



International Civil Aviation Organization
Eastern and Southern African Office

**Eleventh Meeting of the APIRG Air Traffic Services, Aeronautical
Information Services and Search and Rescue Sub-Group
(ATS/AIS/SAR/SG/11)
[Nairobi, Kenya 26 – 30 April 2010]**

Agenda Item 5: RVSM Operations and Monitoring Activities

ARMA REPORT

(Presented By: ARMA)

SUMMARY
The Working Paper Presents the ARMA Report Containing an Overview of the Responsibilities Associated with the Five Key Performance Areas as documented in the RMA Manual.

1. INTRODUCTION

1.1 The ARMA in conducting its duties on behalf of ICAO, as documented in the ICAO AFIRMA Manual, Doc 9574 and in other relevant ICAO provisions, is tasked to conduct five primary functions, Key Performance Areas, and report the results appropriately to the APIRG structures.

1.2 This working paper is intended to present the meeting with the above mentioned information and facts associated with the five Key Performance Areas. The AFI RVSM Safety Policy should be continually referred to so as not to lose focus on RVSM Safety in AFI. This paper also presents the status of RVSM in the AFI Region eighteen months after implementation. The Post Operational Safety Case and Collision Risk Assessment will be dealt with in a separate paper.

A power point presentation will be compiled and presented to the meeting in order to ensure that the most important information is adequately explained.

Throughout the paper we should recall the Commitment that States made when compiling and authorising their RVSM National Safety Plans (NSP).

2. DISCUSSION

2.1 The ARMA is guided specifically by the AFI RMA Manual and ICAO Doc 9574 which contains the following five primary functions that are expected to be carried out by the ARMA:

- Establish and maintain a data base of RVSM approvals
- Monitor aircraft height-keeping performance and the occurrence of large height deviations and report results appropriately
- Conduct Safety Assessments and report results appropriately
- Monitor operator compliance with State approval requirements
- Initiate necessary remedial actions if RVSM requirements are not met

Primary Functions (x5)

Establish and Maintain a Data Base of RVSM Approvals (1)

2.2 ARMA maintains an RVSM Operational Approvals Data Base with inter alia all AFI State RVSM Operational Approvals to facilitate the safe and efficient flight of RVSM Operationally Approved aircraft in RVSM airspace as published in AFI and in other regions. The RMA F2 form constitutes the official State RVSM Approval and registration process which is lodged with the ARMA by State Civil Aviation Authorities. AFI Civil Aviation authorities need to manage this process accordingly so as not to penalize their operators. Experience is showing that CAA's appear to be hesitant to engage in the process indicating that we need to put more emphasis on this aspect. Further to this it also appears that CAA's have under estimated the amount of work that is required to maintain the RVSM system and human resources to carry out the task are not always in place. States must therefore be urged again to follow the process as operators will not obtain the full benefits offered by RVSM unless they are recorded in the database presented to all RMA's in the world. Refusal by other regions for entry into RVSM airspace without the required State approval being lodged with ARMA is now a reality. The AFI RVSM approvals dataset is placed on the FAA KSN website which is a secure site for easy access by all RMA's at the beginning of each month. In addition the dataset is also available on the ARMA webpage for access by all interested role players. The webpage can be viewed by using the following address: www.atns.co.za/afi-rvsm The States listed in the table below have been included in the dataset as the data was of the minimum standard required by ICAO for distribution. It is recommended that all States/CAA's and ANSP consult the table on a regular basis to ensure that the data is correct. All amendments should be forwarded to ARMA without hesitation.

