

## **RVSM MONITORING GROUPS AND MINIMUM MONITORING REQUIREMENTS**

**AS OF: 15 June 2018**

**Version: 2018.1**

1. **UPDATE OF MONITORING REQUIREMENTS TABLE AND WEBSITE.** As significant data is obtained, monitoring requirements for specific aircraft types may change. When Table 1 below, is updated, a letter will be distributed by the Regional Monitoring Agencies (RMAs) to the States concerned. The updated table will be posted on the RMA website being maintained by the International Civil Aviation Organization (ICAO). The secure website address is: <http://portal.icao.int>
2. **INITIAL MONITORING.** All operators that operate or intend to operate in airspace where RVSM is applied are required to participate in the RVSM monitoring program. Table 1 establishes requirements for initial monitoring associated with the RVSM approval process. In their application to the appropriate State authority for RVSM approval, operators must show a plan for meeting the applicable initial monitoring requirements.
3. **AIRCRAFT STATUS FOR MONITORING.** Aircraft engineering work that is required for the aircraft to receive RVSM airworthiness approval must be completed prior to the aircraft being monitored. Any exception to this rule will be coordinated with the State authority.
4. **APPLICABILITY OF MONITORING FROM OTHER REGIONS.** Monitoring data obtained in conjunction with RVSM monitoring programs from other regions can be used to meet regional monitoring requirements. The RMAs, which are responsible for administering the monitoring program, have access to monitoring data from other regions and will coordinate with States and operators to inform them on the status of individual operator monitoring requirements.
5. **MONITORING PRIOR TO THE ISSUE OF RVSM OPERATIONAL APPROVAL IS NOT A REQUIREMENT.** Operators should submit monitoring plans to the responsible civil aviation authority and the RMA that show how they intend to meet the requirements specified in Table 1. Monitoring will be carried out in accordance with this table.
6. **AIRCRAFT GROUPS NOT LISTED IN TABLE 1.** Contact the RMA for clarification if an aircraft group is not listed in Table 1 or for clarification of other monitoring related issues. An aircraft group not listed in Table 1 will probably be subject to Category 2 monitoring requirements.
7. **TABLE OF MONITORING GROUPS.** Table 2 shows the aircraft types and series that are grouped together for operator monitoring purposes.
8. **TABLE OF NON-GROUP AIRCRAFT:** Table 3 shows the aircraft types and series that are Non-Group aircraft (i.e., Not certified under group approval requirements) for monitoring purposes.
9. **TRAILING CONE DATA.** Altimetry System Error estimations developed using Trailing Cone data collected during RVSM certification flights can be used to fulfill monitoring requirements. It must be documented, however, that aircraft RVSM systems were in the approved RVSM configuration for the flight.
10. **MONITORING OF AIRFRAMES THAT ARE RVSM COMPLIANT ON DELIVERY.** If an operator adds new RVSM compliant airframes of a type for which it already has RVSM operational approval and has completed monitoring requirements for the type in accordance with the attached table, the new airframes are not required to be monitored. If an operator adds new RVSM compliant airframes of an aircraft type for which it has NOT previously received RVSM operational approval, then the operator should complete monitoring in accordance with the attached table.

11. FOLLOW-ON MONITORING. Monitoring is an on-going program that will continue after the RVSM approval process. Long term minimum monitoring requirements are established in the Annex 6 to the Convention on International Civil Aviation. On a regional basis, a programme shall be instituted for monitoring the height-keeping performance of aircraft operating in RVSM airspace in order to ensure that continued application of this vertical separation minimum meets regional safety objectives.

**Table 1: MONITORING REQUIREMENTS TABLE (Military)**

**MONITORING IS REQUIRED IN ACCORDANCE WITH THIS TABLE**

MONITORING PRIOR TO THE ISSUE OF RVSM APPROVAL IS **NOT** A REQUIREMENT

| CATEGORY |  | GROUP DESCRIPTOR   | MINIMUM MONITORING REQUIREMENTS  |
|----------|--|--|--|
| <b>1</b> | GROUP APPROVED:<br><br>DATA INDICATES COMPLIANCE WITH THE RVSM MASPS | C17, C130, KC135   | Operators of aircraft types contained in this category shall have a minimum of 2 airframes monitored every 2 years or 1,000 flight hours, whichever is longer calculated from the date of the last successful height monitoring. Operators with fleets consisting of aircraft from more than one Monitoring Group shall meet this requirement for each group in the fleet. In the event that an operator has a single airframe from a Group, then that aircraft shall be monitored every 2 years or 1,000 flight hours, whichever is longer calculated from the date of the last successful height monitoring. |
| <b>2</b> | GROUP APPROVED:<br><br>INSUFFICIENT DATA ON APPROVED AIRCRAFT        | Other group aircraft other than those listed above including:<br><br>A178, A400, C5, C550-552, E3, F18, KC46A, KC390, P1, P8 | Operators of aircraft types contained in this category shall have a minimum of 60% of airframes monitored every 2 years or 1,000 flight hours, whichever is longer calculated from the date of the last successful height monitoring, (the number of airframes to be monitored shall be rounded up to the nearest whole integer). Operators with fleets consisting of aircraft from more than one Monitoring Group shall meet this requirement for each Group in the fleet.  |

|   |           |  |   |
|---|-----------|--|---|
| 3 | NON-GROUP | <p><b>Aircraft types for which no generic compliance method exists:</b></p> <p>GLF5-AEW, GLEX-ASTOR</p> <hr/> <p><b>Aircraft types for which the compliance method is not known:</b></p> <p>A30B-M, A310-M, A332-M, ASTR-M, B737-AWACS, C12, C21, C32, C40, C550-B-M, C35, C9, CL60-M, E135-M, E4, E6, E8, FA10-M, FA20-M, FA50-M, GLF3-M, GLF4-M, C37, IL76-M, KC10, KC-390, KC46, P180-M, R135, VC25</p> | <p>Operators of aircraft types contained in this category shall have 100% of airframes monitored every 2 years or 1,000 flight hours., whichever is longer calculated from the date of the last successful height monitoring.</p> |
|---|-----------|--|---|

