVSM after equipment/weather contingency	READY TO RESUME RVSM

5.9 Air-ground Communication Failure

5.9.1 The air-ground communication failure procedures specified in ICAO PANS-ATM Doc 4444 shall be applied.

5.9.2 The ICAO Regional Supplementary Procedures for AFI specify that the applicable vertical separation minimum between an aircraft experiencing a communication failure in flight and any other aircraft, where both aircraft are operating within the Mauritius RVSM, shall be 2000ft,

unless an appropriate horizontal separation minimum exists.

6. Special procedures for In-Flight Contingencies in Oceanic airspace of Mauritius FIR

6.1 General procedures

6.1.1 If an aircraft is unable to continue its flight in accordance with air traffic control 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.

6.1.2 The radio-telephony 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.

6.1.3 If prior clearance has not been obtained, an ATC clearance shall be obtained at the earliest sought possible time and, until a revised clearance is received, the pilot shall:

6.1.3.1 Leave the assigned route or track by initially turning 90° 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 facts which may affect the direction of the turn are:

- a. the direction to an alternate airport,
- b. terrain clearance,
- c. any lateral offset to be flown, and
- d. the flight levels allocated on adjacent routes or tracks

6.1.3.2 Following the turn, the pilot should

- a. if unable to maintain the assigned flight level initially minimize the rate of descent to the extent that is operationally feasible;
- b. take account of other aircraft to be laterally offset from its track;
- c. acquire and maintain in either direction a track laterally separated by 15NM (28KM) from the assigned route; and
- d. once established on the offset track, climb or descend to select a flight level which differs from those normally used by 500Ft (150M)

6.1.3.3 Establish communications with a nearby aircraft by broadcasting, at suitable intervals, aircraft identification, flight level, position

(including the ATS route designator or the track code, as appropriate) and intentions on the frequencies in use and on 121.5MHz (or a backup, or the inter-pilot air to air frequency 123.45MHz)

6.1.3.4 Maintain a visual watch for conflicting traffic visually and by reference to ACAS (if equipped)

6.1.3.5 Turn on all aircraft exterior lights (commensurate with appropriate operating limitations)

6.1.3.6 Keep the SSR transponder on at all times

6.1.3.7 Take action as necessary to ensure the safety of the aircraft.

6.1.4 When leaving the assigned track to acquire and maintain the track laterally separated by 15NM (28KM), the flight crew should, where practicable avoid bank angles that would result in overshooting the track to be acquired

6.1.5 Extended range operations by aeroplane with two turbine power units (ETOPS):

6.1.5.1 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.

6.2 Weather deviation procedure

6.2.1 General

Note: The following procedures are intended for deviations during adverse meteorological condition.

6.2.1.1 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)

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

6.2.2 Actions to be taken when controller-pilot communications are established

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

6.2.2.2 ATC will 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:
 - i. advise the pilot of inability to issue clearance for requested deviation
 - ii. advise the pilot of conflicting traffic, and
 - iii. request the pilot's intentions

6.2.2.3 The pilot should take the following actions:

- a) Comply with air traffic control clearance issued; or
- b) Advise ATC of intentions and execute the procedures detailed in para 3.3 below.

6.3 Actions to be taken if a revised air traffic control clearance cannot be obtained

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

6.3.1 If the aircraft is required to deviate from track to avoid adverse meteorological conditions 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 the ATS route designator or the track code) and intentions, on the frequency in use and on 121.5MHz (or, as a backup, on the inter - pilot air-to-air frequency 123.45MHz).
- c) watch for conflicting traffic both visually and by reference to ACAS (if equipped);

Note - If, as a result of action taken under the provisions of 3.3.1 (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 10NM (19KM) remain at the level assigned by ATC;
- f) for deviations of greater than 10NM (19KM), when the aircraft is approximately 10 NM (19KM) from track, initiate a level change in accordance with table given below:

Route center-line track	Deviation > 10NM (19KM)	Level Change
EAST 000°-179° magnetic	LEFT	DESCENT 300 FT (90M)
	RIGHT	CLIMB 300 FT (90M)
WEST 180° -359° magnetic	LEFT	CLIMB 300 FT (90M)
	RIGHT	DESCENT 300FT (90M)

- g) when returning to track, be at its assigned flight level, when the aircraft is within approximately 10NM (19KM) of the centreline, and
- h) if contact was not established prior to deviating, continue attempt to contact ATC to obtain a clearance. If contact was established, continue to keep ATC advised of intentions and obtain essential traffic information.

7. AFI GMU Height Monitoring Service

7.1 AFI has access to three GMU's, which will be utilized for Height Monitoring in AFI and all carry certification papers, EASA Form 1, for operation on board aircraft either on the flight deck or within the cabin. It should be recalled

that GMU Height Monitoring has been operational in other regions for some time and is thus a safe and tested method of gathering Height Monitoring Data. Further to this ARMA will issue to the relevant authorities on request a set of the certification papers for reference purposes. Requests should be made to ARMA/ARINC for these copies either electronically or via fax if required.

7.2 Operators requiring Height Monitoring should use the following points of contact in order to obtain information, secure the service and plan the event:

- Preferably direct contact with ARINC on email address afirvsm@arinc.com
- If unsure of the process make contact with the ARMA on email address afirma@atns.co.za
- The Operational Base in Johannesburg will serve as the planning base for the event. The operator will be provided with contact details for the Johannesburg Operational Base when appropriate.

7.3 No Height Monitoring results will be released from the Operations Base, as they will only have raw unprocessed data, which will need to be processed at the Gatwick OCC. This raw data is of no use to the operator until processed.

7.4 Operators are requested to refrain from contacting ARINC directly for the outcome of the Height Monitoring flight as ARINC may not release this information.

7.5 All Height Monitoring results will be forwarded to the ARMA by ARINC and released officially to the applicable operator by the ARMA.

8. Strategic Lateral Offset Procedures (SLOP)

8.1 SLOP, in compliance with ICAO Doc 4444 (PANS-ATM) provisions, will permit aircraft to fly on a parallel track to the right of the centre line relative to the direction of flight. The use of SLOP does not affect application of prescribed separation standards.

8.2 The application of Strategic Lateral Offset Procedures is intended to reduce the risk of collision due to a loss of planned vertical separation.

8.3 SLOP is applicable between FL290 and FL410 within the Mauritius Flight Information Region.

8.4 Requirements for application of SLOP:

8.4.1 Offsets must only be applied by aircraft with automatic offset tracking capability.

8.4.2 The offset must only be applied during the enroute phase of flight.

8.4.3 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.

8.4.4 The offset must not exceed two nautical miles right of centre line.

8.4.5 The decision to apply a strategic lateral offset is the responsibility of the flight crew.

8.4.6 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.

8.4.7 Position reports must be based on the current ATC clearance and not the exact coordinates of the offset from track e.g. "Mauritius Centre, Callsign..., position UTIVA 0800 flight level 290, estimate.... etc".

8.4.8 The strategic lateral offset procedures have also been designed to include offsets to mitigate the effects of wake turbulence of preceding aircraft. If wake turbulence needs to be avoided, pilot must use one of the three available options (centreline, 1 NM or 2NM right offset). Pilots may contact other aircraft on the air to air frequency, 123.45MHz, as necessary, to coordinate the best wake turbulence offset option. As noted above it is not necessary to notify air traffic control of approved offsets.

8.4.9 The offset must not be used in addition to diversions or other tactical deviations, e.g. weather deviation.