Algeria (All)	Ethiopia (All)	Mauritius (All)	Sao Tome (All)
Angola (Limited)	Gabon (All)	Mozambique (All)	Seychelles (All)
Botswana (All)	Ghana (All)	Namibia (All)	Senegal (Unsure)
Burkina Faso(All)	Kenya (All)	Niger (All)	Sudan (Unsure)

Cameroon (Unsure)	Liberia (All)	Nigeria (Limited)	Swaziland (All)
Chad (All)	Libya (All)	Reunion (All)	Uganda (All)
Côte d'Ivoire (All)	Madagascar (All)	RSA (All)	Zambia (All)
Eritrea (Unsure)	Malawi (All)	Rwanda (All)	Zimbabwe (All)

2.3 A total of 548 AFI RVSM Operational Approvals were recorded in the latest dataset at the end of March 2010. This is an increase of approximately 70 aircraft measured from the same time last year 2009. These figures exclude the RVSM fleets from Morocco, Tunisia and Egypt that have sizeable fleets. State CAA's and airline operators should visit the ARMA webpage periodically to ascertain that their fleets are correctly recorded. State CAA's are responsible to maintain the currency of their RVSM Operational Approvals with the ARMA to the benefit of the State's operators. This section has direct reference to section 2 of the NSP.

Monitor Aircraft Height-Keeping Performance and the Occurrence of Large Height Deviations (2)

Monitoring Height Keeping

2.4 The ARMA Height Monitoring Program is now well established and AFI CAA's must ensure that they cooperate with ARMA to maintain the height monitoring targets for each operator's fleet. Fleets which allow their height monitoring to lapse will face the possibility of operating at FL280 or below until such time as the monitoring target has been met. This is essential for safety purposes. Solutions to encourage CAA's and aircraft operators to comply will need to be sought. We should recall that AFI introduced a height monitoring program during the pre implementation phase and then continued Long Term Monitoring thereafter. This initiative will further be supported by the implementation of Long Term Minimum Monitoring due to be published as an amendment to Annex 6 in November 2010.

2.5 ARMA, with ARINC as the service provider, is entering into the third two year contract which should be effective 1 May 2010 to 30 April 2012. State CAA's are urged to encourage their operators to use the GMU method for height monitoring in accordance with their agreed to height monitoring plan. This is especially true for operators that will be operating within the constraints of the AFI Region. Any proposed monitoring flights should be forwarded to ARMA for processing and placed into the planning cycle. This is true for all AFI operators wherever the operator is based in the AFI Region.

2.6 Resulting from the AFI Height Monitoring Program it is confirmed that the measurements obtained, ASE, are supporting the Technical Risk Assessment result obtained from the various CRA's. This inter alia indicates that the ability of aircraft height keeping systems to maintain their allocated Flight Levels is within the specified limits. The GMU method is returning good results with a total of 152 aircraft having been monitored. Please recall that HMU and AGHME results can also be used to supplement the program and count towards the monitoring targets for AFI.

2.7 The height monitoring program in AFI will eventually height monitor all eligible aircraft within the constraints of AFI according to the AFI Height Monitoring requirements. To date the program has recorded results mostly south of the equator which is rather disturbing as there are many operators to the North of the Equator that desperately need Height Monitoring. Time is running out to have all operators monitored before the implementation of the Long Term Monitoring Provisions in Annex 6.

2.8 All State RVSM operationally approved aircraft/operators are continuously controlled for height monitoring compliance and ARMA is aware that some fleets are due for monitoring as soon as possible. CAA's are requested to co-operate.

2.9 The AFI RVSM Minimum Monitoring Requirements are available on the ARMA webpage and are largely self explanatory and have previously been presented and explained. The Minimum Monitoring Requirements will be fully explained during the power point presentation associated with the paper, Long Term Height Monitoring and Minimum Monitoring Requirements. Section 8 of the NSP contains the State commitment in this regard. A list of States will be provided in the Power Point Presentation that will indicate which CAA's will need to co-ordinate Height Monitoring between the ARMA and Aircraft Operator.

2.10 Operational Errors Leading to Large Height Deviations

2.11 Operational Errors leading to Large Height Deviations will be discussed under the CRA presentation. To recap on Operational Errors leading to Large Height Deviations, 300FT or more, are usually derived as follows:

- From an error in the altimetry or altitude-keeping systems of aircraft
- From turbulence and other weather-related phenomena
- From an emergency descent by an aircraft without the crew following established contingency procedures
- From responses to airborne collision avoidance systems (ACAS) advisories
- From an error in following a correctly issued ATC, clearance, resulting in flight at an incorrect flight level
- From an error in issuing an ATC clearance, resulting in flight at an incorrect flight level
- From errors in coordination of the transfer of control responsibility for an aircraft between adjacent ATC units, resulting in flight at an incorrect flight level.

