



CAMEROON CIVIL AVIATION AUTHORITY – DIRECTION OF AVIATION SAFETY

MANUAL	REF	DSA.AOC.MAN.001
AIR OPERATOR CERTIFICATION AND SURVEILLANCE MANUAL	ED	02 DU 01/04/2015
	REV	00 DU 01/04/2015

CHAPTER 20 REDUCED VERTICAL SEPARATION MINIMA (RVSM) OPERATOR APPROVAL



DSA.AOC.CHL.080

20.1 BACKGROUND AND OBJECTIVE

20.1.1 “Arrêté N°2006-00606-MINT, Chapter 7” prohibits the operation of an aircraft within RVSM airspace unless authorization has been received from CCAA. The “Instruction N°00456/CCAA/DNA du 22 Août 2006 relative à la circulation dans les espaces à minimum de séparation verticale réduit” prescribe the requirements that must be met prior to issuing such authorization.

20.1.2 RVSM refers to a vertical separation minimum of 300 m (1 000 ft) between FL 290 and L 410 inclusive. This chapter provides guidance for evaluating an application by an operator to conduct flights in airspace where RVSM is applied and, once applicable requirements are met, for issuing operations specifications. Guidance is also provided on the on-going monitoring of the RVSM approval such as reports from incidents and from the Regional Monitoring Agency (RMA).

20.2 RVSM APPROVAL GENERAL

20.2.1 Where RVSM is applied for, the specific aircraft type or types that the operator intends to use will need to be approved by CCAA. RVSM approval will encompass the following elements:



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- a) airworthiness approval (including continued airworthiness). Airworthiness inspectors shall ensure the aircraft is approved as meeting the requirements for operation in RVSM airspace and that the aircraft altimetry and height-keeping equipment is maintained in accordance with approved procedures and servicing schedules; and
- b) operational approval. Air operators will be required to establish procedures for operations in RVSM airspace and incorporate these procedures into their training programme for flight crew.

20.2.2 RVSM approval issued for one region is valid globally provided that operating procedures specific to a given region are outlined in the operations manual. If the air operator wishes to conduct RVSM flights outside of AFRICA AND INDIAN OCEAN (AFI) Region, they shall ensure that information for RVSM procedures in other applicable regions is made available to flight crews.

20.2.3 “CCAA, Direction of Aviation Safety” shall be responsible for confirmation of the approval status of an aircraft/operator and shall apply the following measures:

- a) maintaining a comprehensive record of all approvals granted for operations in RVSM airspace for each registered aircraft;
- b) providing the approvals records in 20.2.3, a) to the Regional Monitoring Agency (RMA) for inclusion in its regional RVSM-approvals database;
- c) reviewing the RVSM approval status of aircraft/operators when conducting routine inflight cockpit inspections; and
- d) reviewing the RVSM approval status of aircraft identified in reports received from the RMA as not complying with required height-keeping performance or having had damage that may affect the height-keeping performance.

20.2.4 All approvals will be applicable to an individual aircraft or to a group of aircraft, as defined in 20.2.5, that are nominally identical in aerodynamic design and items of equipment contributing to height-keeping accuracy.



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20.2.5 For aircraft to be considered as part of a group for the purposes of airworthiness approval, the following conditions shall be satisfied:

- a) the aircraft shall have been constructed to a nominally identical design and shall be approved on the same Type Certificate (TC), TC amendment or Supplemental TC, as applicable;
- b) the static system of each aircraft shall be nominally identical. The static source error (SSE) corrections shall be the same for all aircraft of the group; and
- c) the avionics units installed on each aircraft to meet the minimum RVSM equipment criteria shall comply with the manufacturer's same specification and have the same part number.

Note.— Aircraft that have avionics units which are of a different manufacturer or part number may be considered part of the group if it can be demonstrated that this standard of avionics equipment provides equivalent system performance.

20.3 CONTENT OF THE OPERATOR'S RVSM APPLICATION

20.3.1 The following information is required to be provided to the CCAA by an air operator applying for RVSM approval at least 60 days prior to the intended start of RVSM operations.

- a) Airworthiness documents and a maintenance programme .The applicant shall provide documentation to confirm that each aircraft is certificated for RVSM operations. An RVSM maintenance programme shall be submitted to CCAA for approval.
- b) Description of aircraft equipment. The applicant shall provide a configuration list that details all components and equipment relevant to RVSM operations.
- c) Operations manuals and checklist. The appropriate manuals and checklists shall be revised to include information/guidance on standard operating procedures as outlined in Chapter 4, Section 4.2 of the ICAO's Manual on Implementation of a 300 m (1 000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive (Doc 9574).



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- d) Operations training programmes. The air operator shall submit training syllabi to CCAA to show that the RSVM operating and contingency procedures, and any items related to RVSM operations are incorporated in initial and, where warranted, recurrent training programmes. Training for flight dispatchers shall also be included if the operator's approved method of control and supervision of flight operations requires the use of flight operations officer/flight dispatcher personnel.

Note.— Certain items may already be adequately standardized in existing operator training programmes and operating practices. If this is found to be the case, then the intent of this 20.3.1 c) and d) can be considered to be met.