**Table 2: MONITORING GROUPS FOR AIRCRAFT CERTIFIED UNDER GROUP APPROVAL REQUIREMENTS  
(Military)**

| Monitoring Group | A/C ICAO | Manufacturer Type                    | Additional Defining Criteria |
|------------------|----------|--------------------------------------|------------------------------|
| A178             | A178     | Antonov A178                         |                              |
| A30B-M           | A30B     | A300                                 | B2-100 (Zero-G)              |
| A310-M           | A310     | A310                                 | MRT, MRTT                    |
| A332-M           | A332     | KC30-A<br>KC45-A<br>Voyager KC2, KC3 | MRTT                         |
| A400             | A400     | A400M                                |                              |
| ASTR-M           | ASTR     | 1125 ASTRA                           | NAV&COM                      |
| C12              | BE20     | C-12                                 |                              |
| C130             | C130     | C-130 Hercules                       | Series: H only               |
|                  | C30J     | C-130J Hercules                      |                              |
| C17              | C17      | C-17 Globemaster III                 |                              |
| C21              | LJ35     | C-21                                 |                              |
| C32              | B752     | C-32                                 | Series: A, B                 |
| C40              | B737     | C-40 Clipper                         |                              |
| C5               | C5       | C5 Galaxy                            |                              |
| C550-552         | C550     | 552 CITATION II (USN)                |                              |
| C550-B-M         | C550     | 550 CITATION BRAVO                   |                              |
| C550-M           | C550     | 550 CITATION II                      |                              |
| C35              | C560     | 560 CITATION V                       |                              |

| Monitoring Group | A/C ICAO     | Manufacturer Type        | Additional Defining Criteria |
|------------------|--------------|--------------------------|------------------------------|
|                  |              | UC-35                    |                              |
| C9               | DC93         | C-9<br>VC-9              | Series: A, B<br>Series: C    |
| CL60-M           | CL60         | CL604                    | MPA                          |
| E135-M           | E135         | EMB-135                  | MRT                          |
| E3               | E3TF<br>E3CF | E-3 Sentry               |                              |
| E4               | B742         | E-4                      |                              |
| E6               | E6           | E-6 Mercury              |                              |
| B737-AWACS       | E7A          | B737                     | B737 AEW&C                   |
| E8               | B703         | E-8 J-Stars              |                              |
| FA10-M           | FA10         | FALCON 10                | MRT                          |
| FA20-M           | FA20         | FALCON 20                | EW/ELINT, MRT, EXP           |
| FA50-M           | FA50         | FALCON 50                | MPA/SAR                      |
| F18              | F/A 18       | McDonnell-Douglas F/A 18 |                              |
| GLF3-M           | GLF3         | C-20                     | Series: A, B, C, D, E        |
| GLF4-M           | GLF4         | C-20<br>S102B<br>TP102   | Series: F, G, H              |
| C37              | GLF5         | C-37<br>TP102D           |                              |
| IL76-M           | IL76         | IL-76                    | MRT, T                       |
| KC10             | DC10         | KC-10 Extender           |                              |

| Monitoring Group | A/C ICAO             | Manufacturer Type  | Additional Defining Criteria |
|------------------|----------------------|--|------------------------------|
|                  |                      | KDC-10<br>DC-10  |                              |
| KC46A            | KC46A                | Boeing KC46A or B767-2C  |                              |
| KC-390           | KC39                 | Embraer KC-390   |                              |
| KC135            | B703<br>K35E<br>K35R | KC-135 Stratotanker<br>KC-135 Stratotanker<br>C-135 Stratotanker |                              |
| KC390            | KC390                | Embraer KC390  |                              |
| KC46             |                      | Boeing KC-46 Pegasus   |                              |
| P1               | P1                   | Kawasaki P-1   |                              |
| P180-M           | P180                 | P-180 AVANTI   |                              |
| P8               | P8                   | B738-ERX   | BOEING P8 POSEIDON           |
| R135             | R135                 | RC-135   |                              |
| VC25             | B742                 | VC-25  |                              |

Abbreviations:

|          |  |
|----------|--|
| EW/ELINT | Electronic Warfare/Electronic Intelligence |
| EXP      | Experimental                               |
| MPA      | Maritime Patrol Aircraft                   |
| MRT      | Multi Role Transporter                     |
| MRTT     | Multi Role Transporter and Tanker          |
| SAR      | Search and Rescue                          |
| T        | Transporter                                |

**Table 3: Non-GROUP AIRCRAFT (i.e., Not certified under group approval requirements) (Military)**

| <b>Non-Group Descriptor</b> | <b>A/C ICAO</b> | <b>Manufacturer Type</b>                                     | <b>Additional Defining Criteria</b> |
|-----------------------------|-----------------|--|-------------------------------------|
| GLEX-ASTOR                  | GLEX            | Raytheon Sentinel aka RAF's ASTOR (Airborne Stand-Off Radar) | Non-Group                           |
| GLF5-AEW                    | GLF5            | GULFSTREAM G550  | Non-Group : AEW                     |

Abbreviations:

AEW

Airborne Early Warning