



INTERNATIONAL CIVIL AVIATION ORGANIZATION

First Meeting of the Africa - Indian Ocean Aviation System Planning and Implementation Group (AASPG/1)

Libreville, Gabon, 3 - 7 November 2025

Agenda Item 4: Implementation of safety and air navigation goals, targets and indicators, including priorities set in the Regional Aviation Safety and Air Navigation Plans

4.4. AFI Airspace Monitoring

AFI Large Height Deviations Data

(Presented by ARMA)

SUMMARY	
This working paper presents the reported Large Height Deviations (LHDs) within the AFI region in the last one year affecting the surrounding FIRs.	
<i>Action by the Meeting is as per Paragraph 3</i>	
<i>Strategic Objectives</i>	A - Aviation Safety B – Air Navigation capacity and efficiency.
<i>References</i>	ICAO Doc 9574 ICAO Doc 4444 Manual on the Assessment of Large Height Deviations (LHDs) based on an ATS Safety Management System (SMS) for the AFI Regions

1 INTRODUCTION

- 1.1 Large Height Deviations (LHDs) are any altitude variation of 300 ft or greater from the assigned, planned or coordinated altitude, where the planned or coordinated altitude would provide minimum required separation from other aircraft; this variation can be the result of turbulence, equipment malfunction, ATC loop errors (incorrectly following or granting ATC clearances and errors by ATC units in coordinating or failing to coordinate transfer of control responsibility), etc.
- 1.2 Experience has shown that large height deviations (LHDs) have a significant impact on operational and technical risk in the RVSM airspace.

2. DISCUSSION

- 2.1. The majority of the reported LHDs were caused by lack of coordination between adjacent Air Traffic Control Centers. The RVSM scrutiny group needs to establish what is the cause of this non-coordination or incorrect information being relayed to the next sector. It is important to analyze the data and develop a mitigation plan to address these violations.
- 2.2. The list below in **Appendix A** is for LHDs that have been reported within the AFI region, as well as in other areas outside ARMA's jurisdiction. However, it is ARMA's responsibility as the monitoring agency overseeing the State of Registry for such aircraft to analysis and action the reported LHDs.
- 2.3. **Code L and E** LHD recorded the largest reports, this symbolizes the non-RVSM approved aircraft operations in RVSM airspace and the failure in coordination between ATC units.
- 2.4. ARMA needs an updated contact list of National Program Managers, in order to coordinate awareness campaigns within respective FIRs. ARMA plans on conducting webinars and strategic audits to promote a just culture approach in resolving the non-compliance challenges.

3 ACTION BY THE MEETING

- 3.1 The meeting is invited to:
 - a) Note the information in this working paper; and
 - b) Support the just culture approach to mitigating these safety issues.

-END-

APPENDIX A

Code	LHD Category Description	No.
A	Flight crew fails to climb or descend the aircraft as cleared	0
B	Flight crew climbing or descending without ATC clearance	1
C	Incorrect operation or interpretation of airborne equipment	11
D	ATC system loop error	7
E	Coordination errors in the ATC -to-ATC transfer of control responsibility because of human factors issues	27
F	ATC transfer of control coordination errors due to technical issues	1
G	Aircraft contingency leads to sudden inability to maintain level	8
H	Airborne equipment failure and unintentional or undetected level change	1
I	Turbulence or other weather-related causes leading to unintentional or undetected change of flight level	6
J	TCAS resolution advisory; flight crew correctly climb or descend following the resolution advisory	0
K	TCAS resolution advisory; flight crew incorrectly climb or descend following the resolution advisory	0
L	An aircraft being provided with RVSM separation is not RVSM approved	46
M	Others	11
Total		119