- e) Minimum equipment list (MEL). A MEL amendment to include items pertinent to operating in RVSM airspace. Note.— The MEL may already include this information.
- f) Plan for participation in monitoring programmes. The operator shall provide a plan for participation in the regional monitoring programme.



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20.4 MONITORING PROGRAMMES

20.4.1 As outlined in [State regulation Part XX], a programme to monitor or verify aircraft height-keeping performance is a necessary element of RVSM approval. Monitoring programmes have the primary objective of observing and evaluating aircraft height-keeping performance to validate crew procedures, aircraft performance and maintenance procedures. Each aircraft or group of aircraft is required to conduct height-keeping performance monitoring as soon as possible, but no later than six months after receiving the approval. Subsequently, a minimum of two aeroplanes of each aircraft type grouping of the operator will have their height-keeping performance monitored, at least once every two years or within intervals of 1 000 flight hours per aeroplane, whichever period is longer. If an operator aircraft type grouping consists of a single aeroplane, monitoring of that aeroplane shall be accomplished within the specified period.

20.4.2 The Regional Monitoring Agency will provide other information concerning aircraft grouping and monitoring requirements.

20.5 ISSUANCE OF OPERATIONS SPECIFICATION

20.5.1 Operations and airworthiness inspectors will review the air operator's submission utilizing Job Aid RVSM-001. If all requirements have been met the operations specification for RVSM shall be issued. In the operations specification specific approval column, list the aircraft group or specific aircraft type as applicable.

20.5.2 CCAA shall provide the Regional Monitoring Agency with information concerning the aircraft RVSM approval by completion of the Record of Approval to Operate in RVSM Airspace form (available on the Regional Monitoring Agency website <http://www.atns.co.za/arma-rvsm/about-arma>). CCAA operations inspectors will follow-up to ensure that within six months the height-keeping performance monitoring requirements have been completed by the air operator and subsequently as outlined in 20.4.1 above.



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20.6 REMOVAL OF RVSM APPROVAL

20.6.1 The operator shall report any altitude errors when operating in RVSM airspace to the CCAA within 72 hours with initial analysis of causal factors and measures to prevent further events.

Errors that shall be reported and investigated are any vertical deviation equal to or greater than 90 m (300 ft), for any reason, from cleared levels whether the deviation causes an incident or not.

20.6.2 Height-keeping errors fall into two broad categories: errors caused by malfunction of aircraft equipment and operational errors. An operator who consistently commits errors of either variety may lose its approval for RVSM operations. If a problem is identified that is related to one specific aircraft, then RVSM approval may be removed from the operator for that specific aircraft.

20.7 ENFORCEMENT

20.7.1 Where CCAA is advised that an air operator has operated in RVSM airspace without approval, enforcement action will be taken in accordance with regulations and CCAA enforcement policy.



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CHAPTER 21 EXTENDED DIVERSION TIME OPERATIONS (EDTO)

21.1 BACKGROUND AND OBJECTIVES

21.1.1 Regulations require an operator to be specifically approved by the CCAA when it operates, an aeroplane(s) with two or more turbine engines on a route(s) where the diversion time to an en-route alternate aerodrome from any point on the route is beyond a distance expressed as a threshold time established by regulations and must remain within a distance expressed as a maximum diversion time established by the CCAA.

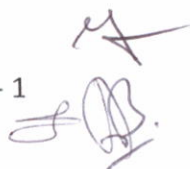
21.1.1.1 The conversion to distance for threshold times and maximum diversion times are calculated in international standard atmosphere (ISA) and still-air conditions at the one-engine-inoperative cruise speed for aeroplanes with two turbine engines and at the all engines operating cruise speed for aeroplanes with more than two turbine engines.

21.1.2 In order to be approved to conduct operations beyond the threshold distance as outlined in 21.1.1, the air operator shall meet the following requirements.

21.1.2.1 Aeroplanes

- a) For all aeroplanes:
 - i. the most limiting EDTO significant system time limitation, if any indicated in the aeroplane flight manual (directly or by reference) and relevant to that particular operation is not exceeded; and
 - ii. the additional fuel required by regulations shall include the fuel necessary to comply with the EDTO critical fuel scenario as established by CCAA.

- b) For aeroplanes with two turbine engines, the aeroplane is EDTO certified and the following has been verified:
 - i. reliability of the propulsion system;
 - ii. airworthiness certification for EDTO of the aeroplane type; and
 - iii. EDTO maintenance programme.





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21.1.2.2 A safety risk assessment has been completed which demonstrates how an equivalent level of safety will be maintained, taking into account the following:

- a) capabilities of the operator;
- b) overall reliability of the aeroplane;
- c) reliability of each time limited system;
- d) relevant information from the aeroplane manufacturer; and
- e) specific mitigation measures.

Note 1.— EDTO may be referred to as ETOPS in some documents.

Note 2.— The new provisions for EDTO are based on best practices and lessons learned from extended range operations by twin-engined aeroplanes (ETOPS) to ensure that all operators and new entrants operate at the same level of safety in order to maintain the current track record of long-range operations.

The EDTO requirements established by ICAO through Amendment 36 to Annex 6. Guidance material to establish an acceptable means of compliance for implementation of these requirements will be developed at a later date.