Conduct Safety Assessments (3)

2.12 Safety Assessments are continuously in progress to satisfy the Safety Policy and will in future contribute towards the annual CRA. The data for the 2010 safety assessment is currently being collected. In order to make these assessments successful States/ACC's must prepare and submit the required data to ARMA. This data as previously discussed is used by ARMA for two purposes and should also be retained by States for their own records. The collection and submission of safety assessment data for RVSM must enjoy a high priority as the

failure to submit data will inevitably lead to the monitoring of RVSM operations failing. States are urged to investigate all means of obtaining this data which might even mean investigating the submission of the VSAT logs for this purpose. To date the safety returns are poor.

Monitor Operator Compliance with State Approval Requirements (4)

2.13 This function is continuously in progress as ARMA uses the monthly safety assessment returns to verify that aircraft captured in the RVSM band are actually State RVSM approved aircraft and operators lodged with the ARMA. Numerous queries have been received from neighbouring RMA's to date to address the presence of certain aircraft in published RVSM airspace of which the reporting RMA had no records. ARMA was able to confirm a number of AFI RVSM State approvals in order to ensure that the aircraft would be accepted in RVSM airspace. Those operators and aircraft that were not traceable were addressed directly with the relevant Civil Aviation Authority and resolved where CAA's responded. The rest were restricted to FL280 until such stage as the State completed the approval process. Numerous CAA's have been contacted with regards to RVSM operations where no State RVSM approval can be traced. The lack of response from certain CAA's is problematic and must receive attention. The operation of State aircraft has also been presenting problems and needs to be addressed. Since our last meeting we have recorded approximately 70 aircraft that have been found lacking in the RVSM approvals aspect. ARMA considers this as very conservative as we are aware of daily schedules by unapproved operators. The meeting will be required to discuss and provide possible solutions

2.14 Where flight plans are obtained aircraft are verified with the RMA databases to confirm the integrity of the "W" filed on the flight plan.

2.15 Once again we should recall the commitment made in the NSP.

Initiate Remedial Actions if RVSM Requirements are not Met (5)

2.16 Remedial actions have been negotiated with various CAA's to find solutions for large height deviations with aircraft operators. The results have been largely successful however specific CAA's are not getting involved in the process. The ARMA considers this item as a continuous task and will be reported on as required.

Monthly FIR Traffic and Associated Returns to ARMA

2.17 During the planning phase Task Force 9, Conclusion 9/4, tasked the ARMA to compile a list of non contributing States for consideration and remedial action. Due to the sensitivity of the results of this tasking the ARMA is obliged to ensure that all FIR's are given adequate opportunity to present their returns to the ARMA which in some cases can even be on the morning prior to the meeting. Taking this into consideration the final results will be included into the power point presentation for discussion in the meeting. The period under review is 1 October 2009 to 28 February 2010. At the time of compiling this document the percentage return for AFI was very poor. The apathy demonstrated by States is a huge concern. This aspect will need to receive far greater attention in order to safely monitor the AFI RVSM system and our

responsibility towards safety. The more data returned the easier it is to compile the various safety assessments. The meeting will be required to discuss this situation and provide solutions. The Long Term Minimum Monitoring recommendation contained in the AFI RAN 8 report has reference.

AFI RVSM NPM's

2.18 The meeting is urged to once again recall that NPM's play a pivotal role in the RVSM system monitoring and are indispensable even as we move further into the post operational period. ARMA will periodically compile and distribute a reminder to all States, where there is doubt as to the name and details of the NPM, to provide confirmation to this effect. ARMA is aware that certain States have been neglecting to maintain the current details of their NPM thus making the task allocated to ARMA exceedingly difficult. A State letter was distributed to all States requesting the confirmation of NPM's however the response was dismal. ARMA will propose that the State letter be reissued to States.

ACTIONS BY THE MEETING

The meeting is requested to:

- Fully support the Long Term Height Monitoring and the meeting of Minimum Monitoring Requirements
- Support the reissuing of the State Letter to request States to confirm their Focal Point of contact for RVSM matters.

END